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EDITORIAL CORRESPONDENCE: 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Phone: 202-387-7171. Cable: Advancesci, Washington. Copies of "Instructions for Contributors" can be obtained from the editorial office. See also page 1709, *Science*, 29 December 1967. ADVERTISING CORRESPONDENCE: Rm. 1740, 11 W. 42 St., New York, N.Y. 10036. Phone: 212-PE-6-1858.

Overconfidence in American Technology

Great achievements often carry with them the seeds of future failures. Repeated success breeds overconfidence and unwillingness to persist in the hard measures that led to excellence. Prolonged enjoyment of excellence brings indifference and even contempt for it. Examples of these tendencies of human nature can be seen in current attitudes toward science and technology.

When people witness accomplishments such as those of Apollo 8 and Apollo 9, they are impressed with the power of American technology. They are inclined to say, "If we can do that, we can do anything." They are also inclined to believe that we can do everything—that, given the goal and the money, technology can be bent to the accomplishment of any and all tasks. This is not true. Technology cannot rescue society from unlimited folly—a long-continued population explosion, for example.

Overconfidence in our technology leads to other faulty judgments. As Lee Dubridge has recently pointed out, we have become so accustomed to the almost magical capabilities of technology that we expect instantaneous solutions to all problems, no matter how complicated. This demand is unreasonable, even when the problems are purely technical. When complex social, political, and ethical considerations are additional important factors, rosy expectations are just plain foolish.

Confident in the power of American science and technology, the public is indifferent to them and turns its attention elsewhere. In response to the clamors of the moment, many of the brightest young students drift away from the physical sciences, seeking a future role in solving social problems. In some instances their youthful enthusiasm may produce worthwhile change, but many will discover that the problems of society are not easily solved and that the hard-won progress of today often disintegrates tomorrow.

After a period of enjoyed prosperity, affluence seems to be a guaranteed feature of life. Why struggle for it? Critics see that affluence has a seamy side—pollution and the like. And so they criticize, and rightly so. However, being human, some do not stop with constructive criticism. They go far beyond that, asserting that technology is the source of most of our present social problems. Perhaps it is, but who wants the standard of living and the pestilence of the Middle Ages?

We must learn to live more wisely with technology, but we cannot abandon it. We cannot even assume that present technology will guarantee future prosperity. During the past few decades the cream has been skimmed off many natural resources. During the next decades raw materials will become more costly, and scarcities of many items will be an unpleasant fact of life.

At the beginning of this century this country was the world's leading miner of gold; today we produce a small fraction of the total. At that time we had vast supplies of copper ore, with a copper content of about 2 percent; the average copper content of the ore that is being mined today is about a third that much. Once we were a great exporter of iron, lead, silver, and petroleum. Today we are a net importer of these items.

To maintain solvency, we must find new sources of raw materials or develop substitutes, or improve our competitive position in world trade so that imports of raw materials can be paid for. All these possibilities involve—among other things—the requirement that our science and technology be excellent. Prerequisite to the maintenance of such competence are more realistic attitudes toward science and technology on the part of all of us, including the public and their political representatives.

—PHILIP H. ABELSON