DOCUMENT RESUME

ED 382 437 RC 020 119

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TITLE The Power of Babble: Technology and Rural Education.
PUB DATE [95]
NOTE 19p.
PUB TYPE Viewpoints (Opinion/Position Papers, Essays, etc.) (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Accountability; *Appropriate Technology; Centralization; Computer Uses in Education; Distance Education; *Educational Technology; Elementary Secondary Education; Power Structure; *Role of Education; *Rural Education; Technological Advancement; *Telecommunications
IDENTIFIERS *Outcome Based Education; Sense of Place

ABSTRACT

This paper critiques the notion that technology can solve the problems of rural schools. The critique begins with the recognition that the United States is an economic empire, that technology is the instrument of empire, and that national objectives for education are concerned with promoting economic competitiveness. While rural places are marginal to the national economy, they still contain nearly half of U.S. schools--schools whose failure would seriously compromise the overall mission of U.S. schooling. While the old educational technology focused on developing consistency by standardizing professional practices and other inputs, the new technology takes equivalence of results (outcomes) as the root of accountability. "Outcomes-based education" is the systemic initiative that makes such uniformity possible, and technology may be construed as the route through which a concordance of goals and results can best be implemented. However, the "one-best system" of schooling is inimical to rural community and rural virtues, such as sense of place and stewardship of the earth, and has no use for a rural education based in local culture. The question of whether there are appropriate technologies to support rural community-based education is discussed in terms of three beguiling arguments in favor of telecommunications in rural schools: that telecommunications is empowering, enriching, and egalitarian. The paper refutes these arguments and suggests that the benefits of telecommunications for rural schools and communities have been exaggerated. Appropriate technologies would be accessible to rural students and teachers; would serve the legitimate interests of rural places in opposition to the vested interests that are destroying rural places; and would nurture virtue ("the good") as something accessible locally rather than as an import. Finally, appropriate technology would sustain rather than divert local purposes and resources. (SV)

The Power of Babble: Technology and Rural Education

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> Never has failure been so ardently defended as though it were success. Partly because there has been some success. Partly because a civilization which is no more than a system has neither memory nor shape. (Saul, 1992, p. 175)

We are writing this article for people who work in schools and who have doubtless already heard and read much about the rapid penetration of technology into schools. Most of the discussion on this subject aims either to inform or to generate enthusiasm; lacking is a critical treatment of technology that attends to the questions of educational purpose and equity. Technology connects to culture, politics, and history--and these are the very issues usually ignored in things written for teachers and administrators.

We are not by nature or judgment optimists. But we do understand the hopes--especially those of rural educators--that new technologies inspire. Rural schools are under continual attack for being too small, for being located in communities characterized as "not valuing education," for not offering a comprehensive curriculum, for being inefficient. The very survival of rural schools and, some think, rural communities is at risk. Bruce Barker (e.g., Barker & Taylor, 1993) and David Monk (e.g., Monk, 1989) and are among the concerned scholars who have written persuasively about the possibilities of electronic technologies for helping rural educators deal with the immediate attacks and the long-range threats.

Despite our lack of optimism, we do not recommend outright "technology refusal" as a common strategy for dealing with the challenges and threats we describe. In only a few cases will cold-turkey refusal make good sense. In most cases, though, economics, politics, and history will shape what transpires in local communities and schools--and that means some accommodation with the new developments in telecommunications.

But it is already becoming clear that rural schools typically (not always!) lack the infrastructure and resources to offer all students the sorts of tools touted as twenty-first century miracles (Web browsers, CD-ROM databases on local area networks, and on and on). Basic connectivity is, at present, the main impediment. Rural schools are not even served by 56Kb lines; they cannot afford to install them; and they cannot afford to equip classrooms. They are behind on building maintenance and replacement; computers and inservice training are additional expenses. Solutions to such problems exist in some communities--but the facilitating circumstances (e.g., good relationships among agencies, leadership to coordinate the effort, consistent funding) are comparatively rare.

The key challenge, however, is not "how to get the stuff." Rural schools will lose that rat-race. By the time they are "up to speed" in technology, the benchmark will have changed--an endgame that is in the nature of what it means to be "rural." The plans that people make for rural schools will differ according to whether they understand this situation or not. Understanding it, they can make more sustainable, longer-range plans. And their plans will stand a better chance of supporting a rural sort of education that makes sense.

One final point of clarification: We are not "against" technology. We personally use all sorts of technologies and are fully involved in the technological enterprises of the organizations that employ us. But we see that other issues are much more important. Technology is a form of process and, for us, education is substance: ideas. content, intellectual and emotional meaning. We also agree with the sociological interpretation that indicts American culture for its tendency to "technologize" everything. This tendency harbors particular dangers for rural places and peoples. In face of these dangers, we offer critique, not to dash the hopes of rural educators, but to call forth a careful regard out of which such hopes might be realized.

Technology and Empire

To understand how technology functions in rural schools, urban and suburban readers (like their rural colleagues) need to recognize that the United States is an empire. This acknowledgement does not constitute a moral judgment, but a fact recounted often in history textbooks and elsewhere. The circumstances of rural America today, and therefore of its schools, are tied up with the "manifest destiny" laid out for the nation as a whole. Technology, as an instrument of empire, commandeers the destiny of persons, of communities, and of the earth itself in service of national imperatives.

Grand territorial ambitions characterized the United States throughout the nineteenth century: the early empire annexed the "Louisiana Purchase," large portions of Mexico, Cuba, Maine, Puerto Rico, Hawaii, the Philippine Islands, Alaska. We are often reminded of this legacy by the just, yet insistent, anger of the dispossessed--Indians, Mexican Americans, African Americans, and Native Hawaiians and Alaskans. Though we now attend to the specific claims of these peoples, we sometimes forget the general rule that empire works systematically to dispossess rural areas and the people who live there, in favor of the centers of economic and political power. Rural economies--and rural educations--exist at the margins of this centralized power.

When territorial ambitions on the continent ended with the closing of the American frontier, the nation began to recast its destiny in terms of economic, rather than territorial, dominion. From the start of the twentieth century, the implications for education were clear: an efficient system of schooling was required, from coast to coast, from countryside to city, and from early to late in people's lives. After 1957 (the year of the Sputnik), the U.S. desperately sought to be first in the world in math and science. Then as now, this quest was made in the name of continued economic dominion. As military conscription had supplied cannon fodder for territorial dominion during the nineteenth century, so schooling was to supply corporate fodder for economic dominion in the twentieth (and into the twenty-first).

Reform reports left no doubt about the priority of this educational mission. They said a great deal less--almost nothing, in fact--about school's responsibility for cultivating intellectual and moral autonomy (Howley, Howley, & Pendarvis, 1995; Kamii, Clark, & Dominick, 1994). Yet many educators--Cuban, Eisner, Greene, Levin, Noddings among them--caution against basing education on the shallow and perhaps vainglorious aspirations of a system bent on constant economic growth.

Considering these aspirations, it is no accident that rural schooling (and rural residents) have been excluded from the discussion. In the logic of an ever-expanding economy, rural life is passé. This logic derives from the national economic prerogatives; it surfaces in the priority given corporate agendas and even pervades the ways people commonly think and speak (Foucault, 1979; Gaventa, 1980; Kemmis, 1990; Whisnant, 1980). In a way, it is a conspiracy--certainly not the intentional plot of an individual or group of persons--but a machination of circumstance, system, and power. One consequence is that rural people, like other dispossessed peoples, are barred from the rooms where the real decisions are made.

Rural Schooling in the Systemic Agenda

This story bears on what happens in rural schools from day to day and what will happen there in the future. And it helps us make sense of the cherished hope that technology will "solve the problems" of rural schools.

These problems are certainly longstanding. Ellwood Cubberley--urban superintendent and Columbia University professor (circa 1920)--also looked to technology to solve the problems of rural schools. Cubberley, like many conservative observers, imagined that rural life was a phase in the development of civilization. Once passed through (or grown out of), rural life would indeed become obsolete. Cubberley's hypothesis has become the received wisdom; many people incorrectly assume that history has confirmed the hypothesis.

They are, of course, wrong. Rural schools are an important part of the national scheme of schooling implemented in the United States. In the 1990-1991 school year, following decades of successful rural school consolidation, nearly half (46.4 percent) of regular operating schools were located in rural areas or small towns (National Center for Education Statistics, 1993). In short, the success of the overall mission of U.S. schooling would be seriously compromised by the failure of rural schooling.

The problems identified by the older technology centered on curriculum, and the solutions (based on urban practice) centered on increasing the size of rural schools. The problems identified by the newer technology necessarily concern the better integration of rural schooling into the national system of schooling, with its agenda of "economic competitiveness." Rural schools, like all schools, must be held accountable to that agenda. Otherwise, the system itself will be "at-risk."

Technology as an Accountability Mechanism

In fact, the older technology did solve many of the administrative problems that state education agencies (SEAs) confronted when they assumed control of rural schools. Consolidation built up larger units and fashioned county districts (especially in the poor states of the Southeast). SEAs found it much easier to take account of--and exert influence over--the doings of 100 or 200 districts as opposed to 1,000 or 2,000. Moreover, this influence had its notable triumphs: the amount of schooling accessible to rural residents certainly increased over the course of the century, and now the U.S. population is more thoroughly schooled--and more functionally literate--than at any time in the nation's history (Berliner, 1992; Bracey, 1991).

But the old technology left much to chance; it did little to assist in controlling the results of schooling. Under the new manifest destiny--the "new world order"--the system's agenda is to direct schooling more clearly toward economic goals. It is no longer sufficient to leave the results of schooling to chance. Already, local education agencies (LEAs) are supplying SEAs with budget, personnel, and

performance data in electronic format. Many rural districts are using distance-transmission technologies to import instruction and staff development from national and regional vendors. Special projects have begun, through use of the Internet, to link rural educators to distant resources such as on-line public access catalogs (at universities and the Library of Congress). Numerous projects intend to show rural teachers how to incorporate distance-learning and telecommunications into their instructional practice.

Improved accountability is an obvious parallel function of both the old and new technologies. But the old technology focused on developing consistency by standardizing professional practices, and, to a lesser extent, resources. Similar "inputs"--teaching specializations and credentials, schools of sufficient size to accommodate age-grading, and a minimally acceptable (or "foundational") share of resources--were considered sufficient to produce acceptable results across the emerging system.

By contrast, the new technology takes equivalence of results ("outcomes") as the root of accountability. In practical terms, this means that, with few exceptions, educators and community members everywhere must subscribe to the same results (Wagner, 1995). "Outcomes-based education" is the systemic initiative that makes such uniformity possible. It links national goals through curriculum frameworks and new assessment technologies to "higher" levels of student achievement. Technology--computer-mediated interactions of institutions and persons--is often construed as the route through which this concordance of goals and results can best be implemented (e.g., Business Roundtable, 1992; National Education Goals Panel, 1993).

Is This Education?

Outcomes-based education is the "philosophical" foundation and, hence, the bias of the new technology. Of course, some people argue that technology has no bias, that it is a neutral tool. In this view, only the uses of technology can be misguided; appropriate and just uses are possible. People simply need to determine what those uses are and implement them. Under ideal circumstances (see

Rawls, 1972), this might work. The problem is that powerful vested interests often decide the uses (and outcomes) of technology. Open discussion invoking rational consideration of appropriateness or justice is rare (Mander, 1991).

Tools are not just instruments, however. They are born into, developed for, and applied on behalf of the interests of power. Television numbs and misinforms as well as it amuses; much more rarely does it educate (Mander, 1978). But the major purpose of television is the accumulation of wealth, a purpose that some futurists also claim for software and for education generally (e.g., Perelman, 1992). Many observers (e.g., Postman, 1992) believe that the development of technology and education along these lines has reached a dangerous point--where "technological solutions" threaten to overturn democracy altogether.

People in rural communities are justifiably hostile to the agenda of outcomes-based education. The tightly linked, systemic vision guiding development of the new technology is intended to further divide local people, especially rural and other marginalized peoples, from the education of their children. And in this world, rural people experience more than their fair share of powerlessness (see Gaventa, 1980; Kemmis, 1990).

Opposition to the "philosophy" has already begun to color reception of the technology intended to implement it. One of the earliest uses of the new technology, as noted previously, is to digitize an increasing amount of data collected by government entities. The more the state knows about each person, the more effectively it can correct or reform behavior. In Tennessee, for instance, the SEA is monitoring the standardized, norm-referenced achievement of every public-school child in the state, every year. It is a massively systematized operation, but similar efforts are underway in many places.

The opponents of outcomes-based education are not the only ones suspicious of these efforts. The philosopher Michel Foucault (1979) understood that technologies remake the ways people relate to one another. He insisted that surveillance (principally through data collection and analysis) is a major

avenue for disciplining society. In other words, Foucault believed that technology is a system for allocating, distributing, and regulating power. In this view, technology is anything but neutral. Foucault's work allows us to see how the current technology-based data gathering efforts connect to a more extensive and enduring strategy--a systemic venture that is inextricably linked to the development of empire.

Educations for Rural Places

The systemic effort has a difficult time accommodating the common good of rural areas (Gaventa, 1980; Kemmis, 1990); rural scholars are rightfully skeptical of "the one-best system" of schooling and the technologies that support it (see Tyack, 1974). After all, this system has undermined local control, forced school consolidations, and subjected the curriculum to the tyranny of national surveillance.

Why, then, are rural educators themselves not similarly wary of the new technologies--distance education, computer-assisted instruction, and especially telecommunications--that promise an even more efficient, homogeneous, and ubiquitous "best system?" In part the answer lies in the extent to which rural education has already surrendered to the logic of the one-best system, which, as we demonstrate above, construes all of education as technology. But in part it lies in the strong appeal of the new technologies themselves.

American culture values almost anything that is new, and the new technologies are certainly seductive. Their allure lies in the promise of innovation without sacrifice. Indeed, the "interactive" quality of the new technologies seems to offer a way for rural citizens to participate in the mainstream of American life without sacrificing traditional virtues.

What are these traditional virtues and are they worth preserving? Principally, they are the circumstances and commitments associated with particular places--virtues that are of value precisely

because they are unique. They are not standardized, and they are certainly not easy to maintain in the face of the agendas of empire (Jacobs, 1984). We would argue, with others, that stewardship of the earth within particular rural locales is chief among rural virtues. This virtue, in particular, is hidden from the urban masses, who can barely see the earth. It is hidden also from many rural people who, through machinations of ownership, have been entirely dispossessed of responsibility for the places in which they live (Appalachian Land Ownership Task Force, 1983). But the virtue persists as rural people struggle against the odds to care for the places dear to them.

As educators, moreover, we also recognize that formal sorts of education entail another virtue--stewardship for a community of learning. Such a community is rooted locally and, only then, extends outward; every child and every adult belongs. A community of learning is central to culture, all culture: the good upbringing of children is a community endeavor.

Part of why education on the massive urban model fails is that it cannot call upon community because community has been lost in an excessively mobile urbanizing society. Schooling typically fragments rather than preserves community. Its mission is impersonal and distant, and schools in many places are too large. Society--that is, the social "system" that serves empire--operates to sever schooling from its cultural roots, to extract it from the context that permits true education to flourish.

This extraction has dire consequences, and educators are advised to invent communities to compensate for what has been lost. Given the extent of the dislocation and the magnitude of its consequences, however, the effort is destined to be futile. Furthermore, educators tend to base "intentional communities" on nostalgic images: communities as places where people know and like one another, where people agree. But communities are not necessarily places where everyone thinks alike. In fact, there is a key difference between community and society. In a community, people remain together despite their differences, whereas in society, people remain separate despite their common

interests (Nisbet, 1966). Our schooling trains people for society, but it does not education them for community.

Rural sorts of education would be education for community--for remaining together on a local basis despite our differences. They would, in our view, include thoughtful care for local places (see Berry, 1990). Formal education would deal, then, with the life of the mind attuned to this mission. It would be an education in virtue, locally rooted, and very different from the education for greed that prevails at the behest of empire.

Oddly enough, the urban, "one-best system" sort of schooling is also anti-intellectual (Howley et al., 1995). As it disrespects the person, by decontextualizing education, it also disrespects the intellect. Placing it in service of narrowly instrumental ends, the system depersonalizes and sanitizes intellect. Rural sorts of schooling, as we imagine their broad features, would summon the personal commitments that animate intellect, cultivating more thoughtful dispositions among members of the community.

And this observation points up another dimension to the community of learning--one that better spans generations and locales than the one-best model. The rural sorts of education we imagine would unfold on a literate basis--where reading, writing, and calculating are valued in themselves as meaningful endeavors. Instead of appearing to young people as a tool with which to secure "good jobs," literacy would be part of the foundation of community and the stewardship of rural places.[1]

Double-Think

Are there appropriate technologies that would support rural sorts of education? Conventional language makes it very difficult even to talk about such matters; the power of babble, we need to

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[1]This position is by no means self-evident, but limited space precludes development in this article. See Out of Our Minds (Howley et al., 1995) for a more extensive treatment.

remember, is strong. Before proceeding to treat the issue of appropriate technology for pro-rural educations, then, we must consider the language that shapes how we think about education.

Rural educators, like educators all over the country, are imprisoned by a language of double-think (Brown, 1991). This language controls educational discourse, which is structured to express certain ideas and to crowd out others. It privileges the imperial, corporate agenda and disparages all others. In rural communities, and perhaps everywhere, this language is designed to set educators apart from--and above--parents and community members. It is a language that construes rurality, and also poverty, race, and cultural difference, as deficiencies, as problems to be corrected. And it makes teachers into technical experts capable of solving these "problems."

While appearing to exalt teachers in this way, the language of double-think nevertheless serves teachers badly. It encourages them to doubt the evidence of their senses, to replace wisdom and self-knowledge with pseudo-scientific jargon. The language of double-think asks teachers to remake a gradual process of nurture--the good upbringing of a community's children--as something amenable to predictable laws, to economic and instructional efficiencies, to economies of scale.

Double-think, moreover, calls forth a variety of deceptive euphemisms. For example, it disguises the mechanics of sorting students for the workplace as a process of self-actualization, the assurance of equal opportunity as a legitimate substitute for equal distribution of educational resources, and the market's need for brain-dead service workers as a mandate for critical thinking in the schools.

Double-think convinces educators to cast off older technologies as disappointing while at the same time inducing them to view the latest technologies as wildly promising. Of course, not all educators succumb to the appeal of electronic technologies, some even reject the behavioral technologies, and a few doubt the merits of viewing instruction as a technology at all. But these are considered Luddites; most of their colleagues view them as obstructionists, blockers of progress, rather than as radical dissidents and exemplars of moral autonomy.

Double-think is dangerous, and we ourselves derive lessons from our own gullibility. Over the past several years, we have spent some time and effort to advance the use of telecommunications in rural schools. We have hoped for the best. We now doubt these hopes, recognizing in them the ideological sleight of hand that characterizes double-think. Three arguments were the most beguiling.

Telecommunications is empowering. The spirit of the frontier is what America is supposed to stand for. Computer technology beckons with seemingly endless possibilities, room in which finally to be free. There is a saying among certain of the pioneers of telecommunications networking: "Information must go free." Cyberspace is a virtual frontier.

The fundamental problem with this view is that when rural communities and schools accept technological "solutions," society foists the "inevitable" upon them. They give up, rather than gain, power. This is in the very nature of progress: technological culture innovates in order to garner power for those who sponsor it. The virtual frontier is already being sold to the highest bidder. Displacement of local economies and local cultures is not an accident of progress; it is integral to progress.

Telecommunications is enriching. Rural places appear to the empire as barren and substandard--backward, parochial, and vitiated places that need enriching. The assessment is partly true. The communities that once flourished in rural places are giving way to the routines and expectations of the mass market (e.g., fast-food restaurants, television, "popular" culture). But rural areas still do not enjoy the advantages of cities and suburbs. In the imperial view, of course, part of the blame lies with the victims, who are not sufficiently modern to take charge of themselves (DeYoung, 1995; Whisnant, 1980).

Telecommunications appears to offer an efficient solution. Telecommunications makes it easy and cheap to import good things (information, virtual objects) from the imperial center. The promise of telecommunications is that children can experience the wider world without leaving their homes or schools, without straying from their desktop computer terminals.

The fault of this reasoning, of course, lies in its identification of what precisely in the rural circumstance is demeaning. The assumption is that rural culture itself is demeaning. But what demeans the rural experience is not authentic local culture, which was largely undermined when extraction industries (including "agri-biz") plundered rural lands. What demeans the rural experience is the mass culture that was brought in as feeble compensation for the culture that was lost.

Like television, like the automobile, and like electrification, telecommunications will eventually take away more than it gives back to rural places. There are some benefits for rural residents, but these technologies always benefit most those who plunder the earth and deplete the spirit of rural America.

Telecommunications is egalitarian. One final promise draws sympathy for this technology: Telecommunications is said to be egalitarian. For relatively low cost, access to information networks can be distributed to everyone. Rural schools, and perhaps rural residents in general, can at last have equal access to a desired resource.

But this access will prove less beneficial to rural areas in the long run than the promise suggests. Already commercial exploitation has begun, though the outcome is not yet fully determined by the forces of production. It is like blacksmithing in the period right before the marketing of the Model-T: Its days as a cottage industry are numbered. As corporations emerge in the role of principal actors, egalitarian motives and grassroots systems will lose power and appeal. Though all schools may have access to some text-based resources and services, wealthier schools will have the best access to services--conferencing options, digitized video and audio databanks, full-text library materials.

More fundamentally, though, we are not convinced that these instructional baubles deliver much in the way of substantive benefit (a good book and a knowledgeable teacher can deliver much more). Symbolically, however, they serve to mark off the boundary between the haves and the have-nots. And the empire must circumscribe the have-nots in order to mark them as deficient and, hence, to control them.

In a nation that equates quantity with quality and novelty with virtue, there are few options for principled resistance. It is hard to know if rural schools and communities would be better served by demanding equal access to the "goods life" or by demanding to be left alone to reinvent authentic local culture. Telecommunications offers little help to either project, however.

Appropriate Technology

Americans have short memories and for good reason: we are on the road of progress, our "true and only heaven" (Lasch, 1991). With us, only a sentimentalized memory is needed, one that reassures us that what came before was inefficient, quaint, and regrettably simple. The past, in short, bores us. A quick poll of students will confirm this assertion. The present, and certainly the future, are much more exciting; they are seen (or manipulated) to compel our interest.

We, in the present, eagerly anticipate a boom in the future. Will progress at last fulfill the promise that people in the 19th century saw in science and technology? Will justice thrive as information goes free? Probably not. Gaventa (1980), writing about booms, makes a good point:

> Booms and their spirit do not last. To survive, the interests behind them must develop more stable forms of self-protection, such as control over the political apparatus and the shaping and instilling of supporting values. (p. 58)

This caution is easy to forget when enthusiasm overrides reflection and when greed outstrips virtue.

But heeding this caution offers the only hope for sheltering true sorts of education in rural America. Built around thoughtful literacy, stewardship of rural places, and stewardship of community, such educations would recognize and provide for the responsibilities, contradictions, and risks that real commitments entail. This means that rural sorts of education would be educations in courage for principled action.

What arrangements of technology would be appropriate to such educations? They would first of all be ones that teachers and students could make use of. They would not be designed and mandated by an SEA. Second, they would constitute systems that serve the best interests of rural places and not the vested interests of empire. Indeed, they would have to provide vehicles for opposition to those vested interests. Third, and perhaps most critically, appropriate educational technology in rural areas would have to nurture virtues locally; that is, they would have to present "the good" as something accessible locally--and worth struggling for--not something imported from the imperial center. Finally, appropriate technology would accomplish local purposes in ways responsive to local commitments and circumstances. Technology would be appropriate, in particular, when it sustained resources locally rather than diverting them elsewhere.

With these considerations in mind, it would be a pointless exercise--and one that contradicts our critique--to endorse particular forms of technology for rural schools. One might say that writing at the end of the twentieth century requires wordprocessing, or that electronic mail fosters writing for a purpose, or that "constructivist" approaches to "authentic learning" require computer simulations. In general, each of these observations makes some sense. But we suspect that any such claims lack inherent merit. Without deep respect for and accommodation to local circumstances and commitments (virtues in context), these sorts of claims lack merit altogether. Such disrespect already accounts for the failures of the one-best system.

The ultimate danger for humans in society is that the one-best system will override the democratic process, that technology--in the guise of an automated consensus--will make us believe that the democratic forum is an unwieldy relic. Neil Postman (1992) calls this lunatic version of politics "technopoly." Rural places, where community persists and where true educations still stand a chance, harbor genuine alternatives to technopoly.

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