

greater freedom for the spirit. This is what renders the ethical attitude to the problem so complex. . . . Technical progress is the death of beauty which seemed eternal. . . . Machinery acquires a universal significance and puts its seal upon everything, making all into its own semblance. It is an expression of man's strength, but it weakens his physique, lowers the type and decreases his natural resourcefulness. Man no longer relies on his bodily strength but trusts in mechanical means, and his organism grows weaker. Life is no longer bound up with the earth, animals and plants, and becomes connected with machinery, with a new reality which seems to us not to have been created by God. And the human spirit must find the inner strength to endure this change and not to be enslaved by this new reality: man must use the power given him by science for construction not for destruction.

One of the consequences of scientific progress is that everything which had appeared as neutral acquires a spiritual and religious significance. . . . Scientific and technical progress may eventually lead to the

destruction of the greater portion of mankind and even a cosmic catastrophe. The moral and spiritual condition of man, who has acquired an unheard of power over nature, becomes of paramount importance. Nature was at first full of gods, then it was regarded as a dark power, and finally, in modern times, it has been completely neutralized. But the progress of practical science confronts man with a new nature which can no longer be considered neutral. Man's power over natural elements may serve either the work of God or of the devil, but it cannot be merely neutral. Hence it is essential to develop a moral attitude toward technical achievements.¹⁶

First and last, our confrontation with the paradox of progress in its new manifestations will be resolved only by following the counsel of Him who said: "But seek ye first the kingdom of God and His righteousness; and all these things shall be added unto you." (Matthew 6:33).

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TECHNOLOGY AND THE FOUNDATIONS OF CHRISTIAN CULTURE

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" . . . the Faith would never have produced Huddersfield or Pittsburg."¹

In discussing the cultural effects of technology two extremes, it seems to me, must be avoided. One is to blindly welcome every new invention, regardless of whether and how it benefits mankind, as an example of the fulfillment of God's command, "Conquer the earth"² or as a working out of human development and achievement. This naive attitude toward technology is the ally of the creation of many unnecessary or even entirely useless or harmful goods. The other extreme is typified by the Old Order Amish. They very correctly insist on the primacy of the spiritual and the cultural, and have made the judgment that technological progress must be completely halted if their culture with its spiritual values is to be preserved. At first glance it might seem as if they were right, since innovation would probably mean the end of the Amish way of life. But what is wrong with thus freezing technology in the 16th century is that genuinely human technological advances serve rather than undermine culture. I will argue below that our present attitudes toward technology are radically flawed, but both technology and technological development in themselves are good and are meant to serve humanity. There is no logical reason why the Amish have chosen the level of the 16th century at which to stop technology; they might as well have chosen the 4th, the 12th or the 20th. It was only by an historical

accident that their community came into being in the 16th century, and their leaders apparently have felt that it is better to freeze technology than to jeopardize the community's stability.³ This is, in the true sense of the word, a conservative judgment, and shows very clearly why some principle more than mere conservation must regulate and inspire human thought and action. Although the Amish can see all around them the corrosive effects of unrestrained technology, a consideration of life even in a primitive community will demonstrate that technology as such is truly beneficial to mankind. For every society uses some technology, and were we to employ none at all we would be reduced to going naked, living in caves, eating wild plants and raw meat, and drinking water from our cupped hands. No reasonable person will defend such an existence as proper for human beings, so therefore the question becomes how much technology and of what sort. Because not all examples of technology need be good, simply because technology in itself is good. For though all things natural to human beings are good when used for the purposes for which they were intended, they are often used for other purposes as well. Perhaps even more often than not. So though the thing or activity may be perfectly good and laudable in itself, most of its manifestations may be bad and harmful. If the argument

should lead us there, then, it will be quite reasonable to be a friend of technology and yet opposed to very many individual instances of it. This, however, I will take up later.

The thing I want to do next is to clarify a point I consider very important, especially since the very opposite is often asserted as an obvious truth. What is the point? Simply this: It is not true to say that all technology is neutral and that it is only in the use or misuse of an object that good or evil lies. Now, of course, there is some truth in this. A hammer can be used to build a house or kill one's grandmother. In neither case is the hammer to be praised or blamed, only the human actor. Secondly, it is true that, strictly speaking, no invention whatever is morally good or bad; only persons are moral agents. But admitting all this, I still assert: Technology is not necessarily neutral. And the reason for this is simple: Certain inventions, given our fallen natures, are just too much of a temptation for us — they invite, so to speak, their misuse, or rather their use in such a way that the effects on the life of man in society, for whose sake all technology exists, are harmful. And secondly, there are, or at least could be, some inventions that have no proper use; to use one at all is to commit a wrong. Let me take these two cases up separately.

The first is that of inventions whose use, especially on a large scale, results in social evils. Moreover, there need be nothing sinful about any individual use of such an invention, only that widespread use in some way injures society. But it is man's fallen state that, acting on the invention, brings about the injury. The invention in itself does not demand it. Why, then, am I attributing evil to the machine? Only because the invention is the occasion and necessary condition for some disruption of society, a disruption that is an evil, and thus, the invention may likewise be termed an evil. For given our human weaknesses, our propensity toward unnecessary luxuries, our tendency to take the path of least resistance, our habitual disinclination to follow the better part, our shortsightedness, our failure to see the consequences of our actions, in view of all this, the proposition that technology is always neutral is not true. We call something bad if it fails to fulfill or contribute toward its end very well. This is true of the technology I am speaking of, for because of our fallen state, this kind of technology does not contribute well to its end of serving mankind. For prudence surely commands us in all that we do to take account of reality, of what is, among which things man's wounded nature must surely take one of the first places. Thus we cannot consider those things which are occasions of cultural disturbance to be mere indifferent factors in the act.

Certainly, though, if the specific difficulty the invention was created to overcome is important enough, and its negative impact slight or otherwise unimportant, this would change our evaluation. It will be a question of

practical wisdom each time to judge whether a disruptive technology justifies itself sufficiently by its contribution to human welfare, or whether it serves a part at the expense of the whole. The major problem does not lie in the difficulty of making such judgments; rather in getting men to admit that inventions with negative impacts on human life need to justify themselves.

The second kind of invention I distinguished above is that which has no licit use at all. For example, a bomb whose only use was to destroy entire cities, a newly-refined means of performing abortions, a device for making poisoned toys. No one of these has any legitimate use, and to manufacture any one of them is to invite wrongdoing. It is still true, of course, that it is left to men to choose to use such things, but it is rather silly to suggest they would be produced just to be gazed at.

Of course, I am predicating good and evil of machines and gadgets in an analogical sense, but, I maintain, in a legitimate one. We call arrangements good or bad insofar as they make it easy or difficult for men to accomplish some end. Similarly I call technological mechanisms good or bad as they fulfill the purposes of technology well or ill. If an invention truly serves human culture, then it is good; if it does not, or if it serves it in only some narrow aspect, to the injury of the whole, then, probably, it is bad. For even though men are responsible for the acts that lead to such damage, if we are prudent, we will anticipate and make allowance for our wounded natures, not create temptations we foresee cannot be handled.

To sum up what I have said so far: Technology and its continuing development are good if they further the ends of civilization; if not, then they are bad. Furthermore, this depends not simply on human transgressions, for some inventions themselves are bad, either because they have no right use, or because they are certain to cause harm, with no corresponding benefit to offset the damage they do. Next I will discuss more closely ways in which disruptive technology can injure a culture, and what I consider the fundamental error of our present unsound attitude toward technology.

If what I said above about the necessity of considering man's propensity toward a wrong use of technology, a use that does not serve the ends of human life, is true, then technology disrupts culture whenever it makes it easy or encourages one to do acts which, instead of building up the culture and serving the ends of man, serve various short term interests, either sinful as such, or not sinful, but nevertheless contrary to the common good. Moreover, this can be true of devices which serve legitimate though narrow ends, but in so doing disturb the good of a culture.

Technology, like economic activity, exists for the sake of something else, namely for the right living of individuals, families and communities in society, which

in turn is to serve the eternal salvation of the individuals involved, part of "the universal teleological order" through which "we shall be led by progressive stages to the final end of all, God Himself, our highest and lasting good."⁴ The place of technology in this is to make easier the acquisition of certain material goods for the satisfaction of the needs of our cultural, social, intellectual and spiritual lives. Thus technology can fail in its mission not only by neglecting to provide these material goods, but also by doing so in a way which undermines that for which they exist, man's life in society and culture.

For example. It is a principle of Catholic social thought that widespread ownership of productive property is a good thing, promoting a healthy kind of self-reliance, allowing a family to provide for its needs, encouraging the responsible and equitable distribution of the goods of the earth, fostering stability in the community, and furthering the production of useful material goods, for "men always work harder and more readily when they work on that which is their own."⁵ The most obvious kind of productive property is farmland, as Pius XII said, "none is more conformable to nature than the land, the holding on which the family lives, and from the products of which it draws all or part of its subsistence."⁶ Family farms promote wise and careful use of the soil, for the farmer realizes he and his family must draw an entire lifelong subsistence from his farm, and cannot exploit the soil for quick profit and move on to another place. They likewise give farmers and their families a dignity they would never know as hired laborers, and give to society a stable base.⁷ What does technology have to do with this? Agricultural technology can be designed and invented which enhances small farming or which makes it very difficult for small farmers to survive. Certain very large machines for harvesting, etc., expensive to buy and to operate, can hardly be afforded by small farmers. Thus these farmers are put in a very difficult competitive position vis-à-vis large corporate "farmers," who can easily afford such machines. This is one of the things that has led to the decrease in the number of small farms and the consequent death of rural culture. For when families live on the land, they have all the needs — cultural, economic and social — of families. They require churches, schools, stores, post offices, etc., located at convenient distances. And these institutions naturally spring up since there are families with permanent needs who will patronize them. Thus the economic and social base of farming towns and villages is preserved. But now we have increasingly large farms, highly mechanized, with few people actually living on them. Moreover, these few, mostly hired laborers, cannot have the same interest in creating a true rural culture, because they do not expect to spend their entire lives there, and generally do not have families. Thus small towns and villages die as they lose their economic and cultural base, and people drift into the large cities,

creating gigantic concentrations of men, much bigger than cities were ever intended to become.⁸

If we care about preserving family farms and preventing the depopulation of the countryside, then the question of agricultural technology is important. We cannot dismiss it as merely a technical matter. Its direct influence on the kind and quality of life in our society is evident.

One way, then, in which technology can harm society is by fostering bigness for the sake of bigness. It usually does this without asking whether the new technology is needed or useful, whether there is anything wrong with the present arrangement, or whether the altered state of affairs will be, on balance, better or worse. Which brings me to what I think is the root problem with our present attitudes toward technology. It is this: we see a problem to be solved — how to make a certain process faster or cheaper or more efficient or whatever. We concentrate on solving that one problem, but we never stop to ask what consequences will follow from our solution, what its effect on the whole will be. We have isolated one single aspect of a complex and interrelated unity, and changed that one aspect without consideration of any other facet. We have, for example, figured out how to get from point A to point B very fast. But why we want to go from A to B, whether it will contribute to a better life in general for people to go from A to B faster, whether there was any sort of benefit to going slowly from A to B — none of these questions did we think worth considering. In the past men could travel as far as they wanted to, if they really wanted to. Now one just thoughtlessly jumps into a car and goes. We have made it easy for families and communities to be broken up, for rural areas to lose most of their economic base and institutions — churches, schools, stores, post offices — because it is now easy to drive to the next big town. How can we expect the government to keep open a post office in a small village when we demonstrate by our driving habits that we are quite willing to drive 10 or 20 miles for a pack of cigarettes? How can we consistently oppose the closing of a small country parish if we regularly drive to the large city for our recreation? When, in creating our modern means of transportation, did we ever face up to questions such as: Do we really want neighborhood stores to close? Do we really want local and family recreational activities to cease? Do we really want each family member to go his separate way of an evening? We assumed the new inventions were good because we assumed getting from A to B faster was a good. An unqualified good. Perhaps in a prelapsarian state it would be. But given the fact that man has fallen, and is likely to take the path of least resistance, how could we have expected these new means of transportation not affect society? And if society is of more value than technology, then how could we possibly have admitted these inventions without in the least examining their probable effects? We did it surely because of our purely quantified outlook on

things. We can quantify the distance and the length of time involved between A and B; we can quantify the cost per unit of production; we can quantify the speed at which we make each unit. So we speed up, we reduce the cost — all things we can quantify and thus approve of — with absolutely no thought of their consequences.

The origins of this point of view are to be found in such early modern philosophers as Francis Bacon and Rene Descartes, who were writing at the very time modern science and technology were developing. Indeed, modern science is almost purely a technological science, interested not in knowing but in doing, in obtaining results.⁹ As such, it tends to regard every technological advance as a good. It has a kind of habitual outlook or assumption which does not even think to ask the question: is it possible that some new technological discovery might be harmful to mankind. As soon as the question is asked, one is aware that the answer is not obviously a No. We must admit at least the possibility that some inventions do not really serve humanity, unless we hold for some kind of technological determinism, with some giant hand working everything out for our benefit.

A technology, therefore, that truly served mankind, would be one in which men clearly realized that each invention had to not only make some one particular process easier or cheaper, but at the same time not disrupt or corrupt any important human activity or cultural value. I doubt whether most inventors think much about whether they are benefiting their fellow men. I suspect their attention is focused on the technological puzzle before them, necessarily reduced to some narrow and quantified problem.

Additionally, as Fanfani notes,¹⁰ our economic system has acted as a powerful stimulus for technological innovation, with the great cost of the innovations themselves making for even more economic striving, as their owners sought to minimize risks and cover their new capital costs. Thus these two forces, both often socially disruptive, have fed each other throughout modern times, as they still do.

In spite of all this, it should be clear from what I have said that I think one can be a friend of technology and yet suspicious of, or opposed to, much of the technology around us. This might seem a paradoxical conclusion to some, but only because the connection between technology and culture, like that between economic activity and culture, is not often recognized. But it is nevertheless very important. Our patterns of entertainment and socializing, the extent to which families move about, the kinds of work we do and the arrangements of property ownership that we have — in all these matters the technology of the society is among the most impor-

tant determining factors. Thus if society realizes the extent to which stability contributes to such important concerns as preservation of traditional customs, stability in families, contentedness with one's place in life, with the consequences of domestic and civic peace, respect between generations, and many other values, then it is likely to view too much and too sudden technological innovation as detrimental to the health of the community. Unless technological change is an end in itself, then it must be subordinated to civil and domestic happiness, gibes about living in a backward culture notwithstanding. Probably, though, there is room for unlimited technological improvement, provided that it is slow and always subordinated to the real needs and welfare of mankind.

What can a civilization do in order to control technology and make it a servant instead of a master? The most necessary thing is to change our attitude toward science and technology, and to remove the spur that our economy gives to wholesale innovation. As far as science is concerned, we must remember that science means knowledge, and that the noblest kind of knowledge is its own end. Bacon said that knowledge was power, and scientific knowledge has certainly proved itself powerful. But power is not its end. That is not what it is for. Without questioning the need for applied science, I nonetheless deny that the present nearly exclusive orientation of our scientific research toward ultimate technological application is right.¹¹ There is something more noble than better gadgets. At the same time, since we really do need technology, we must make sure that it is always an aid for human life. At present it sometimes is this, but it is just as likely to undermine human society, and by our present criteria we cannot distinguish a good invention that serves man from a bad one that harms him, even if it may make easier some small facet of life. A few concrete things can be done, however, such as a repeal of the patent laws in order to remove an artificial stimulus to innovation. True humane technological progress must continue, but our present patent laws encourage indiscriminate innovation and discourage stability. In the long run, though, society will have to rely mainly on the diffusion of a true Catholic attitude among its members,¹² and, in exceptional cases, on governmental action to ban particularly harmful inventions.

If the world's activity exists for the sake of human social, intellectual, cultural and spiritual life, then technology too must be curbed, and oriented once again toward its proper end, the serving of man's material needs, without disruption of his purposes and higher life.¹³

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