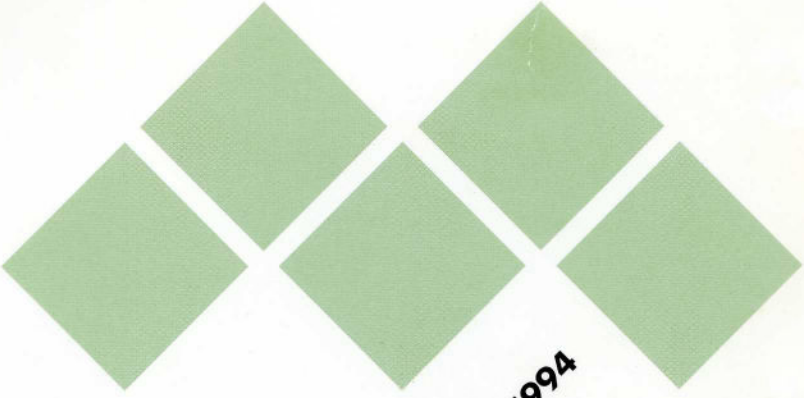
The John & Mary R. Markle Foundation *Annual Report 1993*



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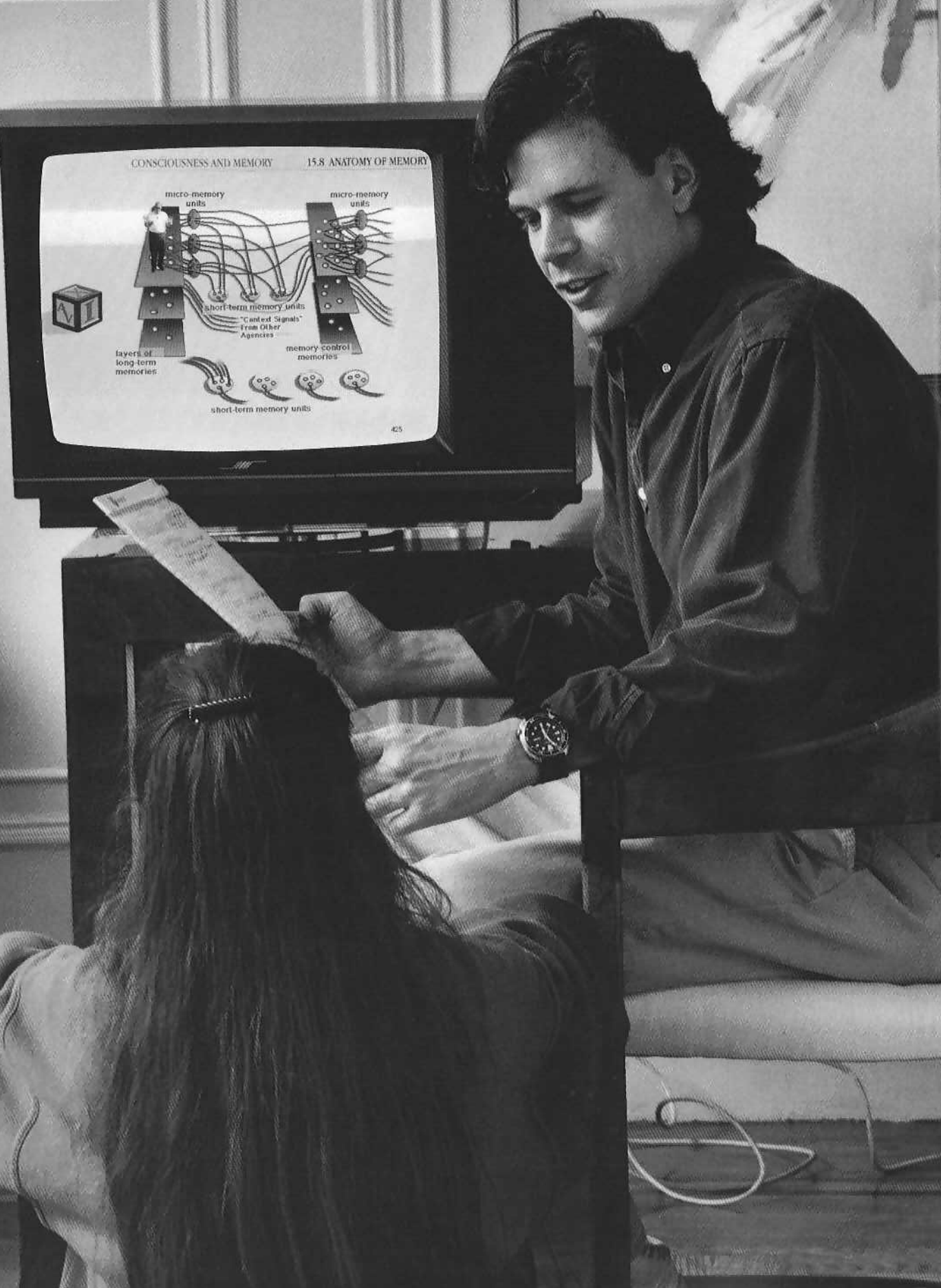
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The Twilight of Television

Lloyd N. Morrisett

My first essay for the Markle Foundation annual report, written in 1969, was "The Age of Television and The Television Age." It dealt with the potential benefits of television for children and how they might be realized. A few introductory sentences described "The Age of Television":

Nineteen hundred and fifty was a notable year: India was proclaimed an independent republic; President Truman instructed the Atomic Energy Commission to produce the hydrogen bomb, and also, in that year, signed a bill creating the National Science Foundation; George Bernard Shaw died at the age of 94; and after years of debate, CBS was given the right to start color television broadcasts. Though these were the headlines, the mid-mark of the twentieth century may come to be remembered best as the dawn of the Age of Television.

Like many other new times, the Age of Television dawned suddenly, and reached a zenith so rapidly that it is hard to remember what life before was like. In 1947 the medium was a rarity in the United States, and only about 14,000 families had sets. By 1950 five million American families owned sets. From that point on, television quickly became omnipresent in American society. Today over 95 percent of American households in all sectors of the country, and of all income levels, own at least one television set. Now more families own two television sets than owned one in 1950.

This is the Age of Television, not only in the sense of wide ownership of television sets, but much more importantly in the sense that an entire generation of young Americans is growing up in a time when television is available to them and widely used. Nineteen hundred and fifty was a watershed year. Americans who were born, went to school, and became adults before 1950 did so without television being part of their lives. After 1950 we came to take television for granted, and began organizing our lives in both obvious and subtle ways around the reality of the one, or perhaps two or three, television sets in our homes.

The First Definition of Television

The television that we organized our lives around and came to take for granted was dominated by the three networks, ABC, CBS, and NBC. Despite the presence of PBS and independent stations, "television" was the programming produced by and for the three major networks. It was the nightly news, the situation comedies, the dramatic series, the daytime soaps, and the specials. With small variations to accommodate different time zones, most Americans could see the same program at the

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same time. Most Americans began to say that they depended on television for their news and information more than any other source. Television personalities became familiar visitors to our living rooms and achieved not only fame but, in many cases, stature and credibility. For example, Walter Cronkite, the acknowledged dean of newscasters, embodied integrity and authority in the presentation of the news.

Television was also, without doubt, the greatest advertising medium the world has ever known. As a result of almost every American family purchasing a television set and the dominance of the three networks, popular programs drew huge audiences. Although the costs of programs steadily grew and seemed astronomical, television reached so many people that the cost of advertising per person reached was low—lower in fact than most other advertising media. The circle seemed complete: three dominant networks, huge audiences, effective advertising, more money for programs, and thus the ever greater supremacy of television.

There were whispers that television literacy would become equal to or, perhaps, more important than traditional literacy.

The ascendancy of television in the 1960's and 1970's gave rise to new visions of life in the future. As we had become a television society, it was only natural that more and more of our news, education, culture, and literature would be created on television. There were whispers that television literacy would become equal to or, perhaps, more important than traditional literacy. Evolving from a culture of symbols, we might become a culture of images, in which knowledge depends on the decoding and manipulation of visual images rather than on words and numbers. An America enthralled by television and with little patience for history rarely acknowledged that despite its cultural supremacy, television was still a novelty with all the uncertainty surrounding any novelty.

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The Second Definition of Television

As is so often the case, the seeds of change had already been planted. Of course, we still have television, but it is not the television of the 1960's and 1970's. Two new technologies, cable television and the VCR, have dramatically changed the television landscape. After a slow beginning, cable TV is now available to about 80 percent of American homes, and two-thirds of American families subscribe. Originally simply a means to improve

broadcast reception in certain areas where reception was poor, cable now routinely delivers 30 to 50 additional channels, and that capacity is being dramatically increased to 150 to 500 channels. The use of fiber optic transmission lines combined with compression technology will allow most cable systems to achieve this much higher capacity within a very few years. The existence of greater choice of channels inevitably meant reduced dominance for the three major networks. Previously accounting for 90 percent or more of the audience, the networks now account for 60 percent. Increasing revenue to such cable channels as CNN, ESPN, Discovery, and Bravo will allow them to compete even more effectively. The erosion of network share will continue.

Along with the growth of cable, VCR's have become staples of the American household. Approximately 80 percent of households own at least one VCR. First thought of as a means of recording television programs while away from home, and often used for that purpose as well as recording for viewing at more convenient times, the VCR has led to a major industry in the rental and sale of entertainment tapes for home viewing. No one really knows how many hours people spend watching rented or purchased motion pictures, but the revenue to the home video industry was more than $12 billion in 1992. To put the home video industry revenue in context, $12 billion is approximately the same amount as earned by filmed entertainment on television, and twice the revenue of box office motion pictures.

Another important use of the television set, but one that is often overlooked, is playing games. Game devices as add-ons to the television set were introduced in the 1970's, and the Atari company was spectacularly successful for a short time. After an initial burst of popularity home video games seemed to be a passing fad, but two Japanese companies, Nintendo and Sega, have had enormous success with their game devices offering evermore sophisticated visual and auditory effects. The hardware game players produced by Nintendo, Sega, and now 3DO are actually specialized computers. It is estimated that about 40 percent of American households own a home video game device. Sales of game system software are growing rapidly and surprisingly are approaching revenues from box office motion pictures.

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Because of the popularity of interactive video games with the young, and not so young, more people than ever before are coming to regard the television set as a multipurpose display device and not necessarily as an outlet for broadcast programming. Because video game devices are

predominantly in the homes of families with children, an entire generation is growing up with a very different experience of television than those of us who were introduced to it in the 1950's and 1960's. Clearly, our idea of what television is has already changed. Television is no longer simply the programs produced by the networks; it has become whatever uses we make of the television set.

The Evolution of the Television Set

The evolution of the television set from a simple receiver for broadcast television to a multipurpose display device is being pushed by several trends and developments. Cable television and the VCR were the first of these developments. The advent of cable required a slight modification to the television set to accommodate a cable connection. Then, as the number of cable channels increased, the tuner needed to be improved, but the source of the signal was still a broadcast studio or the studio of a cable operator. The VCR put control of the source of the signal within the home. The remote control was a technological innovation that accompanied popular acceptance of cable TV and the VCR. Perhaps first thought of as a mere physical convenience to eliminate the necessity of getting up to change channels, the remote control actually gave television viewers increased freedom—freedom to channel hop and to mute commercials.

The next major development that is being planned is the introduction of high-definition television. The initial vision is that high-definition television will be to television as high-fidelity sound was to the broadcasting industry and the music lover. This analogy is only partially true at best. It is not at all clear that the television viewer values greater clarity and better color in the way that the music lover values higher-fidelity sound.

In addition, the tradition of record purchases was already strongly established before the introduction of LP's, stereo sound, and CD's. In the television industry the tradition of videocassette rental is much better established than that of purchase. Regardless of the economic implications of high-definition television, it will definitely have the effect of improving the resolution of whatever appears on the screen.

At the simplest level, the user will be able to edit easily what is being seen and, for example, eliminate advertisements—making real one of the darkest fears of broadcasters.

The spreading digital revolution also will almost certainly encompass the television set in the next decade. While digital television sets are already available, they are expensive and there is no programming for them. We also have an enormous national investment in current

television sets. For this reason, the transition to digital television will be slow, but it is likely because digital television will reap many of the same advantages found in digital computing and recording. Cable and the VCR began to give the user of the television set greater control; digital television has the potential to increase that control greatly. One of the major advantages of digitally encoded information is that it can be manipulated and transformed far more easily than information that is analogically encoded. With digital television the viewer will not necessarily be a "viewer" any longer. The user of the set will be able to interact with the images that appear on the screen in ways that we can hardly imagine. At the simplest level, the user will be able to edit easily what is being seen and, for example, eliminate advertisements—making real one of the darkest fears of broadcasters.

Computing is inherently interactive. Apart from a few commercial experiments, television remains a one-way broadcast medium.

Is It a TV Set or a Computer?

While developments within the television industry have made the TV set begin to resemble a computer, developments within computing have made the computer screen resemble a television set. For many years modern computing has been based on a digital standard. In this respect computing long ago arrived at a place that television is only beginning to explore. Similarly, computing is inherently interactive. Apart from a few commercial experiments, television remains a one-way broadcast medium. On the other hand, the color set is standard in television, but the color monitor is probably still the exception rather than the rule in the installed base of computers. Motion and sound, the very essence of television, are increasingly possible additions to computers, but they are rare. Because computer graphics demand high resolution, computer screens have steadily incorporated higher degrees of clarity; high-definition television will bring that clarity to the television set.

The vision of "multimedia" is speeding all of these developments.

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"Multimedia" is the integrated use and display of visual images, motion, sound, data, graphics, and text, with the user being able to interact creatively with the display. So far multimedia is in a very early stage because computers have only recently had sufficient memory and speed to make experimentation in multi-

media possible. These early experiments, like early experimentation with any new technology, have sought to demonstrate capability.

The vision of an author combining any visual and auditory forms to achieve artistic, educational and entertainment objectives, and a user directing the resulting display, is so powerful that I believe we are entering the multimedia era.

Demonstration records of early stereo amazed people with the ability to shift the sound image from side to side and to the center of the audio space. Violins could be heard clearly on the left and horns on the right. As it has matured, stereo has come to be used in the service of the music rather than to demonstrate the technology. We can expect the same sort of transition in multimedia. It will proceed from a "gee whiz" stage to a functional means of achieving the goals of designers, programmers, producers, and authors. It is even too early to tell what we will come to call the creator of multimedia. Although we are at the beginning, we do know that technology has made multimedia possible. The vision of an author combining any visual and auditory forms to achieve artistic, educational and entertainment objectives, and a user directing the resulting display, is so powerful that I believe we are entering the multimedia era.

Confirmation that we are entering the multimedia era comes from two sources. Almost daily we hear corporate announcements and alliances that begin to position computer manufacturers, entertainment companies, telephone companies, consumer electronic companies, and many others to take advantage of multimedia opportunities. IBM joins with Apple to form Kaleida. Apple joins with America Online to begin to network its new personal digital assistant, the Newton. The 3DO Company is a joint venture of Matsushita, AT&T, Time Warner, and Electronic Arts. Few, if any, companies believe they have the capability necessary to exploit this new world, and many new partnerships are being formed.

This very dramatic coming together of the computing and television industries confuses us about what to call the display device that will be in our homes. Is it a computer or a television set?

The second confirmation of the new era comes from the agreement of the computing and television industries on a joint standard for future television sets. The joint standard will accommodate both high-definition television and the use of the television set as a computer monitor. This very dramatic coming together of the computing and television industries confuses us about what to call the display device that will be in our homes. Is it a computer or a television set? The answer is that it will be neither. It will be a multimedia monitor.

Criticisms of Television and Computing

In the great years of network television there were critics, but their voices were drowned out by rating numbers and financial success. One of the criticisms leveled against television was that it offered little choice and enslaved viewers to a fixed schedule not of their own choosing. The success of cable television and the rental tape industry has proven that there was merit in those criticisms. The technologies of cable and VCR did not address other criticisms. Because television, and radio before it, were broadcast technologies, they were inherently centralized. Messages originated in the networks or stations and were sent to viewers. There was no easy way for the viewer to interact with the message source or other viewers.

The model set by broadcasting seemed to confirm descriptions of the mass society that divided it into producers (in this case the broadcasters) and consumers (the viewers). In addition, although television could be an effective teacher, it did not lend itself easily to discussion, deliberation, or conversation. As a visual medium television had a notoriously difficult time presenting complex ideas. The triumph of the television image devalued written and spoken language. In television broadcasts the spoken word became secondary to the visual image; television advertising is the extreme example. The written word had almost no place in the world of television, mostly because television was a world of images, but also because the television screen was a poor medium for print. Designed to present moving images, the television screen had relatively low resolution, and as a result, it offered little competition to print on the pages of books, magazines, and newspapers.

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The criticisms of computing were different. Computing was forbidding and complex as it depended on the mastery of computer codes, computer languages, and a whole set of conventions that were foreign to most people. Computing was also elitist as the cost of really useful computers together with a special monitor and possibly a printer was usually several thousand dollars. Then, too, computers lacked color, sound, and the ability to present full screen video. The convergence of television and computing combined with the rapidly lowering costs and increased ease of use of computers will address many of these criticisms.

Unexpected Consequences

The new world of multimedia will usher in many social, technological, and cultural changes. Some of these changes are likely to be surprising, and perhaps the first surprise will be the reemergence of print. The electronic domain where print—letters, numbers, and symbols—has held sway is the world of computers. While within the television industry, cable and the VCR have been powerful forces of change, the impact of the computer industry is only now beginning to be felt. Traditionally, computers have been part of the business world, and television was for home entertainment. In part this separation was because computers were far more expensive than television sets, and in part because the main uses of computers in the business environment were for word processing and data analysis using spreadsheets.

The convergence of computing and television, concretized in a single standard for television sets that will accommodate both the needs of the computing industry and high-definition television, means that the electronic multipurpose display device of the future will be far more congenial to print than the television set of the past. At this most basic level it will be possible to produce print on the electronic screen that is crisp, clear, and easy to read. Simply because the display of attractive electronically produced print will be possible does not necessarily mean that it will be an important feature of the electronic environment. The emerging goals of multimedia creators, the informational advantages of print, economic necessity, and the universal desire of people to communicate with each other will insure the place of print in our electronic future.

The palette of the creator of multimedia is made up of images, motion video, sound, data, print, and the choices that users can make as they interact with the multimedia creation.

The palette of the creator of multimedia is made up of images, motion video, sound, data, print, and the choices that users can make as they interact with the multimedia creation. The goals of the multimedia creator may be education, entertainment, artistic expression, or simply information, but multimedia elements will be chosen to achieve those goals. In many cases print will be an important ingredient. A play by Shakespeare was intended for the stage, but it was also a written document. A full expression of Shakespearean intent is likely to require both the staged play and the written document. Devotees of soap operas often want to catch up on episodes that they have missed. Commercial services are available to provide synopses. How much more convenient it would be for the soap opera fan to simply call up on the screen a brief summary when it is needed. Annotations and footnotes may not be needed when listening to a symphony or

watching a ballgame, but they can greatly aid the serious music student or the baseball fan who follows team statistics. Before multimedia the Shakespearean play was on television and the book was in the library; the soap opera on television and the synopsis of past episodes available over the telephone; the symphony was on the stereo, the score printed, and notations were in a book. In the world of multimedia all of these and more will be available on the electronic screen to be called up when the producer or user deems it necessary.

Quite simply, written language—print—is often the best way to convey information. A written document can be skimmed or studied closely, and reading something almost always takes less time than hearing it or seeing the idea enacted in images. Complex or abstract ideas are notoriously difficult to compress within the framework and time of a television program. A thought that might be well expressed on a single printed page and easily read in five minutes might well prove to be difficult or impossible to convey in an hour of conventional television. In the world of multimedia the ability to intermingle images and print opens up many new production possibilities, using each medium when it is most advantageous. Publishing books in electronic form meant to be "read" on a computer screen is a very recent business. Why, you may ask, would anyone want to read a book on a computer screen when it is available in normal printed form? The Voyager Company's Expanded Book project shows some of the advantages of books when they are published electronically. It is easy to access the occurrence of any word instantly. Have you forgotten an early but crucial conversation in a mystery? Rather than leafing through the pages, simply type in a word or the name of a character and that passage will appear on the screen.

This brings us to what may be the eventual driving force that makes print blossom on the electronic screen: economics.

Do you like to make your own notes or underline significant passages? When you do this with a library book you deface it seriously, and you render it less attractive to the next reader. On a computer screen you can make whatever notes you wish and highlight to your heart's content, and then save those annotations for yourself or wipe the slate clean for the next reader. Would you like to follow an idea, theme, or character through the book? The computer makes it easy. Finally, the book that weighs a pound and takes up two or three inches of shelf space is fully available on a small floppy disc. This brings us to what may be the eventual driving force that makes print blossom on the electronic screen: economics.

It is already true that the cost of a book in electronic form is about the same as one printed on paper. Yes,

you must have a computer to read that electronic book, but it is likely that in a very short time the convergence of television and computing in the world of multimedia will mean that practically everyone will have a multimedia display device. Not only

This phenomenon is not new. Almost from the beginning of computer networks users found sending messages over the network easy, convenient, and fulfilling in a way that may not be matched by the telephone.

that, but the smallest multimedia devices are already about the size of a paperback book. The costs of computing and electronic delivery are going down. Soon, if the time is not already here, it will be cheaper to deliver print electronically than on paper. When the means of distribution and display are widespread, economic forces will inevitably lead to a blossoming of print on the electronic screen.

One final, but very important, force that will lead to the reemergence of print in the multimedia world is the universal need and desire of people to communicate with each other. The single greatest use of computer networks, such as the huge Internet, is electronic messaging (E-mail) and its close relation, the computer bulletin board. This same penchant for using E-mail is also found on the commercial networks, such as Prodigy, America Online, and CompuServe. The Imagination Network(formerly the Sierra Network) is devoted to playing interactive games, but most of the traffic on the network is people sending messages to each other both about the games and an endless variety of personally interesting topics. This phenomenon is not new. Almost from the beginning of computer networks users found sending messages over the network easy, convenient, and fulfilling in a way that may not be matched by the telephone. The advantages of E-mail are several. The originator of a message can take as much time, or as little, in composition as seems desirable, but once the message is sent, delivery is almost instantaneous. An E-mail message can be sent to one person or an entire mailing list with the same ease. Receiving E-mail, you can study those messages you wish and reply at your convenience. The ease and convenience of E-mail introduces questions about being overloaded with messages, but I expect that computer applications are just around the corner that will sort your mail according to your priorities and automatically discard third-class mail if you wish.

Written language is an essential element of culture, an economical and rich way to convey meaning, relatively cheap to produce, and convenient to use. These age-old merits will have newfound value in the world of multimedia.

There are also issues of privacy that will need to be addressed. Despite these issues the speed, convenience,

and low cost of E-mail are certain to make it an important part of the electronic future.

The theme of this essay is that one important consequence of the developing world of multimedia will be the reemergence of written language, print, as an important part of the electronic environment. Television and computing are coming together in a digital world of high bandwidth and massive computing power. Multipurpose electronic display devices will mingle motion video, sound, data, graphics, and print. The electronic screens of the future will have much greater resolution than television screens and be able to display print that is crisp and clear. Written language is an essential element of culture, an economical and rich way to convey meaning, relatively cheap to produce, and convenient to use. These age-old merits will have newfound value in the world of multimedia.

Economic forces are inevitably leading to a blossoming of print on the electronic screen. The Voyager Company is one of several producing electronic books.