HANDBOOK OF
CHILDREN
AND THE
MEDIA

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For every new communication medium that has appeared and spread widely, people have expressed concerns regarding the effects of the medium, especially on children and young adolescents. In the 1920s and 1930s, when motion pictures matured into a major mass medium and moviegoing became a national pastime for family entertainment, questions were raised and charges were made about the possible harmful effects on children. This led to the Payne Fund studies, a scientific assessment of the effects of movie viewing on children and youth in the late 1920s (Gruenberg, 1933). When television sets diffused rapidly into American households, the same concerns resulted in a series of studies in the late 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 a federal inquiry in the 1970s (Surgeon General’s Scientific Advisory Committee, 1972) and 1980s (Pearl, Bouthilet, & Lazar, 1982). More recently, with the increase in the purchase of video games and in response to the amount of time children and young adolescents spend on the Internet, the same concerns are driving studies on the social impacts of such interactive communication media (Turow, 1999).

Before one can begin to understand the role that each medium plays in children’s and early adolescents’ lives, it is important to know what each medium is and how it is used. To that end, some of the basic questions that must be considered are as follows: When was the medium invented? How did the medium distribute across society? And what happened to other existing media when the new medium was first introduced? As for how each medium is used, the questions include who watches, how much, when, what programs, why, how, and with whom?

In this chapter, some basic facts are presented about the history and children’s use of electronic media—movies, radio, television (including cable television), and interactive...
media (e.g., computers, video games, educational software, and the Internet)—in the United States. (Audio recorders, videocassette recorders, compact discs, and so on are discussed in later chapters.) Each medium will be considered in a chronological order—when it was first invented or when it became mass communication. Although this strategy is simple and conventional, it must be followed with the understanding that each successive new medium does not replace the previous communication media. For example, in today’s “new media environment,” many “old” media coexist with “new” media. As such, the discussion will also involve how each new medium has affected the role played by the existing media. Furthermore, given the richness of the history and use of each medium, it is simply impossible to do justice to any of the examined media in the limited space of a single chapter. Therefore, the interested reader is simply referred to the later chapters in this book for a more thorough consideration of each medium and of the various issues surrounding them.

Movies

Early Development

It is reasonable to state that film was the first mass medium that appeared on the social scene. Although in its early years there was little about the film technology that could be considered electronic, it is fair to classify the current design as one of the electronic media. Several major discoveries and technological innovations from 1824 to 1896 led to the development of the cinema. They included a better understanding of the human perceptual system and of the persistence of vision and the development of photography, which in turn led to the invention of the motion picture camera and projection techniques.

At first, cinemas were simply pictures that appeared to move, such as horse races, various versions of Niagara Falls, and fire engines racing down a street. It was in 1903 that Edwin S. Porter, in his film *The Great Train Robbery*, introduced the two elements of story and editing, and it was not until 1915 when D. W. Griffith used sophisticated shooting of scenes and editing in his film *Birth of a Nation* that cinema techniques showed maturity. By the time of World War I, film became widely accepted as a means of family entertainment, and in the mid-1920s, continued technical improvements were made to keep up with the competition from radio. By the end of the decade, almost all films were “talkies,” making them even more attractive.

In 1926, the average weekly movie attendance was 60 million, and in 1929 it reached 95 million (see Figure 1.1). Attendance (and profits) began falling in the depression years only to climb back up to 85 million in 1936, holding relatively steady throughout World War II. During the 1940s, going to a movie was just as much a part of American life as watching television is today. The dramatic change came in 1947, and movie attendance plummeted to its lowest level in 1971. Although attendance has been slowly creeping up, the increase has been insignificant in comparison with the gigantic drop preceding it.

The two significant drops noted in Figure 1.1 are associated with numerous factors. However, the dates of these drops—1930 and 1946—coincide with the dates at which radio and television, respectively, made their pronounced appearance on the media scene. It is interesting that the first drop in movie attendance was quickly reversed in just a few years, while the second drop (mostly due to television) has been a great deal slower in its recovery, increasing only moderately over a period of some three decades.

Children and the Movies

Following the introduction of sound technology, the notion of the cinemas for children began to crystallize. However, many talking
pictures were seen as too mature for children in terms of language and theme. Thus, the practice of separate viewing for children on selected or recommended films began, usually on Saturday mornings or early afternoons. This was initiated by a sense of social responsibility, in conjunction with commercial reasons (Bazalgette & Staples, 1995). Even though through these matinee screenings the movie theaters were able to get an audience at a time when they would otherwise be idle, the industry soon learned that producing films for children was unprofitable. Instead, the industry exerted its efforts in developing a new genre, the family film, attracting both adults and children. In 1937, Walt Disney released *Snow White and the Seven Dwarfs*, the first animated feature-length film in color and with music, which appealed to large audiences of all age groups and social classes. Besides animated features, films such as *Little Miss Marker* (1934), *The Wizard of Oz* (1939), and *Lassie Come Home* (1943) attracted a wide range of family audiences.

In 1929, the average child was attending 1.6 movies per week (Cressey, 1934), but that number differs widely considering age and gender. In particular, adolescents attended movies more frequently than younger children. Dale (1935) indicated that early-elementary-school-age children attended the movies roughly two times a month (or 0.5 times a week), whereas high school and mid- and upper-elementary-school students at-

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Weekly Attendance (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1926</td>
<td>1.6</td>
</tr>
<tr>
<td>1938</td>
<td>8.2</td>
</tr>
<tr>
<td>1950</td>
<td>6.0</td>
</tr>
<tr>
<td>1962</td>
<td>3.0</td>
</tr>
<tr>
<td>1974</td>
<td>1.0</td>
</tr>
<tr>
<td>1986</td>
<td>0.5</td>
</tr>
<tr>
<td>1998</td>
<td>0.2</td>
</tr>
</tbody>
</table>

*Figure 1.1. Movie Attendance, 1926-1998*

tended once a week. This is consistent with Charters's (1933) study in which older children 8 to 19 years old were found to attend movies more than twice as frequently as younger children 5 to 8 years old. Furthermore, these studies found that boys attended movies more than girls did.

The attendance patterns have changed in more recent times. The data for Table 1.1 are from The Kids Study, by Simmons Market Research (1995), based on 2,118 children 6 to 14 years old. Unlike earlier data, Table 1.1 shows that girls are more frequent moviegoers than boys. As for age dependence, the results depend on the frequency of moviegoing itself. In general, 9- to 11-year-olds go to movies more frequently than both younger (ages 6-8) and older (ages 12-14) children; this pattern applies to both genders. However, among the frequent moviegoers (i.e., two or more times in the last 30 days or five or more times in the last 90 days), attendance increases with age for both boys and girls. The attendance pattern becomes further convoluted when different program types are taken into account. (In order to keep the chapter focused and contained, other variables such as race, socioeconomic status, family background, and so forth will not be considered.)

Program Preferences

According to a study by Witty, Garfield, and Brink (1941), in the early days, teenagers favored comedy and mystery-type films. Girls also favored love stories, whereas boys showed a stronger liking for westerns and newsreels. Older children liked educational features and newsreels more than younger children did. A decade later, Lyness (1951) reported similar findings. Lyness examined whether preferences for particular movie types depended on gender and age. He studied 5th-, 7th-, 9th-, and 11th-grade boys and girls. Results showed a gender difference in favored program types but a more stable preference across different age groups. Overall, boys liked western, war, comedy, and adventure program types, while girls favored a somewhat different list, namely, comedy, musical, and love and romance program types. For the youngest in the study (fifth graders), both boys and girls preferred cartoons, comedy features, and westerns. However, starting from grade 7, program preferences between boys and girls were very different. Boys started favoring adventure programs and continued to favor war and western movies, whereas girls began to prefer musicals and love and romance movies. Interestingly, but perhaps not surprising, program preferences did not change significantly when radio made its appearance.

Radio

Early Development

Radio developed out of scientific advances made in the field of electricity and magnetism. In 1897, Guglielmo Marconi received a patent for wireless telegraphy, the beginning of radio. In 1919, Marconi sold his American subsidiary to General Electric, which became Radio Corporation of America. In 1920, KDKA in Pittsburgh went on the air, hoping to sell radio receivers. After a slow start, sales of radios reached about a half million in 1924. Soon advertisers realized that, unlike movies, radio offered them direct access to the homes of the listeners, and it could be used to promote products. Stations began selling airtime, and radio broadcasting became a revenue-producing business (Barnoux, 1967). To increase their profitability, groups of stations began working together, sharing the costs of a program and broadcasting the same show on several member stations. This arrangement between stations became known as a network and persisted into the television era. In the 1930s and 1940s, radio flourished, and entire families could be found sitting by their radios, enjoying their favorite shows and news.
TABLE 1.1 Demographic Breakdown of Children, Who Went to Movies Within the Last 90 Days

<table>
<thead>
<tr>
<th>Age Group</th>
<th>% Went to Movies in Last 90 Days</th>
<th>% Went to Movies 3+ Times in Last 90 Days</th>
<th>% Went to Movies in Last 30 Days</th>
<th>% Went to Movies 2+ Times in Last 30 Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kids 6-14</td>
<td>69.5</td>
<td>24.7</td>
<td>57.6</td>
<td>37.1</td>
</tr>
<tr>
<td>Boys 6-14</td>
<td>66.1</td>
<td>21.8</td>
<td>55.5</td>
<td>34.2</td>
</tr>
<tr>
<td>Girls 6-14</td>
<td>73.1</td>
<td>27.8</td>
<td>59.8</td>
<td>40.1</td>
</tr>
<tr>
<td>Kids 6-8</td>
<td>65.9</td>
<td>20.1</td>
<td>52.0</td>
<td>30.3</td>
</tr>
<tr>
<td>Kids 9-11</td>
<td>75.2</td>
<td>25.9</td>
<td>60.6</td>
<td>36.8</td>
</tr>
<tr>
<td>Kids 12-14</td>
<td>67.7</td>
<td>29.2</td>
<td>60.2</td>
<td>44.1</td>
</tr>
<tr>
<td>Boys 6-8</td>
<td>60.8</td>
<td>19.1</td>
<td>48.3</td>
<td>28.9</td>
</tr>
<tr>
<td>Boys 9-11</td>
<td>72.1</td>
<td>22.1</td>
<td>58.1</td>
<td>30.7</td>
</tr>
<tr>
<td>Boys 12-14</td>
<td>65.8</td>
<td>25.1</td>
<td>60.1</td>
<td>42.7</td>
</tr>
<tr>
<td>Girls 6-8</td>
<td>71.4</td>
<td>22.1</td>
<td>56.0</td>
<td>31.6</td>
</tr>
<tr>
<td>Girls 9-11</td>
<td>78.5</td>
<td>29.9</td>
<td>63.2</td>
<td>43.2</td>
</tr>
<tr>
<td>Girls 12-14</td>
<td>69.7</td>
<td>31.6</td>
<td>60.2</td>
<td>45.6</td>
</tr>
</tbody>
</table>

SOURCE: Simmons Market Research (1995); used with permission.
NOTE: Sample size = 2,118.

The growth of radio ownership is shown in Figure 1.2. It shows that, by 1930, 46% of American households had a radio, and 10 years later that number had grown to more than 80%. By 1970, radio ownership had already reached 98%, nearly to the current ownership rate (99%). Of course, one may question the appropriateness of radio ownership as a measure of radio’s popularity, for it is entirely possible that a great many radios simply sat unused, collecting dust. However, as seen from Figure 1.2, the increase in ownership is matched by a comparable increase in the number of radio stations; presumably, this reflects a growing market meeting the demands of the public. As such, it is reasonable to state that radio’s popularity has been steadily rising since the time of its inception. It is then interesting to contrast the steady growth of radio’s popularity with the complex and tumultuous pattern of movies’ popularity (Figure 1.1); evidently, the popularity of radio has been mostly unaffected by the forces that affected movies.

Radio and Children

Radio programs for children have changed from being an integral part of everyday life to a relatively small segment within the children’s entertainment media. Early radio programmers recognized the popularity of children’s programs by designating a specific time, usually 5:00 to 6:00 P.M., for “children’s hour.” The popularity of these programs brought an increase in the number of programs designed for children. For instance, in the New York City area, programs for children increased from 3 in 1928 to 52 by 1934 (Eisenberg, 1936; Jersild, 1939).

In the mid-1930s, children 9 to 12 years old listened to radio approximately 2 to 3 hours a day (DeBoer, 1937; Jersild, 1939). Lyness (1952) surveyed third-, fifth-, seventh-, ninth-, and eleventh-grade students in 1950 who lived in cities that had newspapers, radio stations, and movie theaters (but no television yet). All the children, except third-grade boys, named radio as their most frequently engaged in
activity at home in the evening. Overall, for girls time spent listening to radio increased with age, while for boys it decreased after the peak around fifth or seventh grade.

Even when television became the main mass medium, the amount of time that children and young adolescents spent listening to radio was very similar to earlier radio days. Confirming radio's consistent listenership, Lyle and Hoffman (1972) report that, even when television was the most favored medium, among their subjects, half of the first graders and 80% of the sixth graders reported listening to radio on the preceding day. Furthermore, 24% of tenth graders reported listening 5 hours or more a day. This study shows that, regardless of television's dominance, at least children were still enjoying radio. Brown, Childers, Bauman, and Koch (1990) confirmed Lyle and Hoffman's results (listening to 5 hours of radio daily) from 2,056 children 12 to 14 years old. Furthermore, they found that, with increasing age, more time was spent with radio and less with television.

Such a heavy use of radio among adolescents exists even in present times, and it has been explained by many as providing teenagers with acceptable social cues; as giving them something of interest to discuss with
their friends (Brown, Eicher, & Petrie, 1986); as an important source for socialization (Adoni, 1979; Mendelsohn, 1964); and even as a way of rebellion against parental norms and a search for identification with peers rather than with adults (Golinko, 1984). Regardless of the explanations, it appears that television did not significantly affect (and has not affected) the time children and adolescents spent with radio.

**Program Preferences**

In 1937, Clark (1939) obtained data from children 9 to 18 years old on their radio-listening patterns. The study showed that whether children listened to a program was largely determined by the broadcast time of the show. Programs aired at evening hours during weekdays were the most frequently mentioned programs. Regarding the programs aired in those hours, girls 15 to 18 listened more to romantic and historical dramatizations than boys of the same age; boys listened more than girls to dance, popular, and novelty programs. With the increase of age, both boys and girls showed less interest in and greater dislike for children's programs. It was clear, then, that, within a given broadcast time, age and gender influence the degree of preference for certain types of content.

Another study by Lyness (1951) also showed a slight gender and age difference in program choice. The two most preferred program types were comedy and mystery plays for both boys and girls of all ages (except for fifth-grade boys, whose first choice was western shows). The gender difference appeared at the third most preferred program type: Girls preferred drama and music, while boys enjoyed adventure shows and sports. The age difference within each gender was also at the level of the third most preferred program type: For girls, fifth through ninth graders enjoyed drama, while eleventh graders preferred music. For boys, the third most preferred program type was adventure shows for fifth graders; sports for seventh and ninth graders; and music for the eleventh graders.

By the early 1950s, as television was becoming a major threat to radio, radio lost much of its drama and comedy programming to television. This led the radio programmers to shift their emphasis to music programs, with a few features, a little news, and commercials. These programming changes were well received by children. Christenson and DeBenedittis (1986) asked first through fifth graders why they liked to listen to radio. More than 83% gave a response that referred to the musical content of the medium, and only 25% referred to seeking information. In their study, no significant gender or age difference in gratification was found.

More recently, in 1993, Arbitron conducted a special diary pilot study to measure radio-listening habits among 2- to 11-year-olds and adults in their households (Patchen, Burgess, & Cralley, 1994). It was found that, in addition to children's programs, children listened to other programs such as news/talk, country or album rock, and even oldies. The study speculates that some of these programs are not the child's choice but that of their parents. In fact, these were programs heard in the car while driving. The finding is similar to what Clark (1939) had found earlier: Program choices are often not determined by any program or listener attribute but, rather, by the time (and location) of listening.

As for gender differences in contemporary times, Wells and Hakanen (1991) found a gender difference in gratification. They found that female teenagers made greater use of music for mood management (mood enhancing or tranquilizing) than their male counterparts. For males, the most highly rated function of radio was to get excited. This is very similar to the findings of Larson, Kubey, and Colletti (1989), who found that males listen to music that excites them, while females prefer ballads and love songs. The authors speculated that such needs (getting excited) are leading teenage boys to turn away from radio to other alternative sources for defiant rock music. If
true, that would imply that teenage girls use radio more than teenage boys do; in fact, that implication has been confirmed by many, including Carroll and colleagues (1993).

**Television**

**Early Development**

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. Close to 3 years after radio broadcasting became a reality in 1920, a primitive version of an all-electronic television system was available. In 1928, telecasting began on an experimental basis, without commercials or an audience. This was followed by its first major public demonstration at the 1939 World's Fair and the first commercial telecasting in 1941. In 1934, Congress passed the Communications Act, empowering the Federal Communications Commission (FCC) with regulatory licensing responsibilities. All broadcasters were (and are) required to maintain an FCC license, and the granting of the license was based on frequency availability and the public's interest.

Television might have gotten off to a faster start were it not for the depression, the growth of the film industry, and World War II. During the war, the FCC placed a freeze on the formation of new television stations, and most efforts were redirected away from television to other war-related technologies. However, at the end of the war, the technologies developed during the war were applied to the television industry. At that point, it was becoming evident that television would constitute a serious threat to movies and radio (Barnoux, 1990).

The structure of early television was modeled after that of radio. It had three television network systems—the National Broadcasting Company (NBC), the Columbia Broadcasting System (CBS), and the American Broadcasting Company (ABC)—and a spectrum that covered comedies, quiz shows, soap operas, suspense programs, variety shows, and westerns. The similarity resulted mostly from the migration of the early developers of television programming (i.e., technicians, writers, directors, actors, musicians, and singers) from the world of radio (Whetmore, 1981).

The "golden age" of television, the 1950s, was a period marked by tremendous growth and innovation. With the end of the FCC's freeze and the cost of TV sets dropping to the point where most moderately affluent families could afford one, television ownership increased exponentially (see Figure 1.3). During this period, television broadcast began at 7:00 A.M. and continued till past midnight. The early morning programs consisted of news summaries and feature stories aimed at families preparing to go to work. Programs from 9:00 A.M. to 5:30 P.M. were directed at housewives and featured game shows, household hints, light interviews, romantic dramatic series, variety shows, and discussions of family and community problems. Following that was the children's hour. From 6:30 to 8:00 P.M., programs were designed to appeal to both adults and children; they included news, sports, and puppet and musical shows. From 8:00 to 11:00 P.M., the programs included drama, variety shows, talent and quiz competitions, and sports events. The closing hours started at 11:00 P.M. with news, followed by feature films and a goodnight chat (UNESCO, 1953). This format has changed little into the present day.

**Children and Television**

A detailed breakdown of the daily viewing audience in the autumn of 1951 shows that children were watching television throughout the day, and their choices were not limited to children's programs (just as in radio). About 30% of the children under age 16 were watching television at 9:00 A.M., reaching maximum at 5:00 P.M., and falling to less than 8% around 10:00 P.M. (UNESCO, 1953). Children watching adult programs were also
found by Schramm et al. (1961). Their results showed that sixth-grade children were already spending 80% of their viewing time on programs that were intended for adult viewers; even in first grade, nearly 40% of the viewing time was devoted to adult programs. Of course, heavy exposure to television did not begin at first grade.

Children were (and are) exposed to television as early as 6 to 12 months old, and these children responded to television for an average of 1 to 2 hours a day (Hollenbeck & Slaby, 1979). Studies report that about one fourth of 2-year-olds and two thirds of 4-year-olds spend 2 to 4 hours a day watching television (Comstock & Paik, 1991; Friedrich & Stein, 1973; Roberts & Bachen, 1981; Singer & Singer, 1981). As recently as 1998, it was found that young children as early as age 2 watch more than 3 hours daily (Nielsen Media Research, 1998).

As children grow, regular television viewing increases during the preschool years (with a slight decrease when children are going to school), rises up to early adolescence, and finally decreases during teenage years (Comstock, Chaffee, Katzman, McCombs, & Roberts, 1978; Johnstone, 1974; Larson & Kubey, 1985; Rubin, 1977; Schramm et al., 1961). For example, Rubin (1977) found that television viewing declined sharply as adolescents moved through the high school years. The peak in viewing was reached at age 9, and from 9 to 17, the time teenagers spent with television declined.

Such a decrease in television consumption has been explained by the development status of adolescents, which is the product of chro-
nological, biological, or cognitive growth (Wartella, Alexander, & Lemish, 1979). The general notion for development and media use is that development creates both needs and resources for differential use of mass media by children and adolescents. Developmental status influences media choice, degree of media use, and the media content. For teenagers who would like to identify with their peers, the images television portrays are remote from them since television aims for the largest possible audience, making many adolescents grow increasingly distant from the mainstream focus of this appeal and start looking for other media, such as radio (Larson & Kubey, 1985).

And what about gender differences in the viewing time of contemporary children? The answer is complex and controversial, and will be discussed in later chapters. Briefly, there is some evidence that gender differences in television viewing typically appear around 4 or 5 years of age and increase with age (Bianchi & Robinson, 1997; Carpenter, Huston, & Spera, 1989; Singer & Singer, 1981). On the other hand, data from Nielsen Media Research show no gender difference for ages 2 to 11 (Condry, 1989). Huston, Wright, Marquis, and Green (1999), from their 3-year longitudinal study, also find no significant gender difference in children 2 to 4. The studies by Mauldin and Meeks (1991) and Timmer, Eccles, and O’Brien (1985), however, show that, for 3- to 11-year-olds, boys watched more television than girls did, but only on weekends. These diverse findings simply support the initial response: any gender difference is apt to depend on numerous other factors.

**Program Preferences**

What people state as their preference and what they actually watch can be very different. As a result, there is always a danger of misinterpreting the relationship between preference and actual consumption. Especially when it comes to children’s television use, often preferences are influenced by the opinions of others such as family members or peers. Furthermore, there are other factors that dictate what one actually watches, such as whether a preferred program is available, time availability, or broadcast time. Rosengren and Windahl (1989) have pointed out that preferences are more an expression of the individual and the stage of development attained rather than a predictor for actual viewing. With this understanding, the following deals with preferences in television viewing.

Program preferences appear very early, almost as soon as children begin to view television. Preschool children generally prefer the shows designed specifically for them, such as those involving animals, animated characters, or puppets, all in story form with full action, and frequently involving laughter (Lyle & Hoffman, 1972; Schramm et al., 1961). As children mature, program preferences become more diversified, and they begin to favor adult programs as well. In fact, as early as 1951 (Maccoby, 1951), it was known that at all age levels children watch television during hours that are not exclusively devoted to children’s programs, indicating that they are exposed to a variety of adult programs. Naturally, as children shift their program preferences toward more adult programming, program preferences become more diverse. A more recent study by Adler and his colleagues (1980), based on an analysis of Nielsen data for 1973, confirms that only 3 of the top 15 shows favored by children were Saturday morning offerings; the remainder were prime-time shows aimed at adults. In short, children’s content preferences increasingly approximate adult patterns.

The question then arises as to why children prefer adult programs. As Wartella et al. (1979) explained, it may well be that, in general, television viewing happens in a family context, and it is easy to imagine that other family members’ norms and preferences can influence a child’s preferences. There are few programs offered for 9- to 11-year-old children, and that may be why children are tuning to adult programs. From the child developmental perspective, early adolescence is when...
children strive to orient themselves to the adult world, and adults’ programs, more than children’s, satisfy such needs. Watching adult television programs adds to one’s status in peer group relationships.

Finally, program preference is determined to a large degree by motivation and reasons for viewing. Schramm et al. (1961) listed three reasons why children watch television: (a) the passive pleasure of being entertained and living a fantasy; (b) the information that they frequently gain from television even without necessarily seeking information; and (c) television’s social utility function, according to which television provides a subject of conversation or a reason to be with other people. They noted that television offers different gratifications to different children but suggested that stimulating fantasy seeking and fantasy behavior is the primary role of television for children. Thus, much of the incidental learning may be a by-product of fantasizing.

Later, Greenberg (1974) surveyed children 9, 12, and 15 years old to investigate their motivation for watching television. Nine-year-olds showed that learning and relaxation were significant motivations for watching television. As for 12- and 15-year-olds, the use of television for passing time and as a habit emerged strongly and was associated with watching all kinds of television content. In short, there are (at least) six different reasons for viewing television (Rubin, 1977): to learn, to pass time or as a habit, for companionship, to forget, for arousal, and for relaxation. It appears that younger children identify with these reasons more strongly than do older ones, but viewing as a pastime or as a habit is the predominant reason for viewing television across the age groups.

**Viewing Context**

Whether children watch television with family members, siblings, peers, or alone is a significant component of the viewing experience. In the 1940s and early 1950s, television was purchased as a single unit and was placed in the living room. Television brought families together and made family members spend more time at home with one another. However, despite being together in one room, families conversed less than they had before television, and when they did talk to each other, frequently it was in regard to the disagreement over program choices (McDonagh, 1950; Stewart, 1952).

Since the 1950s, there has been a steady increase in the number of homes with more than one television set. According to Nielsen Media Research, in 1998, 74% of U.S. households had more than one television set (see Figure 1.3). With multiple television sets, there have been concerns that television viewing will be a more isolated and private experience. For example, in modern days, parents are being excluded from the viewing experience. Lawrence and Wozniak (1989) surveyed about 150 children 6 to 17 years old and found that entire family viewing is infrequent, and as much as two thirds of their viewing time is with siblings. When they do watch with parents, it is mostly with the father. Another study of more than 300 children ages 3 to 5 shows that co-viewing declines with age, and the majority of children’s programs are watched without parents (St. Peters, Fitch, Huston, Wright, & Eakins, 1991).

One may wonder why children’s isolated viewing should be of concern. There are numerous responses, but one important reason for concern is the possibility that television can become a distraction from other activities, a source of exposure to antisocial behavior, and also void of any prosocial value. Indeed, when children watch television with siblings, the programs they watch are more entertainment and comedy oriented, and very early they abandon watching more informative programs. However, children tend to view informative programs, and for longer periods, when an adult is present (Wright, St. Peters, & Huston, 1990). Though it may be true that fantasizing or arousal alone can have an educational by-product, it is unlikely that infor-
mation gained in such fashion can be of any long-lasting value.

**Cable Television**

Television-related technologies such as cable television have changed the way people use television in American households. Cable television began in late 1948 as a service to households in mountainous or geographically remote areas where reception of over-the-air television signals was poor. However, the cable industry soon realized that additional programming choices could be offered by importing signals from distant stations into markets that were served by only one or two local stations.

It is interesting that, contrary to common belief, when television became a mass medium, the percentage of the American households using over-the-air television was comparable to that subscribing to cable television (see Figure 1.3). The major difference in the emergence of the two media in the early years was the exponential growth of the former as compared to the steady linear growth of the latter. Still, the gradual increase in cable television subscription was sufficient to bring the broadcast industry's attention to its potential competition. This led to the FCC's placing restrictions on cable-delivered programming, from 1966 to 1972, to protect the broadcast industry in the public's interest.

In 1972, the restrictive policies on cable began to relax. This brought the launch of the nation's first pay-TV network, Home Box Office (HBO), in 1975. HBO, using satellite interconnections, brought into the home Hollywood films, made-for-television movies, and special entertainment programming not formerly available to television audiences. This was the beginning of a national satellite distribution system that brought a pronounced growth of services to subscribers. In addition to three television networks, cable television has carried 24-hour channels dedicated to news, sports, music, children, and more.

**Cable and Children**

Families with cable services have better reception of network broadcast programs and have access to a wide range of programs targeting more narrowly defined audiences, including children. Indeed, the number of networks with children's programming has increased from four networks (ABC, CBS, NBC, and Public Broadcasting Service [PBS]) to seven (the four networks plus Fox, United Paramount Network [UPN], and Warner Brothers [WB]). Plus, there are now children's cable television channels (Nickelodeon, the Disney Channel, and Cartoon Network) and family-oriented networks that carry some children's programming (Turner Broadcasting System [TBS], USA Network, the Discovery Channel, Turner Network Television [TNT], Music Television [MTV], Arts and Entertainment Channel [A&E], and the Family Channel).

Given the expanded content available on cable television, the question of what children watch arises again. Over a period of three Saturdays, Heeter (1988) surveyed 153 households with cable, 40 of which had children under 18. The share of viewing time to different types of channels revealed that the households with children watched more network programming (61% of viewing time on average) compared with the other households (26%). Network programming during the sample period (8:00 A.M. to noon) was made up exclusively of shows targeted to children. As expected, other households watched more nonnetwork off-air channels. However, channels available only over cable attracted one third of the viewing time of households with children, indicating that children watched those channels despite the fact that there were children's programs on network channels. Interestingly, households without children that watched television on Saturday mornings watched for as much time as households with children.

When Heeter conducted the study, Nickelodeon, for example, drew only 2% of the viewing share. However, more recently, tele-
vision broadcast networks have begun losing Saturday morning viewers to programs offered on children's cable channels. A survey reports that, in the 1996-1997 season, children 2 to 11 watched an average of 211 hours of basic cable programming, while they watched only 48 hours of broadcast television (Petrozzello, 1998). This shift from broadcast to cable is partially because more programs and time are allocated to children's programs on basic cable than they are on broadcast television.

Given the proliferation of children's shows on cable and the rarity of family viewing, in conjunction with the finding that isolated children tend to view mostly entertainment and comedy shows, the same concerns arise as in the early days of television. In other words, it is possible that the increase of children's shows on cable does not imply a higher quality of viewing. For example, it has been found that children with cable watch more cartoons than children without cable do (simply because cable offers cartoons on weekdays and weekends, whereas most broadcast stations have cartoons only on weekends; Huston & Wright, 1996). As a result, children with cable view fewer child-informative programs.

**Computer-Based Media**

The introduction of television into American households marked a transition that allowed for an entirely new experience in the world of mass media. Today, yet another novel transition is taking place, namely the introduction of computer-based technologies into homes. The major and significant difference between these novel media and other mass media is the high level of interaction and active involvement that is called for. The impressive growth of these media is a testament to their popularity, and it is the interactive element with which the old media must compete.

The effects of these interactive media on society have been a topic of active research because of the possibility of adverse or beneficial consequences. And, naturally, the effects on children and adolescents have been of particular concern. Ever since their appearance, computers have been enthusiastically used by children and adolescents. Given the rapid pace at which children are adopting and using computers, and considering the possible educational or social effects that possibly may be more effective than television, it behooves researchers to examine this new relationship. Research in this area, however, is still in its infancy, and so little can be said with great certainty. As a result, much of the following discussion is based on only one source, the Current Population Survey results conducted by the U.S. Census Bureau (1999). A more in-depth discussion will ensue in later chapters of this book.

According to that Census study, 36.6% of American households had computers in 1997. The data also show that personal computer penetration for households with children (ages 6-17) was 51%, while the same number for households with no children was 31%. This implies that the presence of a child in a household is a strong predictor of computer ownership. What is equally interesting is that, with a substantial increase in computer use for all segments of the population, far more children have been using computers than adults (74.4% vs. 47.1%; see Figure 1.4).

When the householder's attributes are considered, the educational background of the householder emerges as a strong predictor of computer ownership; 15% of the children in households where the householder had less than a high school education had a computer, compared with 80% of the children in households where the householder had a bachelor's degree or higher (U.S. Census Bureau, 1999). It is likely that parents purchase computers with their children's education in mind. In fact, data suggest that home computers are used mostly for running educational software. Table 1.2 indicates the home computer uses of children 3 to 17. It shows that, for the entire age range, for both genders, and all income levels, the highest-ranking purpose for using computers is education.
Educational Software

Educational programs for children have been one of the primary categories in the personal computer market since the technology became available. Such early spread of educational software is promising since it shows that the use of personal computers goes beyond the entertainment function of commercial television, expanding the educational opportunities for children.

The software market has been producing "edutainment" (education + entertainment) programs for children. 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 are spin-offs of television and cable 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). According to the numbers in Table 1.2, the edutainment movement has been extremely successful in securing the children's market.

Although at first teenagers posed a difficult challenge, the software industry was soon able to capture that segment of the market as well.
TABLE 1.2 Purpose of Computer Use at Home, by Children 3 to 17 Years

<table>
<thead>
<tr>
<th></th>
<th>Total Number of Children</th>
<th>% Word Processing</th>
<th>% E-mail</th>
<th>% Games</th>
<th>% Graphic/Design</th>
<th>% School Assignments</th>
<th>% Education Programs</th>
<th>% Learning the Computer</th>
<th>% Internet</th>
<th>% Log-in School</th>
<th>% Other Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total using computer at home</td>
<td>24,550</td>
<td>38.9</td>
<td>14.7</td>
<td>83.0</td>
<td>18.0</td>
<td>56.2</td>
<td>93.3</td>
<td>24.6</td>
<td>19.9</td>
<td>1.7</td>
<td>2.0</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-5 years</td>
<td>2,947</td>
<td>4.2</td>
<td>0.8</td>
<td>87.1</td>
<td>9.8</td>
<td>4.7</td>
<td>95.3</td>
<td>28.3</td>
<td>2.0</td>
<td>0.4</td>
<td>1.3</td>
</tr>
<tr>
<td>6-11 years</td>
<td>15,815</td>
<td>36.6</td>
<td>13.4</td>
<td>87.0</td>
<td>18.6</td>
<td>57.3</td>
<td>93.0</td>
<td>26.6</td>
<td>19.0</td>
<td>1.4</td>
<td>2.0</td>
</tr>
<tr>
<td>12-17 years</td>
<td>5,787</td>
<td>62.7</td>
<td>25.4</td>
<td>70.1</td>
<td>20.3</td>
<td>79.5</td>
<td>93.2</td>
<td>17.1</td>
<td>31.6</td>
<td>3.1</td>
<td>2.5</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>12,635</td>
<td>36.0</td>
<td>14.4</td>
<td>86.5</td>
<td>17.2</td>
<td>55.4</td>
<td>93.7</td>
<td>24.4</td>
<td>20.5</td>
<td>1.9</td>
<td>1.8</td>
</tr>
<tr>
<td>Female</td>
<td>11,915</td>
<td>42.0</td>
<td>15.0</td>
<td>79.4</td>
<td>18.8</td>
<td>57.1</td>
<td>92.9</td>
<td>24.7</td>
<td>19.3</td>
<td>1.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Family Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under $25,000</td>
<td>2,708</td>
<td>30.6</td>
<td>8.8</td>
<td>80.7</td>
<td>14.2</td>
<td>49.8</td>
<td>88.5</td>
<td>25.2</td>
<td>11.4</td>
<td>0.9</td>
<td>3.0</td>
</tr>
<tr>
<td>$25,000-$49,999</td>
<td>7,090</td>
<td>33.7</td>
<td>11.3</td>
<td>83.6</td>
<td>17.8</td>
<td>53.8</td>
<td>91.3</td>
<td>24.2</td>
<td>15.2</td>
<td>1.8</td>
<td>2.0</td>
</tr>
<tr>
<td>$50,000-$74,999</td>
<td>6,290</td>
<td>41.4</td>
<td>15.8</td>
<td>83.6</td>
<td>18.7</td>
<td>57.5</td>
<td>95.5</td>
<td>23.9</td>
<td>22.2</td>
<td>1.7</td>
<td>2.0</td>
</tr>
<tr>
<td>$75,000+</td>
<td>6,737</td>
<td>45.7</td>
<td>20.3</td>
<td>83.9</td>
<td>19.4</td>
<td>60.0</td>
<td>96.1</td>
<td>26.2</td>
<td>26.5</td>
<td>1.8</td>
<td>1.7</td>
</tr>
<tr>
<td>Not reported</td>
<td>1,725</td>
<td>37.4</td>
<td>12.0</td>
<td>78.9</td>
<td>16.4</td>
<td>56.9</td>
<td>90.3</td>
<td>21.4</td>
<td>18.8</td>
<td>1.8</td>
<td>2.1</td>
</tr>
</tbody>
</table>

well. In 1993, about 30% of children ages 3 to 17 were using computers for educational programs (U.S. Census Bureau, 1995); the same number in 1997 was more than 90%. In fact, in 1997, the most frequent use of home computers for teenagers was for educational programs (U.S. Census Bureau, 1999). There has been a tremendous increase in the use of educational software among children and adolescents. The growth is mostly the result of a wider variety of entertainment packages with much-improved graphics and story lines (Pete, 1996). That accomplishment is even more impressive with the realization that closely competing with educational purposes is the use of home computers for simply playing games (Table 1.2).

**Video Games**

The first interactive video games originated in 1962. 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 the overload of similar games led to a decline in interest and sales. But 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.

As with other media, the question of who plays, and how much, is a complex one. The answer depends on numerous other variables. Some simple trends, however, are known. For instance, regarding age and gender, it is known (see Table 1.2) that 87% of younger children and 70% of adolescents are playing games on computers, and slightly more boys (87%) are playing games than girls (79%). As for how much, in the 1980s, around the time when video games first became popular, studies reported a wide range of times spent on video games. Selnow (1984) found that heavy players spent 4.5 hours per week playing games at arcades, while light players were spending under 30 minutes per week. Interestingly, he also found that heavy users of arcade video games were also heavy television viewers. More recently, Funk (1993), in his survey of 900 fourth through eighth graders, found a playing time that ranges from no time to more than 10 hours per week. One explanation for the wide variation in time use is that initial heavy playing of video games occurs when a system is new to a home, and within a few weeks video game playing normalizes to much lighter play periods (Creasey & Myers, 1986).

Game preferences, too, have been investigated. Funk (1993) surveyed 357 seventh and eighth graders and found that the most popular game category was fantasy violence (32%), followed by sports (29%), general entertainment (20%), human violence (17%), and educational games (2%). The same study also found significant gender differences in game habits and in self-perceptions. In particular, boys spent more time playing video games and favored more violent games. As for girls, those who played more games were likely to show signs of low self-esteem. In a more recent analysis of video game preferences, the same authors (Buchman & Funk, 1996) analyzed 900 children in fourth through ninth grade and revealed that the highest- and the lowest-ranking program preferences found in the earlier study (i.e., fantasy violence and educational games, respectively) maintained the same ranks. However, the rates were alarmingly different: Whereas 32% of the earlier sample had shown preference for fantasy violence, that rate had increased to 50% in the later sample. In the older age groups in the later sample, girls expressed a stronger preference for fantasy (Cartoon) violence, while boys were more likely to choose games containing human violence.

Although it is highly likely that video games are here to stay, given their short
History of Children's Media Use

23

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 in an electronic fashion. However, the birth of the Internet as a public domain entity 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 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, for it is almost entirely based on thousands of “smaller” and even desktop computers.

Since the late 1980s, the Internet has been growing rapidly, expanding by 50% every year in the 1990s. The growth has been encouraged by ordinary computer users’ interest in the World Wide Web (WWW) and other Internet features (Dizard, 2000). The WWW (also known as the Web), one of many Internet-based communication systems, was originally conceived and developed to meet the need for instantaneous information exchange between large high-energy physics collaborations working in different universities and institutes all over the world. That development has been attributed mostly to Tim Berners-Lee and Robert Caillau, computer scientists at the European Laboratory for Particle Physics (CERN), who developed the first Web client (a browser-editor) and the first Web server, along with most of the communications software, defining URLs, HTTP, and HTML (European Laboratory for Particle Physics, 1998).

From there, the Web spread rapidly to other fields and grew to its present impressive size.

A 1998 survey by the NEC Research Institute estimated that the Web contained 320 million publicly indexable pages of information and entertainment (Lawrence & Giles, 1998). Just a year later that number had increased to 800 million, a 250% increase in the number of web pages (Lawrence & Giles, 1999). For Internet consumers, the challenge is finding the desired websites, particularly since no search engine has indexed more than 16% of the Web.

Even 16% of 800 million pages amounts to a great deal of information, and the power of the Internet lies in allowing ordinary users, including children, to access this vast amount of information. The 1997 Census data indicate that nearly 20% of children used home computers to access the Internet, and more recent research suggests that children and teenagers are the two largest growing sectors on the Internet (Jupiter Communications, 1999). According to statistics from Jupiter Communications, approximately 8.6 million kids (5-12 years old) and 8.4 million teenagers (13-18 years old) were on-line in 1998. By 2002, it is projected that these numbers will increase to 21.9 million children (a 155% increase) and 16.6 million teens (almost a 100% increase; Kirchner, 1999).

The uses of the Internet and the various reasons for children’s use of it are just as varied as those of other media. The 1997 Census data suggest that the most frequent purpose of Internet use by children and adolescents was to find government, business, health, or educational information (76%); followed by e-mail (57.5%); chat rooms (32%); seeking news, weather, and sports information (28%); newsgroups (5%); and taking courses (3%). When boys and girls are compared, they tend to use the Internet for similar purposes. However, there are two differences. Boys use the Internet more than girls for gathering information on news, weather, and sports (35.4% vs. 19.7%), while girls use the Internet more than boys for e-mail (61.6% vs. 54.4%).
The Internet is truly in its infancy, and if anything has been learned from the history and evolution of other media, it is that during times of transition, when a new medium is introduced, little can be said with certainty. Currently, the Internet appears to have disturbed the partial equilibrium that previous media had been enjoying, and, as a result, the media world appears to be somewhat chaotic. Although only time will tell of the future of the Internet and other media, the policy decisions that are made now, during this time of turmoil, are apt to affect that future.

Concluding Remarks

The history and evolution of media resemble that of species in nature. The introduction of a new medium (species) typically changes the uses and interactions among the existing media. This is not surprising given that the system consisting of media and ecological systems are both based on very similar principles (e.g., the survival of the fittest). By the same token, the two systems display some generally common features in their evolution. For example, the evolution of ecological systems is marked by what has been termed punctuated equilibrium (Eldridge, 1985; Gould, 1984); rather than in a steady and gradual fashion, changes occur in short-time frames separated by long periods of relative quiescence. This is, in fact, how media have evolved as well. Following the introduction of movies over a short span of time, they enjoyed their golden age, accompanied by relatively little change, until radio came along. The evolution of radio, television, and interactive media has followed the same general pattern.

To illustrate that idea in a bit more detail, consider television. In its early days, television substantially affected activities. Some of the changes were impressive, if not socially significant (e.g., bedtime being postponed about 13 minutes; Schramm et al., 1961). Other more significant changes included less engagement in activities such as reading, visiting with friends, driving for pleasure, participation in sport activities, radio listening, movie attendance, and conversational interaction (McDonagh, 1950). However, in more recent times, even the proliferation of media content distribution channels (i.e., multiple television sets, cable television, and VCRs) has changed our behavior only slightly. Viewers tend to watch similar programs, or even reruns of the same programs, broadcast over the air (Barwise & Ehrenberg, 1988). The viewing behavior follows the same sort of punctuated pattern in that there are times when it is erratic, followed by times of consistent and predictable behavior. The new channels have, therefore, not revolutionized viewing choices or viewing behavior.

Of course, in a punctuated history of media, it is still possible to identify some of the underlying processes. To survive radio's challenge, the motion picture industry was forced to move to sound and later to color films. More direct and compelling challenges to movies came from television. Television provided the same entertainment function that movies provided but with the added convenience of delivering programs directly to homes. To survive this threat, the movie industry had to cooperate with television by providing materials for broadcasting. As for radio, it had to reinvent itself to survive the television challenge. Radio was forced to move from being a staple at the center of the living room to becoming portable and physically going to where television could not. The television industry, in an effort to survive with multimedia, introduced high-definition television, a breakthrough toward the computerization of home television sets. This digital technology is expected to provide multimedia Internet services for the television networks and local stations. Radio, too, has taken the step toward digital broadcasting in what is referred to as digital audio broadcasting.

The Internet offers an environment in which all of these media can coexist. With high-speed Internet connections provided by either telephone wire, a cable television line, or a satellite link, new entertainment options
such as movies-on-demand, radio, television, and "live" on-line games against many players scattered around the globe have become reality. One question that arises is the one that has been visited every time a new medium has emerged: namely, that of the effect on children. For example, the interactive and distributed (less centralized) nature of the Internet makes it difficult to monitor children's use of the Internet. The notion of monitoring children's usage patterns of media is not new, but what is new is the significant amount of information available to children and free of charge. Of course, the Internet can serve both prosocial and antisocial functions, but it is disconcerting that only 6% of the Internet contains educational content. That number is more meaningful when it is compared with the 1.5% of the Internet containing pornographic material (Lawrence & Giles, 1999). Given that 800 million web pages exist, that fraction amounts to 12 million pornographic pages—clearly unsuitable for children.

The discussion of interactive media in this chapter is incomplete because the jury is still out on that topic, and that of the other media is incomplete because there is simply too much to discuss in the span of a single chapter. The primary aim has been to provide only a historical perspective, from the early days to contemporary times, within which the role of children in each medium can be examined in greater detail. This task, however, is deferred to the following chapters.

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