

# CHAPTER 1

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## The Use of Television and Other Screen Media

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**T**elevision and other screen media account for a substantial portion of the time expenditures of children and adolescents. Recent estimates (Rideout, Foehr, & Roberts, 2010) place viewing at almost 5 hours a day for those 8 to 18, with 7 hours and 38 minutes devoted to all entertainment media (Kaiser Family Foundation, 2010). Screen media account for almost half of their media exposure, with television preeminent (with about 95% of screen media use). This implies, for most young people, an extensive consumption of undemanding entertainment, including many portrayals of conflict and violence, with potential consequences for affect, cognition, and behavior. There may be a loss as well of the benefits of foregone opportunities. Our present task is to examine the behavior of the young in their use of television and other screen media, by which we mean whatever appears on the television screen from whatever source, television content on other platforms (such as a computer or iPod), and movies seen in theaters.

There are very good reasons to give attention to young people's use of screen media. These media certainly provide many moments of piqued interest and enjoyment for children and adolescents, as they do for adults. In this respect, they are merely one of the pleasures afforded by modern life. However, it would be a mistake to think of them as limited to such outcomes. There is ample evidence that, for some young people, either the amount viewed or what is viewed may have adverse consequences (Comstock & Scharrer, 1999).

Television and other screen media have been implicated in the displacement of time that might be spent acquiring the basic scholastic skills of reading, mathematics, and writing (Comstock & Scharrer, 1999; Neuman, 1991; Van Evra, 1998; Williams, 1986); in the encouragement of attitudes and practices that diminish concentration while reading and promote a preference for undemanding pictures and texts, such as comic books (Koolstra & van der Voort, 1996); in affecting mood and

behavior by contributing to fearfulness, physiologically measured excitation, hyperactivity, and reduced impulse control and attention span (Cantor, 1994a, 1994b; Singer, Singer, Desmond, Hirsch, & Nicol, 1988); in shaping daydreaming, play, and imaginative processes (Valkenburg & van der Voort, 1994; Valkenburg, Voojls, van der Voort, & Wiegman, 1992); in encouraging food choices that promote obesity and poor nutrition (Adler et al., 1980; Comstock & Scharrer, 2007); and in the facilitation of aggressive and antisocial behavior (Anderson et al., 2003; Comstock & Scharrer, 1999, 2007; Kirsh, 2006; National Television Violence Study, 1996, 1997, 1998; Singer & Singer, 1981; U.S. Department of Health & Human Services, 2001).

Screen media also have been associated with prosocial outcomes. They can contribute importantly, through educational programming, to children's scholastic achievement, as exemplified by gains in knowledge of letters and numbers attributable to the viewing of *Sesame Street* (Cook et al., 1975). They can be a part of child-rearing practices that lead to slightly enhanced performance years later in high school (Comstock & Scharrer, 1999; Wright & Huston, 1995; Zill, Davies, & Daly, 1994). By the examples they may give of positive forms of behavior, they can facilitate generosity, tolerance, cooperation, and other modes of behavior that promote constructive social interaction. There is also the mundane but hardly insignificant relief of stress from entertainment (Comstock & Scharrer, 1999, 2007).

The exposure of children to a specific program or movie, as Hamilton (1998) pointed out in his economic analysis of the marketplace for television violence, is to a substantial degree the product of what economists call *externalities*, or unintended consequences, and the balancing of costs and benefits by television executives and parents. Executives may attract children to unsuitable programs as a by-product of scheduling them to maximize an older audience sought by advertisers. They may also schedule educational programs at times when the available audience of children is not at its peak because other programs are more profitable in those time slots. Parents may not supervise viewing to an optimum degree because of the inconvenience, or costs, of determining which programs might be harmful or beneficial and of exerting

authority. Thus, both media executives and parents often act in their narrow, short-term interests rather than acting in terms of longer-range benefits to children and society.

We conceive of the study of media audiences as very broad (Comstock & Scharrer, 1999), including orientation toward a medium; motivations for its use; content selection; various household and situational variables that affect use; the regularities that mark audience flow throughout the day, week, and season; and the demographic variables that describe media consumption. We attempt to describe young people's use of television and other screen media in the same terms.

We draw often on the Kaiser Foundation surveys of media use by the young (Rideout et al., 2010; Rideout & Hamel, 2006; Roberts & Foehr, 2004). They supply tabulations of media use that cover all media and are also nationally representative. They are remarkably up-to-date, with the most recent survey in 2009. They also employ a taxonomy that meticulously describes electronic media use and the new platforms that figure in access to television content.

We use the term *television and other screen media* to encompass all access to television content and time spent at theaters watching movies. *Television content* covers what might be received on a TV screen by whatever means it might be accessed (for example, time-shifted programs, DVDs and videos, the Internet, iPods and MP-3 players, and cell phones). We sometimes reassemble categories, such as combining movie going and use of videos and DVDs as an overall estimate of exposure to movies.

We recognize the distinction employed by the Kaiser surveys between media exposure and media use when describing aggregate consumption. *Exposure* is defined as the time spent with media, however achieved. *Use* is defined as the amount of time spent with media, however crowded with multiple use. One hour of attending to television while using the Internet would sum to two hours of media exposure produced by one hour of media use. Exposure by definition is always greater than (if two or more media are used at the same time) or equal to use (if there is no multiple consumption). This device captures media exposure that might be ignored while not exaggerating the allocation of time to media.

Otherwise, we employ the two terms *use* and *exposure* interchangeably to represent the time spent with the named source or type of content regardless of other media consumption that may be taking place at the same time.

## Children and Electronic Media

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### Television

Every new electronic communication medium has faced questions about effects on children and adolescents. (See Chapter 1 in Singer and Singer, 2001, for a full discussion of history of the media.) Television in particular has understandably aroused concerns. There was extensive research in the 1950s (Schramm, Lyle, & Parker, 1961); a report by the President's Commission on the Causes and Prevention of Violence, a media task force, in the late 1960s (Baker & Ball, 1969); and federal inquiries in the 1970s (Surgeon General's Scientific Advisory Committee, 1972) and 1980s (Pearl, Bouthilet, & Lazar, 1982). In fact, television was so popular it took away much of the audience for comic books (Comstock, 1991; Comstock & Scharrer, 2007). More recently, video games (Anderson, Gentile, & Buckley, 2007) and the Internet have received extensive attention.

When television was first developed in the 1920s and 1930s, the film and radio industries looked on it as more of a novelty than a threat. About three years after radio broadcasting became a reality in 1920, a very primitive version of a television system was available. In 1928, telecasting began on an experimental basis, without commercials or an audience. This was followed by television's first major public demonstration at the 1939 World's Fair and the first commercial telecast in 1941. Even after television became a major mass medium, the amount of time that children and adolescents spent with radio remained substantial. Confirming radio's consistent listenership, Lyle and Hoffman (1972a) reported in the early 1970s that, even when television was the most favored medium, half of the first graders and 80% of the sixth graders among their respondents reported listening to radio on the preceding day, and 24% of 10th graders reported listening five hours or more a day.

Television probably would have been developed as a commercial mass medium sooner except for three barriers: the depression, which severely constrained the consumer market; the popularity of movies, which seemed to satisfy needs for mass entertainment; and World War II, which dramatically monopolized human and technological resources. At the end of the war, however, the situation changed. There was what one analyst called a "supervening necessity" (Winston, 1986) on behalf of the new medium—the economy was resurgent, the growth of the suburbs favored in-home entertainment, and the industrial and technological capacities of war invited peacetime application. The need to invest in the economy translated into a market for a new mass medium. It became evident that television would constitute a serious threat to movies and radio (Barnouw, 1990).

The structure of early television closely resembled that of radio. There were three television networks—the National Broadcasting Company (NBC), the Columbia Broadcasting System (CBS), and the American Broadcasting Company (ABC)—and a programming spectrum that covered comedies, quiz shows, soap operas, suspense programs, variety shows, and westerns. The similarity resulted from the migration of personnel from radio (e.g., technicians, writers, directors, actors, musicians, and singers), pursuit of the same audience (Whetmore, 1981), and the aggressive advantage of radio broadcasters in obtaining television licenses from the Federal Communications Commission (FCC) (Boddy, 1990).

Schramm et al. (1961), in their benchmark study of the effects of the introduction of television, recorded that sixth-grade children were spending four fifths of their viewing time on programs intended for adult viewers. Even in first grade, nearly two fifths of viewing time was devoted to adult programs. This pattern of early use and extensive exposure to adult programs persists to the present day.

Whether children watch television alone or with parents, siblings, or peers is a significant component of the viewing experience. In the late 1940s and early 1950s, television typically was a major purchase and was placed in the living room. Viewing with parents was common; television physically brought families together (Lawrence & Wozniak, 1989; McDonagh, 1950), but such family viewing, whatever the

case when television was a novelty and whatever the minor pleasures of togetherness, eventually was categorized by many viewers as comparatively unrewarding (Kubey & Csikszentmihalyi, 1990). The young, with the help of affluence and technology, would increasingly view alone or with others their own age.

Today, almost 90% of households have more than one set, and many are in children's bedrooms. In addition, television is now available on a number of different platforms, such as the Internet via computers, iPods, cell phones, and similar devices (Rideout et al., 2010). The result has been a clear trend toward greater viewing alone. This increased independence has reduced the parental role in how much is viewed, what is viewed, and what young people learn from or think about what they view (Comstock, 1991a).

Cable, freed many years ago from regulatory restraints, and direct satellite services delivering a similar diversity of channels now reach about 85% of households. These carry adult programming that often is graphic in regard to sex and violence. They also make available children's channels (e.g., Nickelodeon, the Disney Channel, and Cartoon Network), family-oriented networks that carry some children's programming (e.g., Turner Broadcasting System [TBS], USA Network, the Discovery Channel, Turner Network Television [TNT], the Arts and Entertainment Channel [A&E]), and music channels primarily attended to by the young (such as MTV).

Ironically, this diversity may not improve the educational value of the viewing of some young people. The ease of viewing without parental involvement often means less viewing of educationally beneficial programs. For example, Huston and Wright (1996) found that cable access increased cartoon viewing by children because it made more cartoons available.

### Computer-Based Media

Television introduced a new experience in mass media into American households: the screen media. Today, a second novel household transition is well underway: the introduction of computer-based technologies.

#### *Educational Software*

The personal computer software market has been producing "edutainment" (education +

entertainment) programs for children since its earliest days. Typical programs for 6- to 9-month-old infants involve shapes, colors, animal sounds, and nursery rhymes. For toddlers, programs teach numbers and vocabulary while developing computer mouse skills. Some of these programs were spin-offs of television programs for children 12 to 18 months (e.g., *Play with the Teletubbies* from PBS and the British Broadcasting Company [BBC] and *Blue's Clues* from Nickelodeon). The software industry was soon able to extend the market to older children and adolescents.

#### *Video Games*

The first interactive video games originated in 1962. However, in the 1970s, computers were mostly mainframe computers and thus inaccessible to most people. During that time, video games were played in video arcades. Then, in 1972, microcomputer games were introduced alongside arcade systems, and by the 1980s, even home computers were thought of as game computers. In the mid-1980s, video game popularity surged, until market saturation with similar games led to a decline in sales. Then in the late 1980s, the Nintendo system was introduced—a computer solely for games—and the video game industry regained its popularity. In the 1990s, with the growth of CD technology, CD-ROM games led the market with much-improved graphics and realism. These trends were the foundation for the past decade—continuing high-popularity, stand-alone devices and ever-increasing realism and graphic impact.

#### *The Internet*

The idea of the Internet dates back to the 1950s, but the current design can be traced to 1969, when the Defense Department computer network allowed military contractors and universities doing military research to exchange information with each other electronically. However, the birth of the Internet as a public domain had to await the development of the personal computer by International Business Machines (IBM) in 1975 and the price reductions necessary for mass affordability in the early 1980s.

Finally, in 1987, the basic structure of the current Internet was formed when the National Science Foundation created a network giving researchers access to five supercomputing

centers that were connected to hundreds of other networks operated by educational institutions, government agencies, and research organizations (Cozic, 1997; Hudson, 1997). Today, supercomputers play no role in driving the Internet. It is based on the many, many thousands of smaller computers.

Growth has been encouraged by the interest of ordinary computer users in the World Wide Web (WWW) and other Internet features (Dizard, 2000). On average, children and adolescents today spend about an hour and a half a day using computers for recreational purposes (Rideout et al., 2010), about an hour more than a decade ago. Only about a quarter of an hour is devoted to video games, leaving an enormous one hour and 12 minutes for Internet use—communication (email, instant messaging), social networking (MySpace, Facebook), video sites (YouTube), and other applications.

The Internet is in its infancy. So far, Internet use by the young has only slightly affected use of other media while at the same time enjoying popularity and growth because so much use now involves multitasking (use of two or more media at the same time). This is the phenomenon that Robinson and Godbey (1997) labeled “time deepening.”

## Principal Variables

The principal variables that play a role in young people’s use of television and other screen media can be divided into four categories: societal and structural factors, household characteristics, personal attributes, and situational influences.

### *Societal and Structural Factors*

Societal and structural factors determine the number of channels available, their content, the costs of obtaining access to them, and, thus, the options open to the young viewer. These factors include governmental and regulatory policies that shape the way the media operate, the economics of program production and distribution that influence what will be offered, and the state of technology that determines what can be received or viewed in the home. In recent years, technology has been the center of attention for the dramatic increases in sources of programming and means of reception it has made possible.

### *Household Characteristics*

Household characteristics play an enormous role in children’s use of television and other media. These characteristics include socioeconomic status; the norms specifying the degree to which television is central to household life and leisure, including the ubiquity of television use; and the available resources, including the number of television sets, other media such as computers, media in children’s bedrooms, and alternative leisure opportunities.

### *Personal Attributes*

Personal attributes affect how much is viewed, what is viewed, and, importantly, the how—the attentional manner—of consuming television and other screen media. The principal variables are age, mental ability, and an outcome affected by both—comprehension—which figures in the shift from a child to an adult mode of viewing.

### *Situational Influences*

Situational influences include transient but sometimes repetitive factors that are not inextricably part of the practices or make-up of the household. These include the presence of others (e.g., parents, peers, and siblings) while the child is viewing; clock- and calendar-based influences such as hour of the day, day of the week, and season; and states of mind such as anger and loneliness.

## The Viewing Experience

The viewing of television and other screen media is such an everyday activity that it is easy to overlook its uniqueness among mass media consumption. Every mode of how people attend to media is encompassed—“browse, momentarily ignore, assemble into a mosaic of contrasting bits, passingly follow, attentively consume” (Comstock & Scharrer, 1999, p.61)—with the most striking feature being the large amounts of time in which viewers are indifferent. The combining of varying degrees of cognitive involvement with waxing and waning physical attentiveness in a context of social conventions and competing activities requires, in our view, an examination of the viewing process as prerequisite to looking at data on time spent viewing and its correlates. This is because hours and minutes spent with

television and other screen media only take on meaning and can only be meaningfully interpreted with knowledge of what constitutes viewing. We cover four topics: the purposes and motives of viewing; the role in viewing of three typical modes of response; the adoption of these adult-like viewing patterns as children learn to use television; and our explication and operationalization of the concept of viewing.

### *Purposes and Motives*

The two orientations that describe both viewing behavior at a given moment and an individual's typical disposition toward the medium so well among teenagers and adults (Comstock & Scharrer, 1999) at first seem embarrassingly obtuse when applied to children. *Instrumental viewing* surely connotes too much in the way of use of the medium for information to describe the behavior of children; *ritualistic viewing* seems to belie the enthusiasm that children bring to favorite programs and their characters. However, the data convince us that these distinctions can be usefully applied to children, although it is only through changes that occur during childhood that children, as a group, come to parallel the viewing behavior of teenagers and adults.

The distinguishing element is the degree to which the specific content of a program is responsible for viewing (Comstock & Scharrer, 1999, 2007; Rubin, 1983, 1984). The first priority in ritualistic viewing is exposure to television. Gratifications are then maximized by choosing the most pleasing of the available options. Correlates of regular ritualistic viewing are greater overall viewing and a preference for undemanding, entertaining content. Instrumental viewing, in contrast, is motivated by interest in a specific program or specific content. Correlates of regular instrumental viewing are lesser overall viewing and a preference for programs that satisfy a particular interest. Instrumental viewing, then, represents greater selectivity. Programs universally are of importance but at a subordinate level in ritualistic viewing. Most viewing is ritualistic; the proportion, however, may be declining because of the greater selectivity made possible by new technology—especially among the young because they are more likely to use such technology.

Ritualistic viewing accounts for the large amount of time that has been recorded as devoted to television viewing among all age groups. The devoted concentration called forth by highly interesting fare could only support a few hours of viewing a week. Ritualistic viewing is particularly likely to be characterized by monitoring, in which audience members attend only enough to follow the narrative and use cues in the audio track to determine when to direct attention to the screen (Comstock & Scharrer, 1999, 2007). It is this behavior that underlies the financial foundation of much of the medium—the assembling of the huge audiences that advertisers seek to reach.

The three major motives that operate within these two orientations for viewing at all ages are (a) diversion and an escape from comparatively less attractive options; (b) surveillance on behalf of social comparison, by which an individual evaluates the merits of his or her personal attributes; and (c) awareness. We define the latter as embracing not only what is transpiring in the world but also what is occurring on television (programs, personalities) and the way the medium covers those events (film, tape, controversy).

In our view, escape in its various guises is primary. Our rationale is the frequency with which stress in a variety of forms predicts greater viewing among both children and older people (Anderson, Collins, Schmitt, & Jacobvitz, 1996; Canary & Spitzberg, 1993; Kubey & Csikszentmihalyi, 1990; Maccoby, 1954; Potts & Sanchez, 1994), as well as the dominance of pleasure and relaxation when adults cite reasons for viewing (Albarran & Umphrey, 1993; Bower, 1985). The other two are nevertheless important. This is evident in the case of surveillance from the frequency with which viewers have been found to pay more attention to personages on the screen who are like themselves, whether the link is race (Comstock, 1991), age (Harwood, 1997), or gender (Maccoby & Wilson, 1957; Maccoby, Wilson, & Burton, 1958; Sprafkin & Liebert, 1978). In the case of awareness, it is evident from the frequency with which learning is cited as a motive by adults for attending to television (Albarran & Umphrey, 1993; Bower, 1985) and the frequency with which presentational elements—visual imagery, a compelling construction of the spoken

and the seen—figure in the quality ascribed to the viewing experience by audience members (Levy, 1978; Neuman, 1982).

### *Three Modes of Response*

The predominance of ritualistic viewing is exemplified by three modes of response to the medium that come to typify viewing as children mature, are characteristic of the viewing of teenagers and adults, and are surprisingly frequent throughout childhood. We emphasize that these modes of response are not universal. There are frequent exceptions to each, typically in the form of the time spent at all ages with favorite programs, major sports events, or particularly attractive movies. Nevertheless, they are the dominant motifs that characterize the bulk of attending to screen media and particularly television. They are the *primacy* given to the media, *low involvement*, and *monitoring*.

### *Primacy*

The primacy of the medium—a collection now of a bundle of media platforms that deliver television content—is one of the most consistently and clearly documented phenomena of mass audience behavior. Although the popularity of specific programs is crucial to the success of the channels on which the programs appear, the audience at a given time, for the most part, is not assembled because of a particular offering but rather to enjoy what the medium in general has to offer. The primacy, in particular, is represented by the well-known *two-step decision* process by which programs to be viewed are chosen and by the governing role of *time available* in whether or not television will be viewed.

The initial step is typically whether or not to view television (Barwise, Ehrenberg, & Goodhardt, 1982; Comstock, Chaffee, Katzman, McCombs, & Roberts, 1978). The second step is to select the most satisfying among the possible options for the person or persons making the decision. The role of specific programs in determining who will view at a given time is comparatively minor.

Viewing is largely (but not wholly) governed by time available. Viewing by those older and younger, by females and males, and by children varies across the time of day, the day of the week, and the season, depending on

the availability of the members of the demographic category to become part of the television audience (Comstock & Scharrer, 1999; Webster & Phalen, 1997). People almost always choose the same option again and again if options remain the same when viewing at a particular time, but substantially more than half the time they fail to see the forthcoming episode of something they have previously chosen to view—news, talk, situation comedy, action adventure—because some obligation or preferred activity takes them out of the vicinity of the operating television set (Barwise et al., 1982). When the United Nations Educational, Scientific, and Cultural Organization (UNESCO) surveyed time use in cities around the globe, including cities in the United States, Eastern and Western Europe, and South America, in the mid-1960s, an extraordinary pattern emerged in regard to television use. Despite the enormous differences that existed in the quality, type, amount, and variety of programming available, the set owners worldwide were very much alike in the amount of time spent with television (Comstock, 1991; Robinson & Converse, 1972; Robinson & Godbey, 1997). Recent data (Klepp et al., 2007) confirm the pattern among children across Europe: Children in Austria, Belgium, Denmark, Iceland, the Netherlands, Norway, Portugal, Spain, and Sweden, in data collected via the Pro Children Project and comprising well over 13,000 children from age 8 to 14, watched an average of 2.1 to 2.7 hours of television per day. These figures imply a relative consistency in exposure times for those in developed countries with ready access to the medium.

These varied data make it clear that the enjoyment of television and not the specific programs scheduled is primary most of the time in assembling an audience. One exception is the rare program that seemingly has no equivalent—that is not one of a largely fungible genre. A second exception is major events, such as the Super Bowl and other sports spectacles (Barwise & Ehrenberg, 1988). Annual events like awards programs are also major draws. The size of the Academy Awards audience, for example, has ranged from 32 to 43 million in the past eight years, with the 2010 Oscar broadcast pulling in 41.3 million viewers (O’Neil, 2010).

Thus, it is programming that conforms to the availability of demographic segments to become part of the audience, with the popularity of specific programs primarily governing the division of the available audience. An example is the role of children on Saturday mornings and, to a lesser extent, weekday afternoons. Children tend to be otherwise unoccupied and therefore available for viewing at these times, inspiring media executives to tailor programs offered during these parts of the day to child audiences. Similar “targeting” of audience segments occurs in other parts of the day, such as the scheduling of soap operas on weekday afternoons to appeal to nonworking women.

#### *Low Involvement*

Viewers much of the time are only passively involved in what they view. When large, representative national samples were asked what they viewed the night before, few mentioned a specific program. A majority cited the rewards of viewing television (a further reason to think of the medium as having primacy over individual programs in the assembly of an audience), and not many thought what they had seen was particularly rewarding, pleasurable, memorable, or exciting (Bower, 1985; LoSciuto, 1972). More than one third did not actively choose what they had viewed but watched whatever came on next or a program chosen—there were fewer multi-set households then—by someone else (LoSciuto, 1972). In a detailed study of the viewing behavior of two dozen families, between about one half and two thirds of adults said they did not give full attention to programs they considered as having viewed (Hopkins & Mullis, 1985); the higher figure was recorded for women because of their more frequent involvement in household tasks (Robinson & Godbey, 1997). Time-lapse photography (Allen, 1965) and video recording of viewers (Anderson, Lorch, Field, Collins, & Nathan, 1986; Bechtel, Achelpohl, & Akers, 1972) confirm that attention is typically erratic, with viewers giving no attention to the screen about 40% of the time. People treasure the medium, and many viewers have favorite programs they particularly enjoy, but as these data attest, much of the time they are not deeply engaged in attending to what is on the

screen (Barwise & Ehrenberg, 1988). The selectivity made possible by today’s much greater diversity has undoubtedly somewhat enhanced viewer interest in particular, but a diluted disposition toward the screen persists because the circumstances of much viewing remain the same. The data attest that viewers of all ages most of the time broadly seek entertainment and specific content is secondary.

Low levels of involvement should not be surprising for an activity that for the past several decades has consumed two dozen hours a week or more for the average person (Comstock & Scharrer, 1999) and that clocks in at an enormous 141 hours per month (that’s an average of 4.7 hours per day in a 30-day month) according to 2009 Nielsen figures (Nielsen Wire, 2010). Such a large allocation of time does not, in most households, permit an investment of intense concentration. Thus, the huge audiences that constitute the economic foundation of those sectors of the medium deriving much of their income from advertising are in equilibrium with the modest cognitive demands of most programming. It is no accident that those channels that somewhat more often venture into more demanding programming are those least dependent on advertising—cable, particularly premium cable, and public television. Low involvement makes a mass audience possible as well as leaves viewers in a state of vague pleasure within which advertisers may effectively court them.

#### *Monitoring*

Although, in deference to common usage, we use the term *viewing* to refer to attending to screen media, the more apt term is *monitoring* (which we use when we want to emphasize the nature of the activity). The various indexes that point to low levels of involvement in the typical viewing of most programs lead to the conclusion that most of the time viewers pay only sufficient attention to comprehend the unfolding narrative and take in depictions, portrayals, events, and exchanges of particular interest. This phenomenon has been examined primarily among young children, whose attention to the screen varies as a function of the audio and visual cues offered by the medium and the degree to which others in the vicinity are attending to the screen

(Anderson, & Lorch, 1983; Bryant, Zillmann, & Brown, 1983; Collins, 1981; Huston & Wright, 1989; Krull, 1983; Lorch, Anderson, & Levin, 1979). Drama, sound, and the behavior of fellow viewers—those are the cues that govern attention to the screen.

In effect, the viewer, disinclined to invest viewing with much in the way of concentration, seeks signs that will attest to an enhanced likelihood that one or another gratification will be satisfied or that an immediately forthcoming element will be important to understanding what is taking place. The same phenomenon characterizes adult viewing. On average, attention to the screen is at its lowest for content that is either episodic or redundant, or stereotypic and conventionalized. Episodic or redundant content, such as news, sports, and commercials, does not require prior attention to one item for future comprehension of another. Stereotypic and conventionalized content, such as soap operas, contain elements that, even if unattended to, can be readily inferred. Attention is at its highest for extended narratives that may present the unexpected, such as movies and crime dramas (Bechtel et al., 1972), because such attention is necessary for comprehension.

Television viewing, unlike attending to the screen at a movie theater, conforms to the principle of minimal expended effort because of the greater presence of distracting stimuli. Viewers most of the time adopt a strategy of attending closely only when reward or necessity dictates such an expenditure of effort, and the process involved makes the term *monitoring* more accurate than *viewing* in describing what takes place.

### *Learning to Use Television*

Children literally grow into these patterns of behavior. They learn to use the medium, and by about the age of 12, when amount of viewing will peak, their behavior in response to television will approximate that of adults—although there will be many specific programs they will not yet find of much interest.

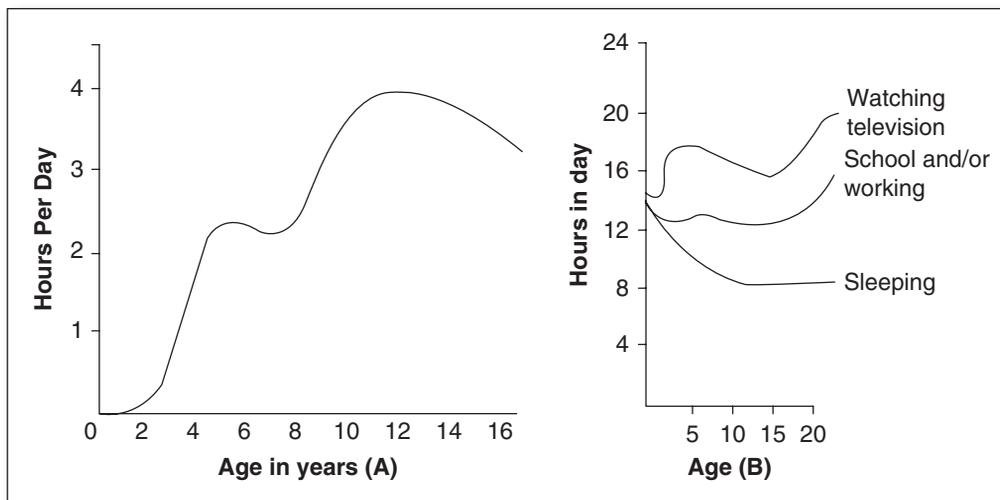
Viewing on a regular basis in a household with television usually begins between the ages of two-and-a-half and three, with an average estimated in one study of about 1.5 hours per day (Huston et al., 1983). Giving regular

attention to the screen, however, has been recorded as early as six months of age (Hollenbeck & Slaby, 1979). The recent Kaiser Foundation survey (Rideout & Hamel, 2006) of the very young estimates an average of 49 minutes a day in total screen use for those zero to one and 1 hour 51 minutes for those two to three. Screen media use, then, begins very early, and this has been a long-standing pattern in child rearing.

Viewing then quickly increases, with later estimates by the same group of investigators (Huston, Wright, Rice, Kerkman, & St. Peters, 1990) rising to 2.75 hours for those between the ages of three and six, then declining about a half-hour between the ages of five-and-a-half and seven, when activities associated with beginning school temporarily limit available time. As most data indicate, viewing increases again until about ages 12 to 14. Thus, a peak in viewing begins in late childhood and continues into early adolescence. In the latest Kaiser data, 11- to 14-year-olds viewed an average of just over five hours of television per day, compared to 3 hours 41 minutes for 8- to 10-year-olds and 4 hours 22 minutes for 15- to 18-year-olds (Rideout et al., 2010). Our Figure 1.1 is valid in the shape of the curves, but amount of viewing would be somewhat higher were it based on contemporary data.

Obviously, at the earliest of these ages, the following of a narrative would not be one of the satisfactions of viewing. However, if what is seen performed on the screen is within their physical capability, children as young as 12 and 24 months of age are able to internalize what they see, imitate it on request, and retain this capability for as long as 24 hours after the initial exposure (Meltzoff, 1988). Thus, comprehension of what is represented physically on the screen begins quite early.

Preferences develop very early (see Table 1.1, page 23). About four fifths of the three-year-olds in the Los Angeles area sample of 160 children ages three, four, and five named a favorite program when asked to do so by Lyle and Hoffman (1972b); by age five, almost everyone did. Gender and age are major predictors. Both preschool boys and girls are attracted to appealing animal characters, as exemplified by *Sesame Street*. Girls will watch superhero programming in which they have only token representation, as attested to by the

**Figure 1.1** Television Viewing by Age

Source: Comstock, Chaffee, Katzman, McCombs, and Roberts (1978).

child audience for Saturday morning programming (Comstock, 1991). Gender exerts an influence even among very young children, with twice as many girls as boys (39% vs. 19%) among those ages three, four, and five naming a family cartoon (*The Flintstones*) as a favorite and three times as many boys as girls (17% vs. 5%) naming a violent cartoon as a favorite. More recently, very young children, in first and second grade, were asked to list up to three favorite television programs (Aubrey & Harrison, 2004). Animated fare expressly created for children dominated the list (with *Rugrats*, *Doug*, *Arthur*, and *Pokémon* among the top choices), thus pointing to the enduring appeal of the cartoon format for the young child. Additional recent data from 183 children from 5 to 12 years of age found characters need not be realistic to become a child's favorite (Rosaen & Dibble, 2008). Indeed, 73% of the children in the sample chose a favorite character who neither appeared nor acted real (such as an animated character and/or one with super powers).

Age differences are pronounced. In the data Lyle and Hoffman (1972a) obtained from about 1,600 Los Angeles area 1st-, 6th-, and 10th-grade students, about half of those in the first grade named a situation comedy and about a fourth named a cartoon as favorite. By the sixth grade, only one in 20 named a cartoon;

situation comedies remained the most popular but to a somewhat reduced degree; and all varieties of adult formats were increasing in favoritism. By the 10th grade, the most popular formats were action adventures, dramas, and music, variety, and talk shows (music and variety now partly replaced by MTV and other music channels). Further, as children grew older, they were more likely to have favorite television characters who looked and behaved in ways similar to what is encountered in the "real world" (Rosaen & Dibble, 2008).

The viewing of *Sesame Street* and other educational programs designed specifically to appeal to the very young increases between the ages of three and four and then begins to decline precipitously (Huston et al., 1990). The early gender and age shifts observed by Lyle and Hoffman (1972a, 1972b) represent enduring phenomena because children have not changed in their cognitive and affective makeup and, consequently, television essentially has not changed in what it makes available to them. Thus, about 20 years later, Huston and colleagues (1990) observed the same trends in their Topeka sample of more than 300 children three to five and five to seven years old. And more than 30 years later, Aubrey and Harrison (2004) and Rosaen and Dibble (2008) confirmed the special appeal of animation and cartoons for children.

**Table 1.1** Child and Teenage Viewing Preferences, by Type of Program

	Percentage Named as Favorites					
	Preschool Age			Grade		
	3	4	5	1st	2nd	3rd
Sitcom	—	4	12	22	17	9
Family sitcom	5	2	6	25	23	9
Flintstones	11	29	36	—	—	—
Mickey Mouse	3	4	12	—	—	—
General cartoon	8	16	6	24	5	1
Violent cartoon	3	15	12	—	—	—
Bozo, etc.	8	2	—	—	—	—
<i>Sesame Street</i>	30	13	12	—	—	—
Mister Rogers	3	2	6	—	—	—
Don't understand the question	19	4	3	—	—	—

Source: Lyle and Hoffman (1972a, 1972b).

Note: Percentages are rounded to the nearest whole number.

Two concepts proposed by von Feilitzen and Linne (1975) help explain these patterns: *similarity* and *wishful identification*. Similarity refers to the preference for characters like oneself and is very evident among children in the greater attention and greater favoritism they give to portrayals of those of the same gender, age, or race (Comstock, 1991; Harwood, 1997; Lyle & Hoffman, 1972a; Maccoby & Wilson, 1957; Maccoby et al., 1958; Sprafkin & Liebert, 1978). Wishful identification refers to a preference for characters the young viewer would like to resemble, and it increases with viewer age. Thus, children increasingly come to view programs portraying those who are older, more powerful, and higher in status, while when very young they will prefer programs portraying those who are somewhat dependent on others, as they are, such as cute animals (Comstock, 1991).

What increasingly becomes the case is the adoption of patterns that characterize teenage and adult viewing, but what is surprising is the occurrence of some of these patterns in the earliest years of viewing. The motive of

surveillance, or using television as a source for evaluating oneself, apparently begins very early, as evidenced by very young viewers' preference for those on screen who have something in common with them. The gratification derived from awareness about the medium similarly would seem to be satisfied by the decided shifts in favorite programs, which also begins among the very young. Escape is omnipresent, and the central role of simple pleasure in attending to the images on a television screen is manifest in an oddity of the behavioral science laboratory. Television imagery or its withdrawal can be used to shape the behavior of young children (as could any pleasurable or noxious stimulus) and thus is inherently rewarding (Baer, 1962).

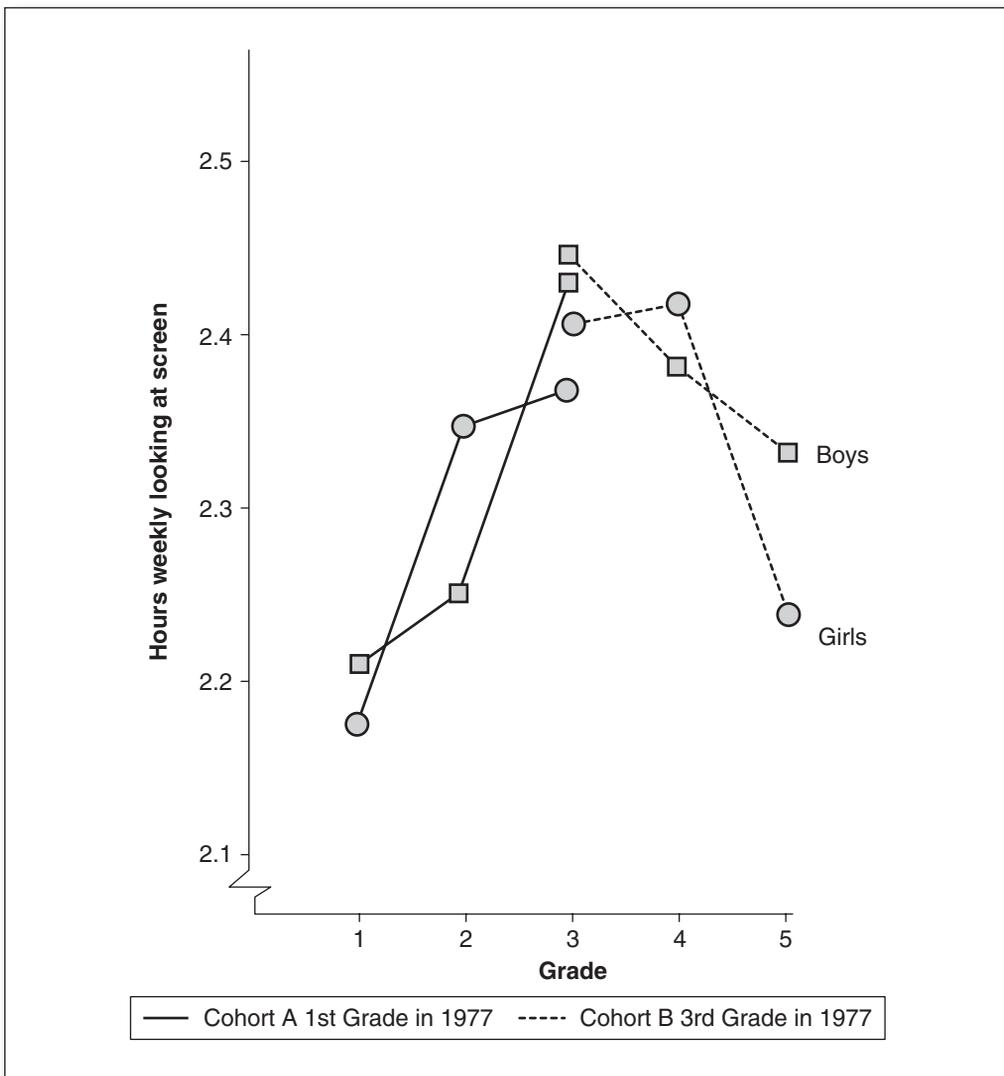
Children are reputed to be tremendous fans of favored programs and their characters, and we have no reason to doubt the accuracy of parental anecdotes, newspaper articles, or the testimony of the shelves and stacks in stores of toys and paraphernalia representing television programs. This devotion is reflected in the greater attention preschool children

give to the screen when watching a cartoon compared with a situation comedy (Argenta, Stoneman, & Brody, 1986) and the visual attention that young children give to children's programming in general (Bechtel et al., 1972). In these instances, they are undeniably instrumental viewers.

However, their viewing of other content and at other times, which will constitute a majority of the viewing of all children, is clearly more ritualistic in nature, and their

increasing adoption of a less involved stance toward viewing is quite apparent when the frequency of viewing favorite programs is examined (see Figure 1.2). It increases up to about the age of nine; children are exercising their preferences (which by then would place situation comedies in the forefront, with cartoons dwindling in favor and general audience formats other than situation comedies showing small gains). Then the viewing of favorites declines; children begin to

**Figure 1.2** Change in Frequency of Television Viewing From Grades 1 to 5: Favorite Programs



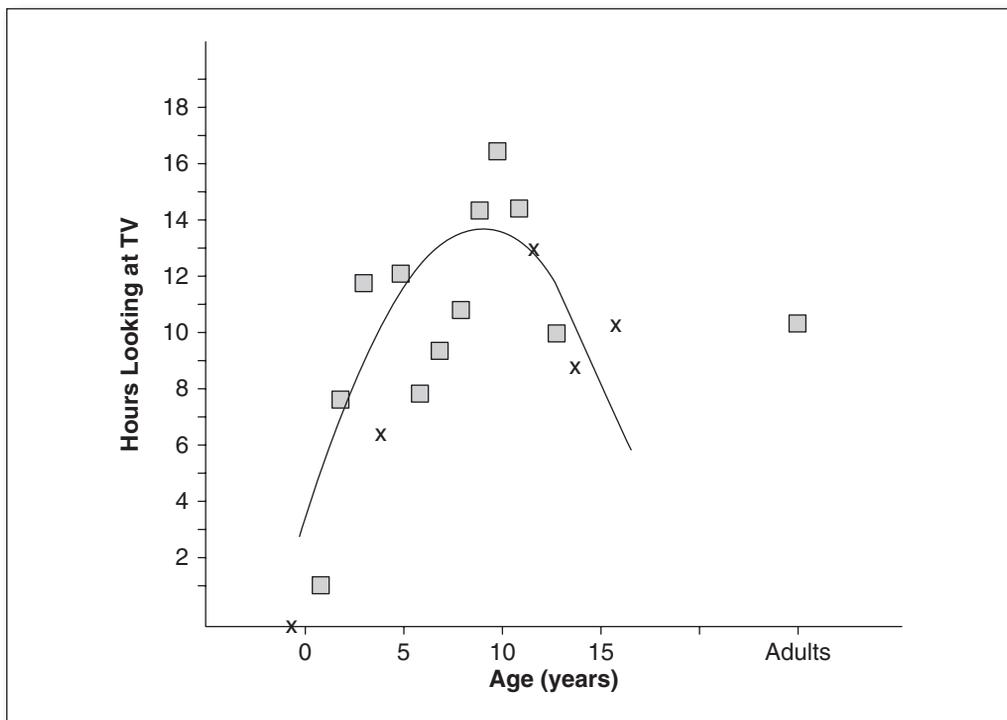
Source: Eron, Huesmann, Brice, and Mermelstein (1983).

conform to the constraints of the time available to view favorites, as their overall viewing at this point in the life span, on average, is actually increasing (see Figure 1.1). Children are beginning to resemble adults, who often miss favorites in their truncated exercise of preferences, an exercise that for both adults and children is only slightly enhanced by the DVR and other home recording devices because only modest amounts of regular recording and replay

occur in most households (Comstock & Scharrer, 1999, 2007; Lin, 1990, 1993).

Attention to the screen in general typically also will have been rising during these earlier years (see Figure 1.3) because the shifts toward general audience programming on the part of children increasingly requires their greater attention if they are to understand what is taking place and derive some gratification from following the narrative (Anderson et al., 1986). Then, at about the same age that time constraints begin

**Figure 1.3** Weekly Attention to the Screen as a Function of Age



Source: Anderson, Lorch, Field, Collins, and Nathan (1986).

to delimit the viewing of favorite programs, attention to the screen begins to decline (compare Figures 1.2 and 1.3). Children now have had sufficient experience with television and have sufficient cognitive capacity to make inferences about what is being portrayed. They are well into the “concrete operational” stage, in the vocabulary of Piaget (Piaget & Inhelder, 1969), so they are able to comprehend much of what is on television about as well as most adults do

(Comstock, 1991), and consequently, less attention to the screen is required to follow a narrative. They are now monitoring the medium much of the time. Nevertheless, as a careful examination of the data (Figure 1.3) makes clear, young teenagers give more attention to the screen than young children do to satisfy their motive to monitor the general audience programming to which they are now more often attending with comprehension.

By the time young persons are at the midpoint of their teenage years, they will have adopted the adult pattern of viewing in which much of television use is ritualistic. The medium will have primacy over specific content, involvement will be comparatively low, and monitoring will better describe the sporadic attention that is typically given to the screen than viewing. However, some programs some of the time will command enough attention and some viewers will be selective of content in which they are highly interested enough of the time that, for those times and those viewers, television use is instrumental.

### *The Concept of Viewing*

We believe that the definition and operationalization of the concept of viewing must acknowledge the irregular activity represented by monitoring. Clancey (1994), in this very vein, proposed that presence in the room when a set is operating should be sufficient to be counted as a viewer.

We offer the definition formulated by the first author and his colleagues (Comstock et al., 1978): “a discontinuous, often interrupted, and frequently nonexclusive activity for which a measure in hours and minutes serves only as the outer boundary of possible attention” (Comstock et al., 1978, pp. 146–147). We operationalize—that is, would measure—these hours and minutes in terms of the time individuals record themselves as using the medium, with use divided into three levels: *primary*, *secondary*, and *tertiary* (Comstock & Scharrer, 1999; Robinson & Godbey, 1997). The first consists of television recorded as a sole activity or foremost activity; it has accounted in the average household for slightly more than two thirds of use. The second covers television when it is recorded as specifically secondary to some other activity; this has accounted for about one fifth of use. The third includes television that is subordinate to other activities (usually two or more) but is nevertheless operating in the vicinity (and thus subject to monitoring); this has accounted for the remaining approximately 10% of use. The data (Robinson & Godbey, 1997) establish television as an activity that ranks high overall in the priorities of time allocation despite the irregularities and inconsistencies of attention. They also make it

clear that the majority of use from the perspective of the viewer constitutes the most important activity underway at the time.

### **Viewing Behavior**

We begin our examination of the amount of use of television and other screen media with a critique of the measurement of viewing. We then turn to the context of other activities within which viewing occurs; the role of our principal variables; developmental processes as they relate to children’s television use; cross-cultural patterns; and changes that have taken place since the introduction of the medium more than six decades ago. The focus will be on television, including content received from a variety of platforms, because motion picture theater attendance accounts for a comparatively small proportion of the time allocated by children and adolescents to screen media.

#### *Measurement*

There are wide variations in the quality of the data available on television viewing by children and adolescents. Two major issues are the validity of the measurement techniques and the representativeness of the sample. However, rapid technological change makes recency and sensitivity to changing behavior also very important. Often, measurement, the samples, or recency are less than ideal.

We prefer *diary data* that can be recorded post hoc (usually by parents) to data produced by Nielsen Media Research’s “people meter,” which requires real-time entry on a remote-control-like device. The meter risks underestimating the viewing of children (Comstock & Scharrer, 1999), whose behavior at the moment may be ignored by adults and who are likely themselves to skip the task of entry as the result of fatigue, indifference, or distraction. We obviously also prefer representative national samples because these produce estimates (within small and known margins of error) for the nation as a whole.

In our judgment, the best sources of national data are the Kaiser Foundation surveys, which collected data from nationally representative samples of 8- to 18-year-olds in 1999, 2004, and 2009 (Rideout et al., 2010;

Roberts & Foehr, 2004; Roberts, Foehr & Rideout, 2005). In addition, Kaiser has sponsored national surveys of media use by the very young—those six months to six years in age (Rideout & Hamel, 2006; Rideout, Vandewater & Wartella, 2003). These are pioneering efforts in their scope (range of ages), comprehensiveness (all media), and representativeness (the nation), and they cannot be faulted on recency.

The recent national survey, which is typical, had a sample of 2,002 young people 8 to 18 years in age (3rd through 12th grade) who completed questionnaires in classrooms. The sample was chosen in two stages, with schools randomly selected first and then classrooms within schools, and the survey was conducted from late October 2008 to early May 2009.

The most recent preschool survey obtained data by telephone interview from 1,051 parents of children six months to six years in age. The sample was chosen by random-digit dialing, and the survey was conducted from early September to late November 2003.

We have drawn on the time-budget data of Robinson and Godbey (1997) in identifying the three levels of television use—primary, secondary, and tertiary. Large though the numbers are, the Kaiser measurement techniques probably somewhat underestimate screen media exposure. This is because the survey questions are attention-centric, asking for time spent viewing from the user's perspective. This procedure risks ignoring some background use of media such as television (and radio) that do not require strict attention. For example, it is hard to imagine using an iPod to view television without consciously giving attention to the screen, just as using a computer as background to another activity would be difficult to ignore, but passive exposure to television content when a set is operating without any motive or interest in viewing is quite conceivable. Thus, the Kaiser estimates for television and radio are actually conservative.

At many points, data from recent or representative national samples are not available. In these cases, we emphasize that while the relationships among variables to which we call attention in our view are valid (or we would not present the data), the exact figures or proportions cannot be extrapolated to children and adolescents in general.

### *Other Activities*

Our summary of the data on activities that might compete with or be diminished by the use of screen media covers two topics. The first is the ranking of television and other screen media when compared with other activities. The second is the relationship between greater amounts of screen media use and engaging in voluntary activities such as social interaction, play, lessons, hobbies, and excursions.

### *Ranking*

Among the population in general across the life span in the many different societies where UNESCO examined time use, television invariably has ranked third behind sleep, which typically has been first, and work or school (Condry, 1989; Robinson & Godbey, 1997). The pattern is similar for children and adolescents.

The diary data meticulously collected from about 400 children and teenagers between the ages of 3 and 17 in the early 1980s (see Table 1.2) by Timmer, Eccles, and O'Brien (1985) indicate that, at the earliest ages (three to five), television took up only about half of the time of free play, which ranked second only to sleep at this age, and began to rival play only among those slightly older (six to eight). After this point, television was consistently third on weekdays (behind sleep and school), and on weekends, when there is no school, it ranked second.

These estimates are remarkably similar to those obtained almost three decades later using a large nationally representative sample (Rideout & Hamel, 2006). These more current estimates of screen use are 1 hour 51 minutes for those two to four and 1 hour 50 minutes for those four to six (see Table 1.3). These data testify to great stability in children's time use when the functions of activities—in this case, entertainment—remain the same; screens, and to some extent their content, have changed, but their role has not and, thus, neither has the amount of time allocated to them.

The broader context of media use, in contrast, displays significant increases in exposure to television content and music (see Table 1.4), as well as use of computers and video games (Rideout et al., 2010). Total *media use* for those 8 to 18 was 7 hours 38 minutes, an increase of more than an hour in

**Table 1.2** Time Spent by Children and Teenagers in Primary Activities (Mean Hours:Minutes)

Activities	Week Days							Weekend Days							Significant Effects
	3-5 <sup>a</sup>	6-8	9-11	12-14	15-17	3-5	6-8	9-11	12-14	15-17	3-5	6-8	9-11	12-14	
Market work <sup>b</sup>	—	0:14	0:08	0:14	0:28	—	0:04	0:10	0:29	0:48					
Personal care	0:41	0:49	0:40	0:56	1:00	0:47	0:45	0:44	1:00	0:51	A, S, A x S (F>M)				
Household work	0:14	0:15	0:18	0:27	0:34	0:17	0:27	0:51	1:12	1:00	A, S, A x S (F>M)				
Eating	1:22	1:21	1:13	1:09	1:07	1:21	1:20	1:18	1:08	1:05	A				
Sleeping	10:30	9:55	9:08	7:53	8:19	10:34	10:41	9:56	10:04	9:22	A				
School	2:17	4:52	5:15	5:44	5:14	—	—	—	—	—					
Studying	0:02	0:08	0:29	0:33	0:33	0:01	0:02	0:12	0:15	0:30	A				
Church	0:04	0:09	0:09	0:09	0:03	0:55	0:56	0:53	0:32	0:37	A				
Visiting	0:14	0:15	0:10	0:21	0:20	0:10	0:08	0:13	0:22	0:56	A (Weekend only)				
Sports	0:05	0:24	0:21	0:40	0:46	0:03	0:30	0:42	0:51	0:37	A, S (M>F)				
Outdoor activities	0:04	0:09	0:06	0:07	0:11	0:06	0:23	0:39	0:25	0:26					
Hobbies	0:00	0:02	0:02	0:04	0:06	0:01	0:05	0:03	0:06	0:03					
Art activities	0:05	0:04	0:03	0:03	0:12	0:04	0:04	0:04	0:07	0:10					
Other passive leisure	0:09	0:01	0:02	0:06	0:04	0:06	0:01	0:07	0:10	0:18	A				
Playing	3:38	1:51	1:05	0:31	0:14	4:27	3:00	1:32	0:35	0:21	A, S (M>F)				
TV	1:51	1:39	2:26	2:22	1:48	2:02	2:16	3:05	2:49	2:37	A, S, A x S (M>F)				
Reading	0:05	0:05	0:09	0:10	0:12	0:04	0:09	0:10	0:10	0:18	A				
Being read to	0:02	0:02	0:00	0:00	0:00	0:03	0:02	0:00	0:00	0:00	A				

Source: Timmer, Eccles, and O'Brien (1985).

Note: A = age effect, significant at  $p < .05$  for both weekday and weekend activities unless otherwise specified; S = sex effect, significant at  $p < .05$ ; F>M = females spend more time than males; M>F = males spend more time than females; A x S = age by sex interaction, significant at  $p < .05$  a. Age in years. b. Market work = obligations outside the home.

**Table 1.3** Media and the Very Young

	<i>(Hours: minutes; [ ] % using each day)</i>			
	Age			
<i>Time Use</i>	<i>0–1</i>	<i>2–3</i>	<i>4–6</i>	<i>Overall</i>
Reading (or Being Read To)	:33 [77]	:42 <sup>+</sup> [87]	:42 <sup>+</sup> [87]	:40 [83]
Music	:57 <sup>+++</sup> [88]	:50 <sup>+++</sup> [84]	:41 [78]	:48 [82]
Television	:34 [56]	1:11 <sup>+</sup> [81]	1:02 <sup>+</sup> [79]	:59 [75]
Playing Outside	:56 [55]	1:26 <sup>+</sup> [80]	1:34 <sup>+</sup> [81]	1:22 [74]
Watching Video or DVD	:13 [24]	:32 <sup>+</sup> [41]	:25 <sup>+</sup> [32]	:24 [32]
Reading Electronic Book	:05 [11]	:06 [18]	:04 [13]	:05 [14]
Computer	:01 [02]	:05 <sup>+</sup> [12]	:12 <sup>++</sup> [26]	:07 [16]
Videogames	:00 [01]	:03 <sup>+</sup> [08]	:10 <sup>++</sup> [18]	:06 [11]
Total Screen Media*	:49 [61]	1:51 <sup>+</sup> [88]	1:50 <sup>+</sup> [90]	1:36 [83]

<sup>+</sup> Statistically significant ( $p < .05$ ) vs. 0–1; <sup>++</sup> vs. 0–1 and 2–3; <sup>+++</sup> vs. 4–6.

N= 1,051 parents of children six months to six years in age.

\*Television, video/DVR, videogame, computer.

Source: Rideout & Hamel, 2006. Menlo Park, CA: Kaiser Foundation.

**Table 1.4** Media Use Over Time

	<i>(8–18 year olds) (hours:minutes)</i>		
	YEAR		
<i>Medium</i>	<i>2009</i>	<i>2004</i>	<i>1999</i>
TV Content	4:29 <sup>a</sup>	3:51 <sup>b</sup>	3:47 <sup>b</sup>
Music/audio	2:31 <sup>a</sup>	1:44 <sup>b</sup>	1:48 <sup>b</sup>
Computer	1:29 <sup>a</sup>	1:02 <sup>b</sup>	:27 <sup>c</sup>

*(Continued)*

**Table 1.4** (Continued)

(8–18 year olds) (hours:minutes)			
	YEAR		
Medium	2009	2004	1999
Video games	1:13 <sup>a</sup>	:49 <sup>b</sup>	:26 <sup>c</sup>
Print	:38 <sup>a</sup>	:43 <sup>ab</sup>	:43 <sup>a</sup>
Movies	:25 <sup>a</sup>	:25 <sup>ab</sup>	:18 <sup>b</sup>
TOTAL MEDIA EXPOSURE	10:45 <sup>a</sup>	8:33 <sup>b</sup>	7:29 <sup>c</sup>
Multitasking Proportion	29% <sup>a</sup>	26% <sup>a</sup>	16% <sup>b</sup>
TOTAL MEDIA USE	7:38 <sup>a</sup>	6:21 <sup>b</sup>	6:19 <sup>b</sup>

Statistical significance ( $p < .05$ ) across rows indicated by nonmatching subscripts. Total media exposure = sum of hours and minutes spent with media. Total media use = amount of hours and minutes allocated to media in a day. Media activity covers watching television and movies, playing video games, listening to music, using computers, and reading newspapers, magazines, and books. Data confined to nonschool related recreational use of media. Class projects, homework, in-school computing excluded.

Source: Rideout, Foehr, and Roberts (2010).

the 10 years since 1999; *media exposure*, which reflects the sum of time with individual media, was an extraordinary 10 hours and 45 minutes, about 3 hours and 15 minutes more than was registered in 1999. This discrepancy of exposure and use represented almost a doubling of media multitasking, from 16% to 29% of media use. Print saw a small decline (although the estimates included text read on computer screens); theater movie-going saw a small increase.

#### *Screen Media as Competition*

Options for the allocation of discretionary time changed with the introduction of television in the late 1940s. There was a substantial rearrangement of time for many, with greater amounts of time spent with mass media overall, principally accounted for by television. There was a decline in the time spent on a wide variety of other activities, including the use of other mass media (Comstock & Scharrer, 1999; Himmelweit, Oppenheim, & Vince, 1958; Murray & Kippax, 1978; Robinson, 1972; Robinson & Converse, 1972; Schramm, et al., 1961). Similarly, longitudinal data drawn from nearly 2,000 South African 7th to 12th graders before and after the introduction of television there in the mid-1970s showed radio

listening and movie attendance most often displaced—though only modestly—and particularly when the medium of television was novel (Mutz, Roberts, & van Vuuren, 1993).

With one possible exception, there is very little evidence that greater amounts of screen media use—specifically television set use in the data available—currently have a detrimental effect on children engaging in other activities. Whether the activity in question is socializing with peers or parents, play, lessons, hobbies, or excursions, the relationship with viewing repeatedly has been found to be null or only very modestly inverse, with the latter usually attributable to those who view very little or a very great deal (Lyle & Hoffman, 1972a; Medrich, Roizen, Rubin, & Buckley, 1982; Neuman, 1991; Roberts & Foehr, 2004; Robinson, 1990). In one instance (Roberts & Foehr, 2004), engaging in activities with parents was more likely among those higher in media use. Our interpretation is that children and adolescents do not typically abandon activities that are enjoyable and interesting for television and that much of their viewing is the reciprocal of the availability of such options. The modest inverse relationships principally represent either particularly strong preferences for alternatives among a few (who view very little) or the unavailability (from the perspective of the

young viewers) of much in the way of alternatives among another few (who view a great deal). In sum, a few hours one way or another of television per week doesn't make much difference for most young people in how they spend their time. The possible exception is reading, for which television can serve as a less demanding, more accessible sedentary substitute (Comstock & Scharrer, 1999; Huston, Wright, Marquis, & Green, 1999; Mutz et al., 1993; Williams, 1986).

### Viewing Patterns

The best estimate available of television screen use is the average of 4 hours and 39 minutes a day for children and adolescents 8 to 18 years in age (Rideout et al., 2010), which represents access to television content from a variety of sources (see Table 1.5). The average of 25 minutes per day spent at the movies brings the total of screen exposure to an average of 4 hours 54 minutes a day.

These Kaiser Foundation figures represent significant change in three respects. First, total screen exposure has increased impressively over the past decade. Second, viewing television content at the time it is broadcast (called *live TV* by the investigators) declined noticeably. Third, viewing on platforms that in earlier years were not considered worth measuring—the Internet, iPods and MP-3 players, and cell phones—accounted for 56 minutes of viewing in 2009, about one fifth of all exposure to television content.

There is a moderate degree of stability as young people grow up in the amount of screen media that they view. Tangney and Feshbach (1988), in a sample of 400 elementary school children, found correlations of .67 and .65 between adjacent years and .54 between the first and third year in hours spent with television. Some stability would be expected because, for many young people, the principal variables that influence screen use would not much change. What the variability in the data

**Table 1.5** Screen Media Use Over Time

(8–18 year olds) Hours:Minutes per day			
	YEAR		
	2009	2004	1999
<i>TV Content</i>			
Live TV	2:39 <sup>a</sup>	3:04 <sup>b</sup>	3:05 <sup>b</sup>
Time-shifted TV (total)	:22 <sup>a</sup>	:14 <sup>b</sup>	:14 <sup>b</sup>
On Demand	:12	~	~
Self-recorded TV (TiVo/DVR/VCR)	:09 <sup>a</sup>	:14 <sup>b</sup>	:14 <sup>b</sup>
DVDs/videos (total)	:32 <sup>a</sup>	:32 <sup>ab</sup>	:28 <sup>b</sup>
On a TV	:26	~	~
On a computer	:06	~	~
TV on other platforms (total)	:56	~	~
Internet	:24	~	~
iPod/MP3 player	:16	~	~
Cell phone	:15	~	~
TOTAL TV CONTENT	4:29 <sup>a</sup>	3:51 <sup>b</sup>	3:47 <sup>b</sup>
Movies	:25	:25	:18
TOTAL SCREEN USE	4:54 <sup>a</sup>	4:16 <sup>b</sup>	4:22 <sup>b</sup>
Statistical significance ( $p < .05$ ) across rows indicated by non-matching subscripts.			

Source: Rideout, Foehr, and Roberts (2010).

attest to (and particularly the lower coefficient for first and third years), then, is that, in fact, as young people grow up there is considerable change in the obligations, alternatives, and preferences for other activities that govern the time available on which screen use depends.

#### *Societal and Structural Factors*

How much young people view is not much influenced by programming schedules; it is influenced by the hours and minutes that they are able to view. However, the programming available importantly affects what is viewed at a given time and the allocation of time between educational and cultural fare and entertainment. Time allocated to television by everyone has been very similar across societies and sites despite considerable variation in the number of available channels, hours of operation, and the diversity and emphases of programming (Comstock et al., 1978; Robinson & Godbey, 1997). For example, when a single government-sponsored channel was introduced to a remote British Columbia community, viewing patterns in terms of amount quickly came to resemble those of a similar community that had long had access to five channels—two Canadian and three American networks (Williams, 1986). And when the school day was cut in California for fiscal reasons, children's viewing sharply increased with no change in television schedules (Robinson & Godbey, 1997).

However, the degree to which a national television system resembles that of the United States, with its comparative lack of a prescriptive paternalism in regard to how the public should be served and its reliance on advertising for support, is an important determinant of the emphasis of the medium on entertainment and the availability of educational and cultural programming that young people might view. While readiness to adopt new technology has increased access to television and other screen media, diversity is somewhat suppressed by the competition that makes entertainment the most effective means to attract audiences of interest to advertisers. The result is that there may not be much in the way of educational and cultural fare for children to view as they grow older (Hamilton, 1998; Huston et al., 1990). Thus, societies that impose more demanding standards of

public service are likely to offer more options to young people for viewing television that might have some constructive influence.

Governmental and regulatory practices also influence what is available. Thus, in the 1990s, the demands in the United States made by Congress and the FCC for more educational and cultural programming as a condition of retaining a broadcast license led to the production of much new programming that would meet these requirements.

Finally, as exemplified by the past decade in the United States, technological developments constitute a major influence. New technology in dissemination (satellites and cable) has been important in the longer term, but in the past few years viewing of television content has been driven by new media that are particularly adaptable to multitasking by individuals.

We originally divided the history of television in the United States into three periods (Comstock & Scharrer, 1999). The *introductory* period between the late 1940s and the end of the 1950s saw the widespread diffusion of the medium and essentially the emergence of the television we know today; *equilibrium*, from the early 1960s through the 1970s, was the era of dominance by the three networks (ABC, CBS, and NBC), with limited diversity of channels and programming in communities and homes; what we called *transition*, beginning with the 1990s, saw the breakup of the established pattern with greater diversity of choice by new broadcast outlets, cable, new channels, and in-home recording and playback. We would now divide this third stage into *emergent diversity*, beginning with the 1990s and extending through about 2005, and *technological elaboration*, beginning in about 2005. The shift is documented across the three Kaiser surveys, where personal devices and alternative screens by 2009 (compared to 1999 and 2004) importantly amplify access to television content and significantly increase viewing. Our intent is to recognize the current wave of new technology in making content more available across places and times as a new era.

#### *Household Attributes*

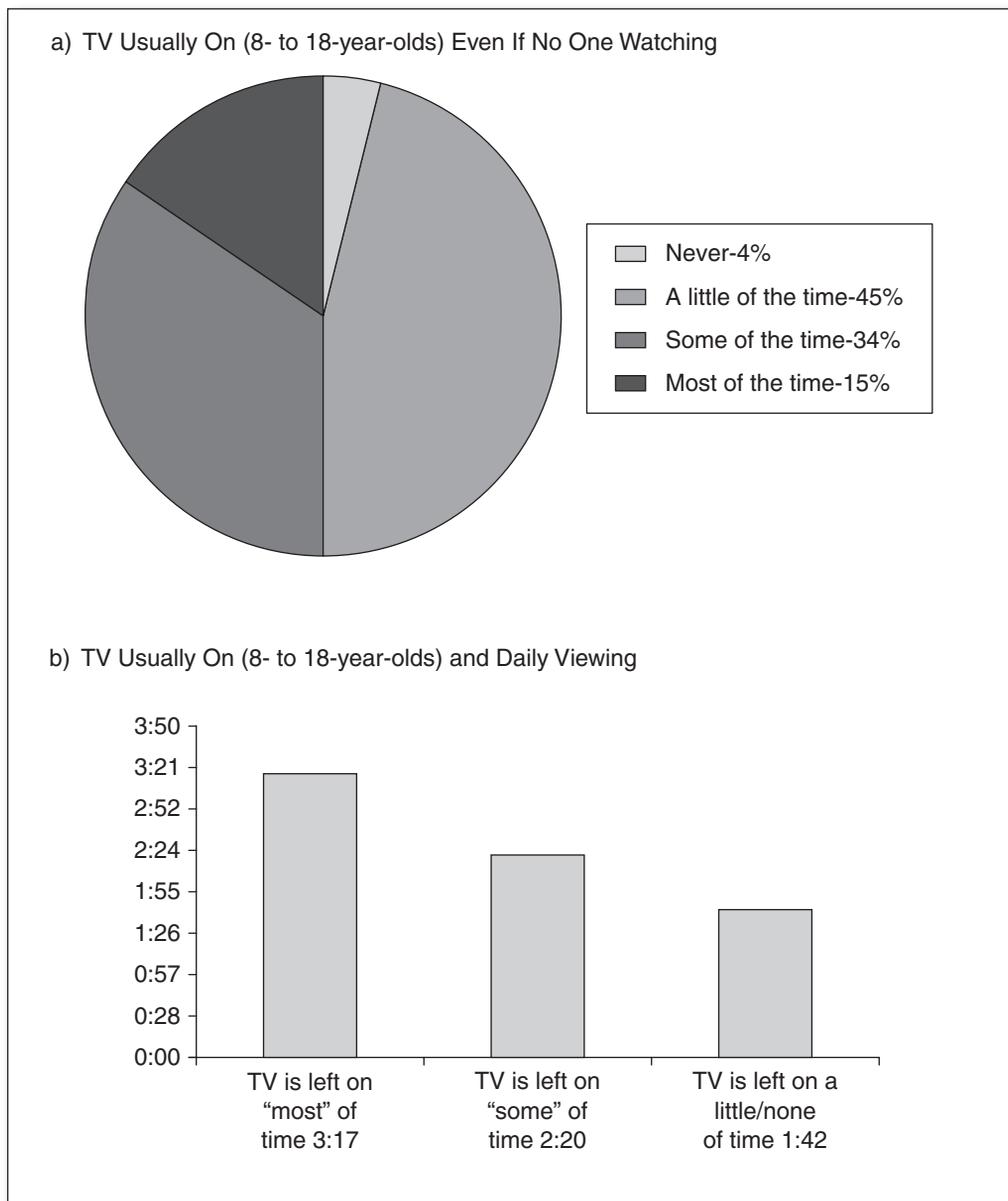
The four principal household variables that influence the amount of exposure to television content by young people are norms for media use, socioeconomic status, race, and

resources available. However, family research also indicates that the general attitudinal and communicatory atmosphere established by parents makes some difference.

Norms favoring heavy use of television (e.g., the absence of rules specifying when viewing is appropriate and a television set constantly operating) are associated with greater viewing by young people in households that otherwise are apparently comparable

(Comstock & Scharrer, 1999; Medrich et al., 1982; Rideout et al., 2010). Fewer than half of parents say they often impose rules about how much, when, and what programs may be viewed (Bower, 1985; Rideout et al., 2010), although this figure is somewhat higher for younger children and declines with age. Viewing is inversely associated with socio-economic status, with education a more powerful predictor than income, and is greater in

**Figure 1.4** Centrality of Television in the Home



Black and to a lesser degree in Hispanic households than in White households (Anderson, Mead, & Sullivan, 1986; Blosser, 1988; Comstock, 1991; Comstock et al., 1978; Comstock & Scharrer, 1999; Medrich et al., 1982; Rideout et al., 2010). Norms favoring screen media use and Black or Hispanic ethnicity are inversely associated with socioeconomic status, but each (socioeconomic status, Black and Hispanic ethnicity) independently predicts greater or lesser viewing.

The governing role of time availability obviously imposes a ceiling on the effects of this greater centrality of television, but they are nonetheless substantial in both the short and long run. Our estimate about three decades ago from the sample of 750 sixth-grade children examined by Medrich and colleagues (1982) is that a pervasive, unrestricted use of television in the household led to about 20% more television use by children (Comstock, 1991). This factor is even more important today, for the most recent Kaiser Foundation survey (Rideout et al., 2010) records viewing among those 8 to 18 as about an hour greater when “TV is left on ‘most’ of the time” (see Figure 1.4, p. 33). Similarly,

Rosengren and Windahl (1989) found in Scandinavia that the amount of viewing of a sample of 11- and 13-year-olds was directly correlated with the amount of parental use. This parental endorsement has long-range implications because the amount of viewing by teenagers was predicted by much earlier amounts of parental viewing (Rosengren & Windahl, 1989), and the amount of viewing by young adults was predicted by the amount of parental viewing when they were growing up (Kenny, 1985).

Resources in the household make a major contribution. Multi-sets, available in almost 90% of households, mean that young people more often will view alone or with other young people and more often will choose their own programming. Almost three fourths (71%) of those 8 to 18 were recorded as having a television set in their bedrooms in the most recent Kaiser survey (Rideout et al., 2010), as well as an array of other platforms (see Table 1.6). Media of all types in the household promote their use by the young (Roberts & Foehr, 2004). Media availability in the bedrooms of the young is associated with much greater viewing of television content.

**Table 1.6** TV Usually On (8- to 18-year-olds) and Daily Viewing

(% 8- to 18-year-olds)			
	YEAR		
<i>Medium</i>	2009	2004	1999
Radio	75% <sup>a</sup>	84% <sup>b</sup>	86% <sup>b</sup>
TV	1% <sup>a</sup>	68% <sup>ab</sup>	65% <sup>b</sup>
CD player	68% <sup>a</sup>	86% <sup>b</sup>	88% <sup>b</sup>
DVD or VCR player	57% <sup>a</sup>	54% <sup>a</sup>	36% <sup>b</sup>
Cable/satellite TV	49% <sup>a</sup>	37% <sup>b</sup>	29% <sup>c</sup>
Computer	36% <sup>a</sup>	31% <sup>b</sup>	21% <sup>c</sup>
Internet access	33% <sup>a</sup>	20% <sup>b</sup>	10% <sup>c</sup>
Video game console	50%	49%	45%
Premium channels	24% <sup>a</sup>	20% <sup>b</sup>	15% <sup>c</sup>
TiVo/other DVR	13% <sup>a</sup>	10% <sup>b</sup>	~
Statistical significance ( $p < .05$ ) across rows indicated by non-matching subscripts.			

Source: Rideout, Foehr, and Roberts (2010).

DVRs or VCRs, available in about 85% of households, mean that the young will view more movies and have easier access to those carrying restricted labels. In-home recording for later playback sees very little use among the young—fewer than 10 minutes a day (see Table 1.4) out of the almost four and a half hours of consuming television content and greater viewing alone. How much and what is viewed shift with personal preference.

Parental communication practices also affect a young person's media use. Lack of interaction with parents in the home as a result of the out-of-home employment of mothers or the absence of fathers is associated with more time spent viewing among adolescents (Brown, Childers, Bauman, & Koch, 1990). Left alone, the young turn to media. An emphasis on communication and discussion rather than prescription and the exercise of power in the disciplinary practices of parents demonstrably has been associated with an impressive list of positive outcomes—greater viewing of programs portraying constructive behavior (Abelman, 1985); the providing by parents of supplementary information and evaluation in connection with programs (e.g., geographical, historical, or scientific facts; moral implications; the make-believe aspects of stories; see Messaris & Kerr, 1983); and improved comprehension on the part of the child (Singer et al., 1988).

Encouraging the expression of opinions and the exchange of ideas in the household increases as a child grows older (Meadowcroft, 1986), presumably because many parents believe this is a province for the more mature. Such encouragement has been associated with less total television viewing, greater print use, greater instrumental use of the medium, and higher levels of news consumption among young people (Chaffee & McLeod, 1972; Chaffee, McLeod, & Atkin, 1971). When the emphasis was on maintaining social harmony without an accompanying emphasis on expression and opinion, total viewing was greater, entertainment viewing was higher, and news consumption was lower. When expression and opinion were also emphasized, the heightened viewing of both television in general and entertainment specifically vanished, and news consumption was enhanced. In our view, these data overall identify the communication atmosphere

established by parents as an important factor in the development of constructive, instrumental use of media in which entertainment is somewhat diminished (but of course—for most young viewers—remains predominant).

### *Personal Attributes*

Four major child or person variables affect viewing, with almost all of the data representing television. They are age, mental ability, comprehension, and innate affinity for viewing.

The amount of viewing increases during the elementary school years, reaching a peak between 11 and 14 (see Figure 1.1). Then it declines as the greater obligations, opportunities, and time outside the household during the teenage years suppress the amount of time spent with screen media (Comstock & Scharrer, 2007; Roberts & Foehr, 2004).

Mental ability among children has been consistently inversely associated with television use (Gortmaker, Salter, Walker, & Dietz, 1990; Schramm et al., 1961), but only very modestly so (Lyle & Hoffman, 1972a)—and this negative association has been growing smaller with the passage of time (Comstock & Scharrer, 2007). The decline has been the result of changing norms, which have made television use more acceptable among almost all young people and in most households. The modest size reflects a somewhat paradoxical pattern. Very bright children, when young, are often enthusiastic users of television as well as other media. In the past, they turned toward print at an earlier age and to a more pronounced degree than their peers (Comstock & Scharrer, 2007; Schramm, et al., 1961). Today, this shift toward media that are more informational, sometimes more demanding of intellect and emotion, and often more exploratory of events and people presumably would embrace, in addition to print, the Internet and various television channels and video sources that rest on technological developments. Thus, the modest size of the relationship masks a more complex process in which young people are pursuing somewhat different paths in media use as a consequence of mental ability—some toward greater involvement and information and others toward greater entertainment.

Comprehension plays little role in the amount of television use in total, as is clear

from the many hours spent viewing by those too young to fully understand all that is taking place. However, as we have observed, it plays a large role in the degree of attention actually given to the screen and therefore in the amount of viewing as a primary activity. Attention rises as children need to pay closer attention to understand the narrative (see Figure 1.3), then declines as greater knowledge about subject matter and the conventions of the medium make close attention less necessary for understanding.

Children (and presumably those older) also differ in the degree to which television use (and possibly use of other screen media) is innately gratifying. Plomin, Corely, DeFries, and Fulker (1990), using the widely recognized methodology for separating genetic from environmental influences among a sample of 220 children ages three, four, and five (and their siblings and adoptive and natural parents) in the well-known Colorado Adoption Project (Plomin & DeFries, 1985), found that amount of television viewing was a product of both heredity and environment. Our tentative interpretation is that television is inherently pleasurable, which would help explain why set use is so similar across societies, and that the degree of innate gratification has a basis in the degree of pleasure derived from alpha waves, or holistic, nonverbal, affective right-brain processing (Comstock & Scharrer, 1999; Krugman, 1971; Rothschild, Thorson, Reeves, Hirsch, & Goldstein, 1986), and this would vary genetically among individuals.

### *Situational Influences*

We divide situational influences into three categories: the presence of others, temporal factors, and mental states. The first covers the role of parents and other young persons; the second, the hour of the day, day of the week, and the season; and the third, stress, psychological discomfort, and the desire to relax or be entertained.

A young person's attention to the screen will vary with the attention given by others in the room (Anderson, Lorch, Smith, Bradford, & Levin, 1981). This social cue joins audio and visual cues in governing responses to the screen. Parents and other children also will increase viewing by a particular child in the

short run by turning on a set and thereby placing the child in the role of a viewer.

Temporal influences are quite marked (Comstock & Scharrer, 1999; Robinson & Godbey, 1997; Webster & Phalen, 1997). There is a day cycle in which children's viewing rises in the afternoon and continues through prime time, with a peak at about 8:30 p.m. for those younger (two to five) and at shortly before 9 p.m. for those older (6 to 11). The younger children view at a higher rate in the early morning and early afternoon. There is a week cycle, with children's viewing at its highest on Fridays and Saturdays when there is no school the next day; this is in contrast to young adults (and older teenagers), whose viewing is at a minimum on these two days because of competing social and entertainment options. There is also seasonal variation, with children's viewing higher during the summer when school is out.

Children cite television as a favored activity to relax, to be entertained, and to fend off loneliness (Comstock & Scharrer, 2007; Lyle & Hoffman, 1972a). Young people more generally have consistently been found to use screen media more when in states of stress, conflict, or psychological discomfort (Comstock & Scharrer, 1999, 2007). There is also evidence that young women in particular use comedy and drama to alleviate feelings of anger, while young men may bolster hostile responses and aggravation by turning to violent entertainment (Zillmann, 1988; Zillmann & Bryant, 1985). Thus, mood affects how much and what is watched.

### *Developmental Processes*

If we take the initial hours of viewing before the age of three and peak levels reached between the ages of 11 and 14, the process from attending to imagery with very limited meaning to viewing in an adult mode—if not with the tastes of an adult—covers about nine years. How much young people view is primarily a function of the time they have available without obligations or preferred alternatives. What they view with comprehension and interest changes as they grow up. Cartoons and cartoon-like storytelling swiftly give way to situation comedies. Attention rises as more information is

needed for comprehension; the medium becomes more central, as does ritualistic viewing, as the opportunity to view favorite programs decreases.

Household characteristics and child attributes affect changes in the amount of viewing and in the division between ritualistic and instrumental use as young people mature. Households lower in socioeconomic status and households higher in television centrality will have greater viewing by children and less instrumental use as specific content takes a decidedly subsidiary place to the pleasures of monitoring the most satisfactory of available options. Early instrumental use as exemplified by viewing children's educational programs (of which the best known has been *Sesame Street*), which often will have been the product of thoughtful parental guidance, will lead to less total viewing and greater instrumental viewing when the child becomes a teenager (Rosengren & Windahl, 1989); this is another example of the important role of household characteristics in the media behavior of young people and why the environment established by parents has long-range consequences for their children. Foremost among child attributes is mental ability, with those more cognitively capable in the past making comparatively greater use of print and at the present time using print and Internet information sources more as they grow older.

Comprehension is also an important factor. Up to about six years of age, greater attention to the screen—which, in our view, represents involvement—is largely confined to cartoons and other children's programs (Bechtel et al., 1972). Then attention increases for television in general up to about age 10 as the narratives of adult programs requiring greater attention for understanding become of interest; attention to the screen then begins to decline as children have begun to achieve an adult relationship with the medium (Anderson et al., 1986). This peak essentially coincides with ages seven to nine, when children move from Piaget's preoperational to his concrete operational stage and become more able to understand subtleties of plot and character and place comparatively greater emphasis on meaning and verbal elements than appearances and action. Prior to this time, visual elements play a larger role, although one that is decreasing

with age; children are more perceptually bound and guided by what can be seen rather than inferred (Comstock & Scharrer, 2007). However, much of television—in terms of interpreting its narratives—becomes understandable with a little effort before this transitional period (Wolf, 1987), which explains why the curve representing attention to the screen presented by D. R. Anderson and colleagues (1986) rises stoutly beginning at age five. Similarly, children's viewing of favorite programs will peak and decline as there is reduced opportunity, as with teenagers and adults, to view their favorites; at the same time, the amount of viewing in a less attentive way—what we have called monitoring—will continue to increase up until about the age of 12 (Comstock, 1991).

The national television system influences how much of this experience is likely to be entertainment or to have some cultural or educational value. Programming of the latter sort is more prevalent when reliance on advertiser support is less and the triumvirate of nonpaternalism, competition, and entertainment that characterizes American television is restrained (Comstock, 1989).

Movies played a very minor role in the lives of children with television in the 1960s and 1970s. Then modern marketing, with its multiplexes and the VCR, returned some popularity to movies. For example, Lyle and Hoffman (1972a), in their survey of 1,600 1st, 6th, and 10th graders found that, even by the 6th grade, the average amount of time allocated per week to watching movies (other than those shown on broadcast television) was less than 20 minutes, and only 15% had seen a movie at a theater during the past week. This is in sharp contrast to the heyday of American movie-going. We estimate that focused marketing and the VCR have increased this figure significantly (Comstock, 1991). Currently, those 8 to 18 spend about 25 minutes per day on average at the movies, or about three-and-a-quarter hours a week (Rideout et al., 2010). DVDs account for about another half hour, or three-and-a-half hours per week, for total movie exposure of approximately 6 hours 45 minutes a week. The developmental significance is that the VCR, and now the DVD, gives young people access to movies, which are more emotionally

and psychologically involving than much of television and may, for older children and teenagers, include titles with restricted labels.

### *Cross-Cultural Comparison*

Von Feilitzen (1999) collated A. C. Nielsen people meter data on television viewing by children and teenagers in 10 countries.<sup>1</sup> Groebel (1999) summarized a survey of use of major media among more than 5,000 children who were 12 years of age in 23 countries.<sup>2</sup> Livingstone, Holden, and Bovill (1999) surveyed media use by more than 15,000 children and teenagers in 11 European countries<sup>3</sup> and Israel.

The most indelible impression is the degree to which television use by young people is much the same in all countries. In developed countries, access (households with television) approaches 100%, and the amount of viewing (which excluded most secondary and tertiary use) was about two hours or more per day. Even in less developed regions, access registered at more than 80% of households. Television can be fairly described as the universal medium.

The second most noticeable pattern is the frequency of differences in use of media other than broadcast and cable television. For example, in the 12-country data collected by Livingstone and colleagues (1999), the amount of time spent reading books differed from a low of 14 minutes per day in Flanders to a high of 35 minutes per day in Finland. As Livingstone and colleagues pointed out, some differences reflect marketing and technological developments (e.g., a great variety of cable offerings that would suppress rental video viewing), while others reflect cultural differences in norms, tastes, and preferences.

### *Changes*

There have been significant, documented changes in the past decade in the consumption by the young of television and other screen media. These reflect important technological developments that have affected what is available to view, how much is viewed, which media platforms are used to access screen media, and how these platforms are used.

The basic contours of growing up have been highly stable. Children mature as they

always have, and in the case of television and other screen media, they acquire the cognitive skills to use these media as they grow up. They enjoy (as well as benefit from) free play, and so it continues to occupy a major place in the allocation of time among young children. Teenagers pursue a social life outside the home, and so movie-going remains a modest but persisting factor in time use. Young children are perpetually drawn to the color and action of animated cartoons; teenagers desert them almost entirely in favor of comedy and drama that rest to a greater degree on the understanding of motive and character. Screen media use goes up and down with available time. These are all essentially permanent pillars of childhood and adolescence around which media become arrayed.

A pervasive change in television and other screen media is the growth in the variety of programming available. Earlier, this greater diversity could be traced to large increases in available channels: new stations, new networks, cable systems, premium cable channels, pay-per-view, and in-home recording with VCRs. In recent years, this trend has continued, with the DVR somewhat replacing the VCR. Video remains a staple, now replayed on DVDs. The major recent change, however, is that these sources are now available on numerous new platforms.

Screen media use is up dramatically. The present 4 hours 45 minutes per day (for those 8 to 18) is an extraordinary figure when compared with the 3 hours 7 minutes estimated by these authors in the first edition of the present volume.\* A major and probably surprising change is not only the diversity of platforms employed to view television content (see Table 1.5), but the use of platforms beyond imagination a decade ago—the cell phone, iPod or MP-3 player, and the Internet—that now account for almost an hour of daily exposure to television content and fairly could be said to be responsible for much of the increase in screen media use. The result is that the viewing of live television—the term employed in one survey (Rideout et al., 2010) to refer to programs on the screen of a TV set—is down by 25 minutes compared to 2004, while total exposure to television content has increased.

\*Note: Our 1999 estimate was for those 2 to 11 years of age. However, this results in an underestimate of the changes since then because teenagers (12–17) at that time viewed markedly less than those younger.

The stunning amounts (and we think this term connotes the proper respect) of media use and exposure (see Table 1.4) have been made possible by the use of more than one medium at a time. Between 1999 and 2009, this practice of media multitasking increased from 16% to 29% of all media exposure. The same practice has allowed computer use and video game playing to increase (see Table 1.4) without a decrease in exposure to television content.

Technology and multitasking have increased exposure to screen media, but time available remains the major factor in amount of viewing. Viewing is governed largely by the time available (but not wholly; specialized content not fungible with most programs may draw a few viewers who otherwise would not be viewing television at that time). These two factors should probably be thought of as expanding time available by convenience (technology) and by more efficient deepening of use (multitasking).

One consequence of these changes is that young people more easily may view adult content or confine viewing to one type of content. Nevertheless, at present in the United States, the amount of programming in which young people can take an honest interest as well as derive some pleasure and an enriching experience is vast compared with past decades, as is the amount of time they spend with such programming.

## Notes

1. Argentina, Australia, Chile, the Czech Republic, Lebanon, the Philippines, South Africa, South Korea, Spain, and the United States.

2. Angola, Argentina, Armenia, Brazil, Canada, Costa Rica, Croatia, Egypt, Fiji, Germany, India, Japan, Mauritius, the Netherlands, Peru, the Philippines, Qatar, South Africa, Spain, Tadjikistan, Togo, Trinidad and Tobago, and Ukraine.

3. Denmark, Finland, Flanders/Belgium, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, and the United Kingdom.

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