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Philosopher's Corner

The Hidden Life of Science & Technology

In *The Left Behind: Decline and Rage in Rural America* (2018), the sociologist Robert Wuthnow describes the results of eight years spent interviewing rural Americans about politics and culture. Wuthnow finds "a general fear that traditional moral rules were being wiped out by a government and a culture that doesn't understand the people who still believe in these things." Washington is blamed for forcing cultural changes such as shifting attitudes toward homosexuality and sexual identity, and for enacting environmental regulations that overburden municipalities and weaken traditionally male jobs in fields such as the extractive industries.

Wuthnow views this as mostly a case of scapegoating. State and federal governments are responding to and codifying rather than driving the changes occurring in culture. He sees rural anger as rooted in cultural resentment and reactionary racism, as well as in the steady destruction of a slower, more conservative way of life.

I don't so much disagree with Wuthnow as want to dig beneath his claims. Racism is a persistent fact in American life, and Washington can be an implacable overseer. But the disarray of traditional moral practices Wuthnow's interviewees complain about isn't primarily a matter of government overreach. Other, less visible forces are at work.

We hold the greatest source of disruption in our hands. I mean, of course, the multipurpose gadget that we anachronistically call a cell phone. But the cell phone is only an obvious example of technologically driven change. Think of how the process works. Bright minds invent technologies, which are then introduced into the marketplace. Once there, people repurpose them according to their lights, which can often entail the violation of social norms. Over time, the very idea of social norms fades, as it becomes unpleasant (and often impossible) to police social behavior.

Washington and Hollywood are seen as the culprits of cultural dislocation, and they certainly play a role. But their actions are often reactions to forces generated by another iconic location: Silicon Valley, our shorthand for disruptive technological innovation.

Laissez-faire capitalism has long been considered unworkable. Today, however, technological advance approaches the status of laissez-faire, which has prompted a laissez-faire attitude about cultural

norms. Of course, there are some restrictions on research, especially when it involves human or animal subjects. And one can find calls for restraints on future scientific and technological development. These, however, are usually pretty weak beer. For example, the Future of Life Institute held the Asilomar Conference on Beneficial AI in 2017 and promulgated a set of 23 principles. One read: "An arms race in lethal autonomous weapons should be avoided." Well, yes! But one finds little that is likely to prompt action by policy-makers. No senator or Washington think tank is arguing that we freeze funding for research on artificial intelligence (AI) while we assess the risks, or declaring that do-it-yourself biology should be illegal. On the contrary, everyone expects things to accelerate.

We could call this the Wizard of Oz thesis about science and technology: our eyes are drawn to the flash and smoke of controversies but do not attend to who is at the controls. One notorious figure sees the roots of society's conflicts in science and technology. The former UC Berkeley professor and convicted murderer Ted Kaczynski, aka the Unabomber, had a clear message for cultural traditionalists in his manifesto "Industrial Society and Its Future": "The conservatives are fools: They whine about the decay of traditional values, yet they enthusiastically support technological progress and economic growth. Apparently, it never occurs to them that you can't make rapid, drastic changes in the technology and the economy of a society without causing rapid changes in all other aspects of the society as well, and that such rapid changes inevitably break down traditional values."

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Kaczynski called attention to the peculiar belief that whereas the efforts of scientists and engineers are viewed as beneficial when the effects are positive, they are seen as neutral when the consequences are negative. Thus, when applicants for National Science Foundation grants are asked to describe the potential broader impacts of their research, these are always assumed to be positive in nature. They are never asked to provide an account of the possible "grimpacts" of the research.

Now, I admit that this is a hard argument to make stick. The chain of causality running from scientific discovery to technological innovation to political, economic, and social effects is often long and winding. As with climate change, the effects may become visible only far downstream, via drought, civil war, migration, or reactionary politics. The problem of the downstream, knock-on aspects of ethical responsibility was raised long ago by Aristotle. He noted that although a drunk may not be responsible for his actions, he is responsible for being drunk. Aristotle discussed how the paths by which praise or blame are apportioned can be quite intricate. But the difficulties he identified are now multiplied ten- and a hundredfold by a global culture where the fates of billions of people are tied to one another. Living in a society whose interactions are so complex, so distant and diffuse in time and space, ethical cause and effect becomes dauntingly difficult to identify.

Consider one interpretation of the opioid crisis. US men are twice as likely as US women to die from an overdose. The causes of this difference are unclear, but we do know that certain occupations that were predominantly filled by men and demanded physical strength have been in long-term decline. Politicians call for retraining miners and construction workers with the skills of computer programmers, but they rarely acknowledge the fact that there is a percentage of men who rebel at such work. They reject desk jobs, sometimes from a lack of ability, but more often because of disinclination.

Some blue-collar workers are loath to learn new trades. "We've heard when working with some of the miners that they are reluctant because they're very accustomed to the mining industry," said Linda Thomson, the president of JARI, a nonprofit economic development organization that provides retraining. "They really do want to go back into the mines. So we've seen resistance to some retraining." There is a cohort of men who will not become nurses or clerks, for their sense of self is tied to traditionally masculine professions such as mining and construction. Deny these people an outlet consistent with their nature and many will become discouraged. And some will turn to pharmaceutical relief such as opioids. And die at a higher rate.

Granted, this is a just-so story. And it may seem

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unfair to blame science and technology for such problems. Why point to this node in the chain of causality, when there are so many other links that also bear responsibility? The point is less to place blame on the creators of these capacities than to point out their implication in the drama, and to challenge the still-dominant faith in the clean hands and neutral standing of scientists and engineers. Scientific discovery and technological innovation are not neutral acts.

People mean a variety of things by the phrase technological determinism. It is sometimes understood in analogy with Marxism, as technology determining the economic and social structure of a society. Or it denotes the belief that technological development has a momentum of its own and cannot be halted. But there is another element that needs more attention: the ways in which technological innovations now preempt social decision-making.

Take the case of pornography. It has always had a presence in American culture, just as in every culture. But until recently it existed on the margins. To gain access to it one had to travel to a limited number of places located in particular parts of town. Now made ubiquitous by the internet, its availability has reverse-engineered our cultural standards concerning its appropriateness and changed our sexual behavior as well. These changes have been driven by a simple fact: the internet has made pornography easily accessible in the privacy of one's home, and thus impossible to regulate. The point isn't whether these changes are good or bad, but how social mores are being determined by technological innovation rather than by society itself.

We have, then, de facto changes in cultural norms and in public policy. These changes have never been voted on. Or rather, they sometimes are voted on, but in an odd, after-the-fact manner. Technology creates a new set of opportunities, which entrepreneurs exploit. This opens up possibilities for new products or experiences, which some people like, others not—for instance, easily accessible pornography on the internet or cell phone usage while hiking in national parks. Then, through the combination of belief in the inevitability of technological change and preference on the part of some, these changes win the day. Another barrier falls, another norm goes by the boards. No wonder that those who Wuthnow called "the left behind" are enraged; they aren't in a fair fight. Decisions are made by the release of technology and the creativity of early adapters, which change the social landscape before opponents even have a chance to express their opinion.

These changes are usually explained as the result of another kind of inevitability—market forces. But these economic interventions have themselves been made possible by innovations in science and technology. Scientists and engineers have functioned as enablers. They have made the continual expansion of leisure, ease, and amusement possible, through the continual development of tools, algorithms, and apps, which then allows the continual manipulation of both the natural environment and ourselves. We hear that artificial intelligence will be just a tool, which can be used for good or evil. But the effects will be different than that. AI will penetrate our lives, insinuating itself before there has been any opportunity for a vote on its presence. The result will be a technological fait accompli. At the same time, these effects will remain occult in nature. Like the Wizard of Oz, scientists and engineers do their work behind a curtain, shielded from being held responsible for their creations. The credit and blame will land on the heads of others.

Many people approve of such changes, emphasizing the resulting increase in artistic or personal freedom. Others decry them, but blame Washington or immigrants or the shiftless poor, or perhaps even capitalism—in fact almost anyone other than scientists and engineers. I am neither decrying nor celebrating these changes. Rather, I am pointing out how science and technology have a hidden life that we should better attend to.

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