



6 / Comparing Print, Radio, and Television

"The medium is the message." McLuhan meant that each medium has effects on the way people's minds work, effects that are independent of the content being transmitted by the medium. We have seen in earlier chapters that watching television, for example, does indeed seem to give today's children certain mental skills that those of us raised before the widespread availability of television do not have. (Chapters 7 and 8 will show how the mental abilities developed by watching television may help children master the newer media of video games and other computer technology.)

Those who worry about the effects of television on children's minds compare television, implicitly or explicitly, with print. Kids can't read anymore, they say, and it's all the fault of television. Our educational system is built around print and reading. There is a common assumption that print is the intellectually superior medium—that television, by comparison, encourages children to be passive, mindless, and unimaginative.

Historically, the medium that followed print was not television but radio. Today in the United States, radio is quite specialized for music; very little children's programming exists on radio, and few children listen to it. But for the pre-TV generation, radio was an influential

medium. If we want to know what psychological changes television has caused, it is useful to compare it not only with print but also with its immediate historical predecessor, radio.

It may be that print, radio, and television foster different psychological and social processes in their audiences. To investigate this possibility, I shall consider what each medium added, psychologically, to the one that came before it. This investigation should yield some insight into the distinctive contribution each medium can make to human development.

PRINT AND INTELLECTUAL PROCESSES

Print was the first technology of mass communication. It was not, however, the first symbolic medium of human communication. Oral language and face-to-face communication long preceded it. So the first question to ask about print is what it adds to face-to-face communication in terms of impact on human development.

An obvious feature of print is that it permits the accumulation of knowledge by creating a way to store information. Hence, the coming of print gave any literate individual access to a vastly larger store of knowledge than was possible in a nonliterate culture. Another claim, more interesting from the point of view of the changes in consciousness brought about by different media, is that learning to read and write affects the processes of thinking, the ways people classify, reason, and remember.

In most cultures, the ability to read and write is inextricably tied up with schooling, so that it is impossible to separate the effects of literacy in itself from those of formal education. But in Liberia there is a cultural group, the Vai, who maintain a writing system outside the context of schooling. Two ingenious researchers, Sylvia

Scribner and Michael Cole, studied the Vai to examine the psychological effects of literacy apart from those of formal education.¹

Within the Vai culture are to be found three different literacies, each with its own particular set of learning conditions and patterns of use: Vai writing, acquired by adults through informal means; Arabic, learned by children in the Koranic school; and English writing, taught in European-style schools. Thus the Vai people provide an opportunity to assess the psychological consequences of different conditions of literacy learning and use. The Vai also provide a control group, the majority of the population, who have not had the opportunity to acquire any form of literacy.

Scribner and Cole's most important finding was a negative one: they discovered very little effect of print literacy in general. Instead, the different literacies, each with its own methods of learning and use, had different effects.

Verbal explanation and schooling. School-based English literacy, for example, led to the development of a general skill in verbal explanation. Since Arabic and Vai literacy did not have this effect, it must not be the ability to read and write, in itself, that fosters explanatory skills; the development of skill in verbal explanation must be produced by other aspects of schooling. Scribner and Cole ascribe special importance to teacher-pupil dialogue in the classroom: teachers ask questions that give students practice in formulating explanations, questions like "What made you give that answer?"

The finding that it is formal education, not literacy in itself, that fosters the most widely generalized intellectual skills has great educational significance. It indicates that print may not be a superior medium for education: that what goes on between teacher and student may be more central to the effects of schooling than is the me-

dium of instruction. In Chapter 5 we saw that discussion with an adult is an important key to what children learn from a television program. Thus, in the right context of dialogue and discussion, television can take the role traditionally reserved for print, while without this context print loses its power as an educational medium. I shall come back to this important theme in later chapters, particularly Chapter 9, where I suggest greater use of the electronic media in schools.

Letter writing and verbal explicitness. The Vai use both English and Vai, but not Arabic, to write letters. (Arabic is used primarily for rote learning of the Koran.) In an experiment, people were asked to dictate a letter giving directions on how to play a new board game or how to get to their farm. The notion was more information must be made verbally explicit in a letter than in face-to-face communication, where gesture and other nonverbal means can carry part of a message. For example, in explaining a board game, pieces can be identified by pointing in face-to-face communication, but they must be verbally described in a letter. This analysis was borne out by the results. Both those literate in Vai and those literate in English provided more explicit verbal information in their dictated letters than illiterates did, but there was no difference between the illiterates and those literate in Arabic. Once again, it was not the nature of the medium itself—print—that was responsible for this effect but its *use*: the fact that Vai people use written Vai and written English to communicate at a distance with people through letters.

Writing and the spoken language. It is an established generalization that written language tends to be more historically conservative than spoken language. Old forms that have disappeared from speaking will be maintained in writing. An interesting question follows: Is a literate person's speech influenced by exposure to written lan-

guage, with its more archaic forms? Steven Reder, a linguist working with Scribner and Cole, identified a particular sound ("T" in the middle of a word) that was disappearing from spoken Vai. He then compared the speech of literates and illiterates with respect to this sound, and found that literates did tend to use the sound more than illiterates. Although the frequency of a particular sound may not be a very earth-shattering effect of literacy, the principle is an important one: one medium of communication (in this case, writing) can alter a person's style of communication in another medium (in this case, speaking).

Reder's findings can be applied to the mass media. Radio and television, being modes of oral rather than written communication, are not likely to have the conservative influence on speech that writing has. Hence, spoken language may now, under their influence, be changing more rapidly than when print was the main medium of mass communication. This rapid change may be one factor behind the widespread impression that our language is deteriorating at an ever accelerating pace and that children speak less well than their elders. Language change is interpreted as deterioration from the standard created in an earlier era. The more rapid the change, the more serious the perceived deterioration. Viewed historically, however, today's error may be tomorrow's standard form.

LITERACY AND SOCIAL INTERACTION

Mallory Wober examined the social consequences of literacy in a study in Nigeria. Two very different types of housing were available to workers in a company. One type was housing in a typical urban African setting: the population was dense, much life went on in the street, it was noisy, and there was music blaring everywhere.

The other type was European-style housing in a suburban housing development provided by the company: houses were separated by yards in a quiet residential neighborhood; there was good plumbing for bathrooms and kitchens. Wober found that one reason given for choosing the second type of housing was to be alone in peace and quiet to read.² Thus, print literacy seemed to be one factor leading them to reject an environment characterized by a high degree of social contact.

If Wober's finding captures a general truth about literacy, then literacy is the original medium of social isolation. McLuhan realized this twenty years ago; as he put it, "We are no more prepared to encounter radio and TV in our literate milieu than the native of Ghana is able to cope with the literacy that takes him out of his collective tribal world and beaches him in individual isolation."³ Literacy was the first medium of communication that required solitude for its effective practice.

This is an important point to remember when we hear complaints about the isolating effects of television, video games, or computers. Without reducing the problem, it does place it in historical perspective. (Indeed, the accumulated research concerning the effect of television on children's patterns of social interaction indicates that television has absolutely no effect on the amount of time children spend in various sorts of social engagement.)⁴

COMPARING PRINT, RADIO, AND TELEVISION

The evidence here is of a very different sort from Cole and Scribner's work on literacy. Kathy Pezdek and Ariella Lehrer conducted an investigation of whether the same cognitive processes are required to extract information and meaning from radio and television as to understand print. A group of second graders and sixth

graders read one story aloud from a picture book and heard another story in a radio presentation; another group read aloud one story and watched the other in a television presentation. Following each story, the children were given various tests of comprehension and memory.

There was a positive correlation between reading scores and listening scores on both comprehension and memory tests. That is, a child who read aloud with good comprehension and memory for the material was also likely to comprehend and remember material heard on the radio. These results indicate that there is an overlap between the information-processing skills called up by print and radio. The probable reason for this overlap is that both are exclusively verbal media.

In contrast to the findings for print and radio, there was not a significant positive correlation between reading scores and "watching" scores on any of the tests. That is, a child who watched a story with good comprehension or memory was not necessarily a child who showed equal skill in reading the story; skills in extracting and remembering information from the two media showed themselves to be relatively independent of each other.

Very recently, however, Miri Ben-Moshe and Gavriel Salomon have found that training sixth graders to watch television in a more active, careful way by asking penetrating questions about the shows improves their reading comprehension scores.⁶ This indicates that, under particular conditions, there can be an overlap between reading skills and viewing skills. It seems that whether or not the two media stimulate the same processes depends on *how the medium is being used*. There is evidence that television does interfere with reading under some circumstances,⁷ but this may happen not because of an intrinsic conflict between these two media but because

the usual way of watching television is without care or effort.⁸ I shall return to this point later.

Comparing the levels of comprehension and memory in print and in television, Pezdek and Lehrer found only one statistically reliable difference between print and television, and it favored television. Thus, in terms of learning, print does not seem to deserve its exalted reputation, television its negative one.

Pezdek and Lehrer also found that television led to better comprehension and memory than radio did. This result (which has also been found by Jessica Beagles-Roos and myself and by other researchers)⁹ is particularly interesting because a number of the tests were verbal. It indicates that the addition of dynamic visual images makes verbally presented information easier to remember. Thus, television is a more effective medium than radio for transmitting information to children.

These experiments confirm the special power television has for learning. Children tend to learn what they see on television more thoroughly than what they read or hear on radio or tape. This power means that the responsibility of television producers is much greater, the need for quality more pressing than with the older media.

DIFFERENCES IN VERBAL STYLE

In terms of verbal style, radio resembles print, while television resembles face-to-face oral communication. This fits with the point that reading and listening involve some of the same information-processing skills, while television, under usual viewing circumstances, involves a different set of skills.

Vague reference. My colleagues and I did a study comparing radio and television.¹⁰ We had each child hear or see a program, then asked the child to retell the story

to an adult who, the child was told, was unfamiliar with it. An interesting stylistic difference in response to the two media emerged: the children made more vague references to characters in retelling the television stories than in retelling the radio stories.

An example of a vague reference is the use of a pronoun, such as "he" or "she" without an antecedent noun. Another example is the use of a general term like "the boy" or "the woman" without earlier identification. Pronouns or general terms of reference are normally used when the identity of a referent has already been established either verbally, for example with a proper name, or nonverbally, for example by pointing or looking at the referent in question. Under these circumstances, the referent becomes "old" information and the use of a pronoun or general term is not vague.

I believe that the vague character references that occur in the retelling of television stories are probably not vague to the teller. What I think is happening is that the teller has the visual image of the character in mind, from having seen it on television, and therefore refers to it as old information, by means of a pronoun or general term. The problem, of course, is that the listener cannot see the image the speaker has in mind. Therefore, from the listener's point of view, the use of a pronoun or general term under these circumstances is vague and does not communicate enough information.

When retelling stories they have heard on radio or tape, children have no such visual mental image, and therefore their narratives contain more verbally explicit information. This quality of radio parallels the effect of literacy on the Vai's dictated letters. Indeed, radio as a medium is structurally similar to writing: in both, the message must be verbally self-contained and therefore explicit. Neither writing nor radio can expand or explicate a message through visual communication. In this

important respect, these media differ from face-to-face communication and television.

I cannot prove the connection to television, but as a teacher I have noticed an inordinate amount of vague reference in university students' writing. It occurs to me that this could be a long-term effect of large quantities of television watching. In other words, the immediate effect of television, seen in our study, repeated many, many times, could turn into a general approach to communication. Such an approach may be adequate in face-to-face interaction, where both participants can often see what they are talking about, but it is not adequate in writing, where nonverbal cues are lacking.

Vague reference on television. One reason why television viewers, children or adults, may use vague reference is that vague reference is common in the verbal communication presented on television. I used baseball broadcasts as a controlled experiment to test this. Because the same games are often broadcast on both radio and television, I could tape the narration of the same moments of play of the same game in both media. I taped several innings from the fourth game of the 1982 World Series between the St. Louis Cardinals and the Milwaukee Brewers. Comparison of samples from the transcripts of the two different media gives preliminary support to my analysis.

As anticipated, there was more vague reference in the television version than in the radio version of the game. I looked at how the batters were described at the decisive moment when they either hit, struck out, or walked. In about half the instances, the identity of the batter was taken for granted in the television account, but not in the radio account. The television announcer apparently relied on the visual image to identify the batter, while the radio announcer mentioned his name. Vague ref-

erence extended to action as well. Occasionally the television announcer would name the batter, relying on the visual image to say what the batter had done, while the radio announcer would both name the batter and describe his action. These preliminary results indicate that television presents a verbal model that, when it is inappropriately transferred to writing, is labeled as vague reference.

Two styles of communication. If this analysis is correct, vague reference derives from an audiovisual style of communication in which a visual image carries part of the message, words the other part. It contrasts with a purely verbal style in which words carry the entire message. Analysis of the baseball transcripts suggests other ways in which television narrative has its own distinctive audiovisual style, while radio has a verbal style. For example, more orienting information (such as the score) was given in the radio broadcast than in the television one. This parallels Scribner and Cole's finding that Vai who were literate in Vai or English provided more orienting information in their verbal instructions than the nonliterate did.

This analysis of the stylistic differences between radio and television suggests that children exposed to a particular electronic medium are being exposed to a very particular model of verbal style. I observed earlier that television promotes children's use of vague reference. It now appears that vague reference is one element in a more general audiovisual style of communication. Television also promotes other aspects of an audiovisual style in children's face-to-face communication.

Evidence on this point comes from some research by Laurene Meringoff, who observed that children more often used gesture in retelling a story they had seen on television than in retelling one that had been read to

them from a picture book.¹¹ Very often, these gestures constituted a nonverbal way of talking about some action that had occurred in the film. Thus, because of its dynamic depiction of action, television led to a greater integration of visual with verbal communication than did the storybook presentation.

In sum, radio is like print in that it presents and therefore fosters an articulate verbal style of communication. Television is like face-to-face communication in that it presents and therefore fosters an audiovisual style. Historically, with the advent of print, there was a movement away from the audiovisual style. Radio represented continuity in that it reinforced this change. Television, however, brings a movement back to the audiovisual style. I believe that television is, for this reason, perceived as a threat to the historical and cultural progression which preceded it. I think, too, that this change in style of communication is an important reason for the feeling that television is not only a threat to print culture, but is ruining the spoken language as well.

MEDIA AND OUR SENSES

Do the media affect the relative importance of our senses? Does a visual medium like television, for example, teach its audience to rely on visual information more than on aural information? Writing of what he called "the ratio among our senses," Marshall McLuhan raised this question years ago in *The Gutenberg Galaxy*, where he considered the effects of literacy, and in *Understanding Media*, where he discussed the electronic media. McLuhan had no hard scientific evidence with which to answer the question, and he gave little thought to the question as it concerned children. But in the past

five years a body of evidence has accumulated that applies this question to children and their development.

We know that when children watch television, they derive more information from the visual than from the audio track.¹² However, one wonders if children simply have difficulty understanding and remembering verbal material or if the moving visuals distract them from it. For five-year-olds, television does not seem to reduce attention to audio information; overall, at this age the audio is equally comprehensible and memorable whether it is part of a television presentation or presented as a separate soundtrack.¹³ It seems that young children simply have a harder time remembering verbal material than visual material.

The story is different for older children. Beagles-Roos and I found that as children advance in age they become better able to recall purely verbal information. With older children, furthermore, the impact of purely verbal information is greater in radio than television presentation.¹⁴ In comparing recall of television and radio stories, we found more dialogue was quoted in retelling the radio versions, even though the same dialogue had been presented on both soundtracks.¹⁴ Thus, radio stimulated more attention to the verbal soundtrack. To use McLuhan's terms, the ratio of the senses—auditory and visual—is different depending on the medium.

Thus far, I have treated the visual in contrast to the audio. But the key fact about television is that it is an audiovisual medium in which the two modes of expression are integrated. What sort of impact does this integration have on children? Research in England by Diane Jennings indicates that not until age seven does the addition of an audio track to a silent film add anything to children's immediate recall of a film.¹⁵ Thus, visual information predominates over verbal early in life; the

ability to integrate them in such a way that the whole is greater than the visual alone is a later step.

The issue of causality. What is not clear thus far is whether exposure to television *causes* the predominance of the visual sense or simply makes use of a naturally occurring stage of development. To put the question in McLuhan's terms, is television altering the ratio of children's senses in favor of the visual, or is it simply capitalizing on a pre-existing ratio?

Children develop their visual abilities very highly in the first year of life, before they acquire language. While they are in the process of learning language, they use this knowledge of the visual world to help them decode their mother tongue.¹⁶ Hence, visual understanding of people, objects, and actions is an earlier and therefore more basic way of understanding the world than is language. A primacy of vision over language exists for television to exploit. And there is evidence that television does exploit it. As early as six months of age, infants will pay attention longer to a television set with a picture on the screen but no sound, than to a set emanating sound without any picture.¹⁷

One way of deciding if television does more than exploit a pre-existing ratio between vision and speech is to look at the way adults process visual and auditory information when the two are not in competition. If television *causes* the predominance of the visual, it should do so in adults as much as in children; the effect, if it is a function of exposure to television, should perhaps be even stronger in adults because they have had so much more experience with television over the course of their lives.

This question is addressed by a study in which some adults were shown a dialogueless movie, *The Red Balloon*, and others heard a tape-recorded narration of care-

fully matched episodes from the written story. Children in a parallel situation remember a silent film better than the soundtrack alone.¹⁸ For adults, however, immediate recall of *The Red Balloon* was very similar in both media.¹⁹ According to this study the predominance of the visual has disappeared with age. This indicates that television does not alter the ratio of the senses in a permanent way, but that in young children it makes use of a naturally occurring ratio that favors the visual at that particular stage of life. This is an important point in defense of television. While the sense of hearing may be less important in viewing television than in listening to radio or tape, television does not result in any long-term reduction of the importance of auditory stimuli in general.

Visual images and long-term memory. While the predominance of the visual over the auditory certainly decreases with age, it does not disappear altogether. Although the adults' immediate recall of *The Red Balloon* was not affected by medium, a second test seven days after the presentations showed that recall deteriorated faster for the participants who had heard the story than for those who had seen the film. Even for adults, visual memory proved to be more enduring than auditory memory. The significance of this finding is captured by a comment a friend of mine made about the film *My Dinner with Andre*, which has no visual action whatsoever, but simply records a long dinner-table conversation: "Everyone likes it, but no one remembers anything about it."

A film such as *E.T.* is at the opposite pole from *My Dinner with Andre*. It is a very visual film, nonverbal communication predominates, and there is little dialogue. This may be one of the sources of its great popularity among young children: it fits their own ratio of the senses, in which the visual predominates over the

verbal. For older people, by contrast, especially people socialized with print and radio rather than television and film, this nonverbal quality may be distasteful.

THE INNER SENSE: IMAGINATION

In an interview, a retired baseball play-by-play radio broadcaster lamented the growth of television broadcasting for baseball, at the expense of radio. With radio, he said, the listener was an equal participant, an equal partner. The listener had to use imagination and memory, he continued, and it's a shame that that is lost.

Is there any truth to the idea that radio serves as a stimulus to the imagination? The claim is that the listener is an equal partner with the announcer because the listener has to contribute a mental image of the game as it is played, an image that involves memory and is personal to a particular member of the audience. This analysis implies that radio might stimulate the imagination more than television simply because it leaves more to the imagination.

Another study comparing radio and television was designed to test this idea with elementary school children. Again, each child was presented with one story in a radio format and a different one in a television format. But this time both stories were stopped a little bit before the end and the children were asked to continue them. The extent to which children introduced novel elements into their completions, elements that had not been in the story they had heard or seen, was the basis for our measures of imagination. Our basic finding was that children showed more imagination in their stories following radio than following television presentations. Thus, our results seem to provide scientific evidence for the belief voiced by the radio broadcaster that radio stimulates the imagination.²⁰

The claim has been made that television actually depresses imaginative activity. For example Dorothy and Jerome Singer found in a study of preschool children that the more television a child watched, the less likely the child was to have an imaginary playmate (which they considered to be an index of imagination). Following the same children up to age eight, they found that heavy television watching, particularly action-adventure shows, continued to show an association with relatively low scores on imaginative play. A natural experiment in Canada showed that children's creativity, as measured by their ability to think of multiple uses for common objects, declined after the introduction of television into their town.²¹

However, the influences of the media on imagination are not so simple. For one thing, not all television has an adverse effect on imagination. Other work by the Singers points to the possibility that particular shows can stimulate imagination. They found that *Mr. Rogers*, a children's program that is unusual in its slow pace, pauses for the child to respond, and creation of a distinct fantasy world, stimulates make-believe play, particularly in less imaginative preschool children. *Sesame Street* has also been found to foster imaginative play in children initially low in imagination, although less so than *Mr. Rogers*. Another complexity is that certain imaginative or creative tasks do not seem to be negatively affected by television, while others do.²²

Thus far I have been discussing verbal measures of imagination. But when people talk about imagination, they are often thinking specifically about visual imagery. Meringoff and colleagues investigated radio, television, and picture-book presentations to see what kind of visual images each stimulated. The researchers had the children draw pictures about the story. The radio version stimulated more imaginative drawings, in that chil-

dren "chose a wider variety of story content to represent graphically and incorporated more extra-story content in their drawings."²³ However, if we consider not the originality of the drawings but their quality, then children exposed to television and the picture book did better. For example, they more often depicted characters from unusual perspectives, and they included more unusual details. This effect of television on drawing has also been observed in Scandinavia.²⁴ Thus, while television does not seem to foster as much variety or use of the child's prior experience in creating drawings as radio does, it does seem to foster visual skills, such as those required for the creation of visual perspective.

If radio stimulates the imagination more than television, it is because it leaves visual gaps for the listener to fill in from the imagination. Some background knowledge is often required for this purpose. In fact, children do use their own knowledge and experience more when interpreting a radio story than when interpreting a television story. It follows that a purely verbal presentation will have more meaning for a person who has the requisite knowledge and experience to use in interpreting it. Print, being a verbal medium, should also stimulate the imagination and the incorporation of the reader's own experience. And indeed, an experiment has found print to be equivalent to radio in stimulating imaginative thinking.²⁵

In both reading and listening, when children lack the requisite background experience they may misinterpret the material. This can be a disadvantage in some situations, but it can also be a great advantage. If children read a book that goes beyond their experience in sex or violence, they may simply imagine it "wrong" or not at all. On television or film, in contrast, the same children, whether ready for the experience or not, will be forced to see it as it really is. Thus, the verbal media, by leaving

so much to be filled in by the imagination, actually adjust to the level of the child listener or viewer. This is probably why no one worried about violence in books or radio the way they worry about it on television or in film, even though it may be present to the same degree.

After reading *Macbeth*, my daughter, Lauren, went to see Roman Polanski's film of the play. Although she had read about Macbeth's severed head at the end of the play, it was a shock to see it in the film. She commented that she had not realized there was so much violence in the play. Her response is probably similar to those of children studied in England twenty-five years ago: more than twice as many said they had been frightened by things they had seen on television or film than in reading or radio.²⁶ The visual realism of film or television is an advantage for learning new material. But it can also be a disadvantage, if the material goes beyond what the child is emotionally ready for or if the goal is to stimulate the child's own imagination.

IMPULSIVITY VERSUS REFLECTION AND PERSISTENCE

Television, in comparison with print, is often rapidly paced and always in continuous movement. It does not allow time for the viewer's own reflection. These qualities have led to speculation that television leads to an impulsive rather than reflective style of thought and to a lack of persistence in intellectual tasks. Evidence for this idea has been provided by a demonstration that restricting six-year-old children's television viewing decreases intellectual impulsiveness and increases reflectivity, as measured by a standard test.²⁷ A study in the United States found that heavy television viewing was associated with less ability to wait and more restlessness.²⁸ In Canada, adults in a town without television

tended to be more persistent in problem-solving than adults from similar towns with television.²⁹

All of these findings may reflect the fact that television, unlike print, must be processed at the pace of the program. There are always new stimuli that demand assimilation; the viewer has no time to persist in understanding the old ones. (The more widespread and creative use of video recorders may partially overcome this limitation, by allowing the viewer to stop a program, think about it, and even go over a part of it a second time.)

Note that these qualities apply to *all* television. I am not talking about differences in pacing *between* TV shows. There has been specific criticism of *Sesame Street* on this account, although *Sesame Street* in fact uses a variety of styles, some slow, some fast. Daniel Anderson tested the effect of pacing on reflectivity and task persistence. Fast-paced shows had frequent cuts, scene changes, and action of various sorts. Slow-paced shows did not. Using specially edited *Sesame Street* programs, Anderson found no effect of pacing on four-year-old children.³⁰ Television's reduction of reflectivity and persistence must stem not from particular techniques but from the universal fact that it is a medium that unfolds in real time. By virtue of this fact, it paces the viewer, rather than vice versa.

Print not only allows time for reflective thought in comparison with television or film, it also can portray thought much better than film can. For example, an important part of the book *Being There*, by Jerzy Kosinski, is made up of the thoughts of the main character, Chance. As my son, Matthew, has pointed out, the film version of *Being There* uses the TV screen to show the viewer what Chance is watching, but it is unable to portray the subtleties of what he is thinking. The pre-

dominance of television and film in children's media diet means that children are not being given models of reflective thought, for film is forced to portray internal thought through external action. This shortage of reflective models may be one reason why heavy television viewing seems to cause an impulsive style of thought and behavior.

IMPLICATIONS FOR EDUCATION AND SOCIALIZATION

More than the medium itself, it is the social context and use of a medium that determine the medium's impact on children's ways of thinking. Print in itself is merely a medium for transferring information; it is not a whole set of higher-level thinking skills. Print is probably a less efficient way to convey information, overall, than is television, with its dynamic visual images, which are more easily understood and remembered than are words.

Television should be used more in schools to communicate information. But it should be used with class discussion directed by the teacher. Children's ability to explain what they have seen on television may well depend on the teacher-pupil dialogue that surrounds the presentation. Like print, television and film are not substitutes for human interaction, but must be combined with and enhanced by it.

In terms of education and socialization, one medium's weakness is another medium's strength. While television has its value, the child also needs other experiences. Parents should restrict the amount of television their children watch at home in order to use other media and experiences to foster reflection and imagination. Encouraging children to read will enhance these types of

thinking, while radio (or recordings if children's radio is not available) will stimulate imagination.

The skill of being articulate depends upon knowing how to be verbally explicit. This habit or skill is promoted more by the verbal media of print and radio, less by the audiovisual medium of television. Television seems to promote the use of nonverbal communication, which is also important. Again, a combination of media is desirable.

Because television is so powerful as a learning tool, it is all the more important that children be exposed to high-quality programming that (1) does not go beyond their emotional maturity and (2) provides fantasy or fact that will be useful, not detrimental, to life beyond the television set. How to improve the quality of television programming is a crucial topic, but one that is beyond the scope of this book. But as this chapter and earlier chapters have indicated, parents can do much to improve the effects of television by being selective about what shows children watch and by discussing programs to encourage the children to watch critically and thoughtfully.