

Of Genies and Bottles

Technology, Values, and Choices

by Ruth Hubbard

Le présent article analyse les répercussions des nouvelles technologies et les choix que nous pouvons faire pour résister aux connaissances et aux innovations techniques susceptibles d'entraîner des maux sociaux comme la discrimination génétique. Résister aux nouvelles technologies en raison de leur impact social ne signifie pas faire fi de tous les progrès technologiques. Il s'agit d'un acte de responsabilité sociale impliquant le choix de connaissances et de technologies devant améliorer la société et le rejet de ce qui pourrait avoir des conséquences nuisibles.

We need to escape from the techno-fatalism embodied in the sentiment that the genie is out of the bottle and we cannot put it back. We cannot afford to accept the notion that a technology, once initiated, will grind on; that its course cannot be changed, and that it certainly cannot be stopped.

This is especially necessary with reference to biotechnology, which will intrude increasingly into our daily lives as scientists and entrepreneurs develop it further. But in order to affect the course of this, or any, technology, we need to keep informed, so that we can say no whenever and wherever we want to, and do not become overwhelmed by the quantity of specialized knowledge involved. And when we oppose specific scientific ventures or technologies, we must recognize that we are motivated by responsible citizenship, not by a technological nihilism that has come to be misnamed Luddism.

Rehabilitating the Luddites

Before going on to draw some specific examples from biotechnology, I want to digress briefly and try to redeem the reputation of Luddism. Those of us who oppose certain technologies are often called Luddites, but the time has come to stop defending ourselves against that charge and own Luddism as a proud heritage worth perpetuating. And this is an appropriate opportunity to do so because Margaret Benston, whom we are honoring in this volume, was the person who alerted me to the historical realities surrounding Edward (or Ned) Ludd, the man from whom Luddism takes its name.

Luddism was a social movement in the early nineteenth century, at the beginning of the industrial revolution in England. The Luddists were artisans in the English Midlands—Lancashire, Nottinghamshire, Yorkshire. They are usually described as lawless men who broke machines, especially the weaving frames and stocking frames that were being brought into the new factories to replace the tools they were used to using in their workshops, which often were part of their homes. But Luddism was a much more profound political movement than that. It was a rebellion against the introduction of the factory system.

The Luddites opposed the factory owners for degrading skills and for replacing skilled craftsmen with young boys and other unskilled workers. They demanded a minimum wage, control of sweatshops that employed women and children, a ten-hour workday, arbitration of grievances,

efforts to find work for skilled craftsmen, prohibition of shoddy work, and the right to organize into trade unions. For this reason, in their so-called riots, the Luddites targetted the weaving frames of manufacturers who had lowered their wages, not of those who hadn't. And even within a single shop, they sometimes broke only frames of a master who had hired low-paid workers, not those belonging to masters who hadn't. We need to recognize in Luddism an important historical example of a selective opposition to technologies that people decided were constricting their lives, rather than freeing them.

Like the Luddites of old, most of us who oppose some of today's technological 'advances' are not opposed to technology per se. We simply insist on exercising our right, if not our civic obligation, to discriminate among technologies. And we must remember that, though the Luddites failed to stop the factory system, some of the regulations and improvements for which they agitated were put in place.

The question of "choice"

This raises the question of what basis we want to use to discriminate among technologies and—more important—who that "we" is that can and does the discriminating. When we think about what values should frame our opposition, we need to come to terms with the standard questions: Isn't all knowledge good? Shouldn't we encourage scientists to learn and find out all they can and later decide what knowledge to implement in practice

and turn into technology?

That might be nice, but unfortunately it isn't how the world works. Particularly in a profit-oriented economy—and at present that's what exists just about everywhere—any knowledge from which scientists and entrepreneurs can envisage generating a profit will be exploited.

Some people argue that if a technology can be made to generate a profit, by definition that means that people want it. But that is naive. With present means of advertising and marketing, it is not difficult to make enough people want whatever entrepreneurs wish to sell. And that's as true of the new biotechnologies, such as *in vitro* fertilization, embryo selection, or genetic screening tests as it is of cigarettes, which we all know are bad for people.

Those of us who want people to be able to discriminate not only among technologies, but to go further and decide which knowledge is worth knowing, have an enormous task ahead of us. We need to raise people's awareness of the issues at stake as well as to give people access to the facts and to information that will enable them to make reasoned choices so that they are not forced always to choose the most widely advertised alternative.

To make this concrete, let us look at just one family of technologies that is growing by leaps and bounds: predictive genetic tests. These tests are not meant to diagnose an illness or disability, but to *predict* the likelihood that it will occur. Such predictions are usually made by means of prenatal tests or by testing healthy people who are said to have a greater than usual likelihood of developing some condition in the future.

The benefits of such predictive tests are problematic, because usually the predictions can only assign probabilities that a given condition may occur, but do not indicate whether it will in fact occur or how disabling it will be if it does. The tests can offer statistical information, but this is of questionable benefit to the individuals who are being tested.

On the other hand, these kinds of predictions open the door to a new form of discrimination, which has come to be called *genetic discrimination*—discrimination against people because of a perceived risk that they will develop a genetically-linked health problem some time in the future. Though the tests are relatively

things. How about the choice to refuse predictive tests? How real, at present, is the choice of a middle-class woman over 35 *not* to have amniocentesis? What about the choice of a woman over 50 *not* to have a mammogram? How about a pregnant woman's choice to go into a bar and order a drink—not to get drunk, just to have a drink, or maybe even two drinks? I am purposely picking examples where there are still arguments on both sides, but where we hear the arguments on one side much more loudly and often than those on the other.

These are all so-called life-style choices, though they really go much deeper than that. What about a woman's choice to

continue or *discontinue* in a job that may pose health hazards to a developing fetus, if she needs the income and no safer, well-paid job is available? Are any of these really questions of choice? Choice is a catchword in our liberal, individualistic society, but it is rarely a practical reality in matters that may have a profound impact on our lives.

Choices need to be made at the beginning, before a technology becomes so entrenched that cultural norms call for only one approved way to choose.

They need to be social choices, not individual choices. And we need democratic mechanisms for making these choices as a society. The individual person's right to choose, precious as it is, is not enough.

How to put genes back into their bottles

Lest we become discouraged, let us look at a situation where the level of technology has been reduced—at a genie



Gail Geltner, "New Values and Choices"
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new and only a few of them are available at present, there are already documented instances of otherwise qualified people being denied employment, health or life insurance, the right to adopt a child, or even a driver's license on the basis of a predictive genetic test. (Hubbard and Wald, Chapter 10)

Let us think for a moment about the meaning of the concept of choice once a technology or medical practice has become accepted as the right way to do

that has been shoved a little way back into the bottle. I refer to the demedicalization of childbirth. It is now possible to give birth in less technological and medicalized ways than I was able to do some thirty years ago. Of course, it is also possible to have a much *more* technological and medicalized birth than I did. In many teaching hospitals, the caesarean rate has tripled or quadrupled since those days, and even women who do not have a caesarean section can be exposed to technological interventions all along the way. But the women's health movement did open the possibility of reducing the level of technology, so that now a woman can consult a midwife instead of an obstetrician, and birth her baby at home with no technology whatever. And she can do this not just because she is too poor to pay for a medicalized pregnancy and birth, which is the way it used to be thirty years ago, but in an informed way and by choice. And though this choice is not available to every woman, and not every woman would wish to make it, the women's health movement has made a big difference by supporting women who want to avoid routine technological interventions in their pregnancies and births.

What to do?

This example shows that to gain control or make changes we need to organize and work politically. For that, hospital or labour or bioethics committees are not enough. We need advocacy and education at the grass roots, or as close to them as possible, so that ordinary people do not look on technology as their salvation or their enemy, and in either case as an aspect of fate.

When it comes to biotechnology, one of the large questions we need to address is this: should we be working on high-tech solutions to any health problems, while the main burden of death over much of the globe, and a good deal of it right here in the United States, is due to preventable causes—hunger, malnutrition, poverty, contaminated food and water, and so forth?

So long as the scientific entrepreneurs continue to develop and implement extravagantly expensive technologies, these will be of use only to people who can afford to pay for them. We must do all we can to oppose so-called solutions to health

problems that are so expensive that they, by definition, ration healthcare for the poor.

We keep hearing that socialism doesn't work. But capitalism surely doesn't work, when companies can make profits by marketing expensive, and sometimes health-damaging, technologies that skew our needs and priorities.

We need a lot of activism and a revitalized "Science for the People" movement that produces science shops and science fairs whose message is not just "Ain't Science Great?," but that give people the information they need to make critical decisions about how they want to see our common resources used. And, of course, this information must be presented in an intelligible and relevant form.

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There is a problem here, and that is that it is difficult to convince people they should know, and indeed would enjoy knowing, about the birds and the bees and the flowers when these people live in environments where they never see a bird or a bee or a flower. There is a real question of how to arouse an appreciation of the fascinating and elegant ways nature functions, and to stimulate a desire to control science and technology, in people to whom nature is utterly abstract, and to whom science and technology, though alien and overpowering, are part of the daily environment. And another thing: it is hard to know how to make people understand the need to make choices about whether to devise and implement tech-

nologies, when technology is much more real and "God-given" to them than are the natural functions for which technologies are meant to substitute or on which they are meant to expand.

These are crucial problems that don't get talked about enough. Perhaps the first genie that needs to be put back into its bottle is our alienation from the ways nature and our bodies function. Presumably technologies get developed to improve on what exists in nature. But if people have no idea what that is or was, how can they decide whether the technologies offer improvements? So, "choice" may be a key word in our society. But people can only make choices when they know the alternatives among which to choose.

What better place than in a volume dedicated to the memory of Maggie Benston to remind ourselves that it is our job as socially conscious and involved scientists, educators, and activists to help people reclaim that knowledge? We have to look critically at who stands to gain from each specific technical innovation and who loses, and to spread that information. We must help people to question the decisions to develop specific technologies and support them when they decide to oppose these decisions. By doing that, we do not become irresponsible nay-sayers and "Luddites" opposed to all forms of technology. We become responsible teachers and advocates for fairness and social justice.

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References

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