Future Fantastic

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In the past, three fundamental advances in human communication evolved that altered every facet of our world enormously and permanently. The first advance was speech, the second writing, and the third printing.

Now we face a fourth advance in communication every bit as important as the first three—the computer. This fourth revolution will enable most human beings to be more creative than they’ve ever been before. And provided we do not destroy the world by nuclear warfare, overpopulation or pollution, we will have a world of the technochild—a world as different from our present one as today’s is from the world of the caveman. How will the lives of the next generation be different from their parents and grandparents?

One immediate response is to view the computer merely as another form of amusement, rather like a super-TV. It can be used for complex games, for making contact with friends, or for various trivial pursuits. Still, such things can change the world. For one thing, communication by computer networks can wipe out the feeling of distance. It can make the globe seem like a neighborhood, and this can have important consequences—the development of the concept of humanity as a single society, not as a collection of endlessly and inevitably warring social segments. The world might develop a global lingua franca, a language (no doubt something quite close to today’s English) that everyone can understand, even though people would retain their individual languages for local use.

Then, too, since communication will be so easy and since mechanical and electronic devices can be controlled remotely (telemetering, for example, makes it possible even now for engineers to send instructions to—and obtain obedience from—devices sailing past planets billions of miles away), computers will reduce the necessity of using physical transportation to gain or gather information.

There will, of course, be no bar to travel. You can still be a tourist or visit friends or family in person rather than by closed-circuit television. But you will not have to battle hordes of people merely to carry or receive information that can be transferred by computer.

This means that the technochildren of tomorrow will be accustomed to living in a decentralized world, to reaching out in a variety of ways from their homes—or wherever they are—to do what needs doing. At one and the same time, they will feel both entirely isolated and in total contact.

The children of the next generation—and the society they will create—will see the greatest impact from computers in the area of education. Currently our society is intent on educating as many children as possible. The limit in the number of teachers means that students learn in mass. Every student in a school district or state or nation is taught the same thing at the same time in more or less the same way. But because each child has individual interests and methods of learning, the experience of mass education turns out to be unpleasant. The result is that most adults resist the learning process in postschool life; they’ve had enough of it.

Learning could be pleasant, even all-absorbingly fascinating, if children studied something that specifically interested them individually, on their own time and in their own way. Such study is currently possible through public libraries. But the library is a clumsy tool. One must go there, borrowing is limited to a few volumes, and books must be returned after a short time.

Clearly the solution is to move libraries into the home. Just as record players brought home the concert hall and television brought home the movie theater, the computer can bring home the public library. Tomorrow’s technochildren will have a ready means of sating their curiosity. They will know at an early age how to command their computers to give listings of materials. As their interests are aroused (and guided, it is to be hoped, by their teachers at school), they will learn more in less time and find new byways to follow.

Education will have a strong component of self-motivation added to it. The ability to follow a personal path will encourage the technochild to associate learning with pleasure and grow into a lively technoadult—eager, curious, and ready to expand the mental environment for as long as his or her brain remains physically undulled by the ravages of old age.

This new approach to education can also influence another area of life: work. Until now, most human beings have worked at jobs that seriously underutilized the brain. In the ages when work consisted largely of brutish physical labor, few ever had the chance to lift their eyes to the stars or ponder abstractions. Even when the Industrial Revolution brought machinery that could lift the load of physical labor from the backs of humanity, meaningless “skilled” work took its place. Today employees on the assembly line and in offices still perform jobs that require little thought.

For the first time in history, skilled machines, or robots, will be able to do those mindless jobs. Any job that is so simple and repetitive that a robot can do it as well as, if not better than, a person is beneath the dignity of the human brain. As technochildren turn into adults and move into the work world, they will have time to exercise more creativity, to work in the fields of drama, science, literature, government, and entertainment. And they will be ready for this kind of work as a result of the computerized revolution in education.

Some might believe that it’s simply impossible to expect people to be creative in large numbers. But that thinking comes from a world in which only a few escape the mental destruction of jobs that don’t use the brain. We’ve been through this before: It was always assumed that literacy, for example, was the province of the few who had minds peculiarly adapted to the complicated task of reading and writing. Of course, with the advent of printing and mass education, it turned out that most human beings could be literate.

What does all this mean? That we will be dealing with a world of leisure. Once computers and robots are doing the dull, mechanical work, the world will start running itself to a far greater extent than ever before. Will there be more “Renaissance people” as a result? Yes. Currently leisure is a small segment of life that is used narrowly because of lack of time, or is wasted on doing nothing in a desperate attempt to get far away from the hated workaday world. With leisure filling most of one’s time, there will be no sensation of racing the clock, no compulsion to enter into a wild spree against the slavery of hateful work. People will sample a variety of interests without haste, become skillful or knowledgeable in a number of areas, and cultivate different talents at various times.

This is not just guesswork. There have been eras in history when people had slaves—the brutalized, human version of the computer—to do the work for them. Others have had patrons to support them. When even a few people have had ample leisure time to pursue their interests, the result has been an explosion of variegated culture. The Golden Age of Athens in the late fifth century B.C. and the Italian Renaissance in the 14th to 16th centuries are the most famous examples.

Not only will people have the freedom to pursue hobbies and interests and dreams, but a great number of them will also want to share their talents. So many of us have a bit of the ham in us. We sing in the shower, take part in amateur theatrical productions, or love to swing along in parades. It is my guess that the 21st century may see a society in which one-third of the population will be engaged in entertaining the other two-thirds.

And there are bound to be new forms of entertainment that one can now foresee only dimly. Three-dimensional TV is easy to forecast. And space may become a new arena for activity. In near-zero gravity, for example, the manipulation of balls may produce far more complicated forms of tennis or soccer. Ballet and even social dancing may become incredibly startling and require a new kind of coordination that’s delightful to watch, as it will be as easy to move up and down as it is to move forward and backward or left and right.

What about those people who choose not to share their bents and interests and instead retire into worlds of their own? Someone who is interested, for example, in learning about the history of costumes and who is capable of exploring the libraries of the world from an isolated comer might simply stay there. Might we, then, find ourselves in a society in which an unprecedented number of people are intellectual hermits? Might we breed a race of introverts?

I think the chances are slim. People who grow ferociously interested in one aspect of knowledge or expertise are quite likely to be filled with missionary zeal. They will want to share their knowledge with others. Even today, someone who has an obscure field of interest is far more likely to want to explain it to everyone he or she meets than to sit silently in a comer. If there’s any danger, it’s that an arcane interest will nurture a loquacious bore rather than a hermit.

We must not forget the tendency of those who share interests to wish to get together, to form a temporary subuniverse that is a haven of concentrated special fascination. In the 19708, for example, someone had the idea of organizing a convention for Star Trek fans, expecting a few hundred at most to attend. Instead, fans poured in by the thousands (and television was supposed to be an isolating medium!). On-line gatherings, in which the computer is the medium and people are actively involved, will experience similarly high levels of participation.

And in between the formal get-togethers, there will be a kaleidoscope of people linked into global communities by computerized communication. Perpetual conventions will take place, in which individuals continually drop in and out, bringing in findings or ideas and leaving stimulated. There will be a constant melange of teaching and learning.

What I foresee is a society in intense creative ferment, people reaching out to others, new thoughts arising and spreading at a speed never before imagined, change and variety filling the planet (to say nothing of the smaller, artificial worlds that will be constructed in space). It will be a new world that will look back at earlier centuries as having been only half alive.