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no evidence... for the segregation and isolation of adolescents from the adult world.... This does not mean that certain adolescents are not alienated from their parents. But we find that those are also alienated from their peers... Our data lead us to propose an alternative theory, that of "generalized social interaction," according to which adolescents display different levels of sociability—some depending heavily upon both parents and peers, others depending little upon either parents or peers.

At this point the issue has not been resolved. Theorists continue to be interested in the question of a youth subculture. Does one exist? What effect if any, does a peer environment have on the transmission of societal values?

Webster's Dictionary defines an environment as "a surrounding" or "conditions influencing development or growth." Clearly, if a separate youth subculture exists it would constitute a peer environment surrounding and influencing the growth of youth.

But the rapid proliferation of electronic technology suggests a new question: Are contemporary adolescents surrounded by an "electronic environment" that also influences their development and growth? The concept of an electronic environment is noted by Williams (1982) in a book that projects some technological innovations in the near future. Williams's use of the term is similar to the use intended in this special issue. He notes:

Between the ages of six and eighteen, our children will watch about 16,000 hours of TV and spend another 4,000 hours with radio, records, and movies. They will spend more time with media than with school or in talking with parents [Williams, 1982: 18].

It is the question of the existence and effects of an electronic environment that is the theme of this special issue of *Youth & Society*. Adolescents seem to be loacated at the virtual center of an emerging technological revolution. Multiple TV sets, pay movies in bedrooms, "jogger" radio/cassette decks, arcade and

YOUTH IN THE ELECTRONIC ENVIRONMENT An Introduction

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People have long been interested in the social environments of adolescents. Of particular interest has been the issue of whether youth occupy a separate and specific "youth subculture." Dating from Kingsley Davis's classic study in 1940 and culminating in Coleman's (1961) treatise, *The Adolescent Society*, researchers have debated this issue. As Coleman (1961: 9) writes:

Our adolescents are cut off, probably more than ever before, from the adult society.... Our society has within its midst a set of small teen-age societies, which focus teen-age interests and attitudes on things far removed from adult responsibilities, and which may develop standards that lead away from those goals established by the larger society.

Not all authors agree, of course (see Troll and Bengtson, 1979, for a review of much of this literature). Kandel and Lesser (1972: 7, 8), for example, found

YOUTH & SOCIETY, Vol. 15 No. 1, September 1983 3-12 @ 1983 Sage Publications, Inc.

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in-home video games and low-cost computers surround adolescents in an embracing environment. In no case is this more obvious than with television and the video game/micro surge.

TELEVISION AS AN ENVIRONMENT

In a recent national poll, 2000 eighth graders were asked to name prominent figures they admired—their "top heroes" (Newspaper Enterprise Association, 1981). Not a single world leader, government official, business figure, or scientist appeared among the 30 individuals listed. Instead, the list consisted almost exclusively of television and film stars and a few sports personalities made famous by their appearance on television.

Perhaps the choices of these young people are not too surprising when one considers that adolescents spend an average of 22 hours per week watching television (Comstock et al., 1978: 91). Any socialization agent afforded this amount of time would be expected to have a profound effect. This effect is all the more powerful given the sophistication of the medium and its potential to engage the viewer (Ellis, 1983). What impact do high levels of viewing have on this age group? Although a great deal of research has dealt with television and children, relatively little is currently known about the role TV plays in the lives of adolescents (McLeod et al., 1982: 275).

I am currently conducting a study of the media use of 404 early adolescents (sixth graders) in north central Oklahoma. Although the analysis has not yet been completed, some preliminary frequencies are revealing. As part a of Table 1 shows, the average hours of viewing on a school day for this sample was 4.7, with the modal response being 7 hours per school day. Comstock et al. (1978: 91, 95) reported daily viewing of adolescents as 3.1 hours in 1976 (up from 2.8 hours in 1967). If the new data are correct, adolescent viewing is still increasing.

. HRS VIEWING	0	1	2	3	4	5	6	7	Total
Total Sample	1.2%	4.0%	8.4%	15.1% (61)	16.1% (65)	17.8% (72)	15.8% (64)	21.5%	100%
	Mean	= 4.7 1	nours;	Mode =	7 hour	s			
. NUMBER OF TV'S	0	1	2	2 3		4 5+		Total	
Total Sample	(2) (98)		(19	47.5% 20.0% (192) (82)		6.4% (26)	1.2% 100% (5) (404)		
c. PAY-TV IN		= 2.1	and the second	Mode = 1	CONTRACTOR OF THE PARTY OF THE	2 Pay-	TV	Tota	
THE HOME	Pay	Syste	ms	System		Syste	ns		337
Total Sample	40.	.1% (16	162) 36.1 (146)		6)	22.8% (92)		100% (404)	
d. TV IN BEDROOM	No TV in Bedroom			TV Some- times		TV All the Time		Total	
Total Sample	58	.5% (23	5)	12.9% (52)	28.6%	(115)	100%	(404)
Boys Only	51.9% (110)		.0)	13.7% (29)		34.4% (73)		100%	(212)
Girls Only	65	.8% (12	25)	12.1% (23)	22.1%	(42)	100%	(190)
e. PAY-TV IN BEDROOM*		but no y Syste		1 Pay-TV System		2 Pay-TV Systems		Total	
*Of those with TV in Bedroom	75	.9% (12	26)	17.5%	(29)	6.69	(11)	100%	(166)
*Of Boys with	72.5% (74)		4)	19.6% (20)		7.89	(8)	100%	(112
*Of Girls with	81	.3% (5	2)	14.1% (9)		18.89	6 (12)	100%	(64

Parts b through e of Table 1 demonstrate the television environment of adolescents. Less than one-quarter of the 11-and 12-year-olds reported living in a home with only one television. Over half of their homes subscribed to one or more pay-TV movie channels. Close to half of the youth reported

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All of this goes far beyond merely representing a little entertainment for a select group of individuals. Video games and other computer hardware and software are big business (\$1.7 billion in 1982) and are proliferating rapidly. Dedicated (one-game) commercial machines alone brought in \$5 billion in 1982. It is estimated that an expensive video game machine can pay for itself in less than six weeks.

Among the sample of sixth graders in north central Oklahoma, home "electronic game players" that attach to television sets are popular items. Of the youth surveyed, 73% reported owning such equipment (see part a, Table 2). As would be expected, considerably fewer reported having microcomputers in their homes (17.1%). Considering the small amount of time that computers have been available to the home market, 17% seems a significant percentage. The most popular micros, by frequency, were Radio Shack, Atari, and Apple.

This age group of adolescents reported playing home video games an average of 2 hours per day (see part b, Table 2). Given the amount of TV viewing reported, it would have been hard for them to average much more. Boys played slightly more often than did girls. Similarly, the boys reported playing electronic games at video arcades slightly more often than did the girls (part c, Table 2). Over half (52%) of the boys played at an arcade once a week or daily, compared to 38% of the girls. The overall average of trips to an arcade was once a month, with the mode being once a week. Almost half of the youth spent \$4.00 or more each time they played at the video arcade (approximately 16 games per trip). Clearly, video games and micros are starting to form an important part of the adolescent's environment.

ELECTRONIC ENVIRONMENT AS SYMBOLIC ENVIRONMENT

It goes without saying that the electronic environment is largely an environment of symbols. Television, of course, televisions in their own bedrooms, at least some of the time. And one-quarter of those with their own televisions received at least one pay-movie channel in their bedrooms.

Of the students surveyed, 66% reported watching at least one R-rated movie during the month preceding the survey, while 18% had watched all four of the R-rated movies listed in the study (not reported in the table). Extrapolating from the one month of this study to the many months over the duration of adolescence, the conclusion may be drawn that many adolescents are exposed to unprecedented quantities of violent and sexually oriented programming. (See Murray, 1980, and Pearl et al., 1982a, 1982b, for more literature in these areas.)

VIDEO GAMES AS AN ENVIRONMENT

There may be no one left in the United States who has not heard of Pac-Man. In a free enterprise system, anything successful spawns competition. In addition to Ms. Pac-Man (complete with lipstick), Junior Pac-Man, Super Pac-Man, Pac-Man Plus, and so on, there are a host of pirated Pac-Man look-alikes such as Puck-Man, Gobbler, Snoggle, and more. Other games such as Centipede and Serpentine are loosely based on the Pac-Man model. The Pac-Man characters, of course, have left the video screen to invade notebook covers, lunch boxes, T-shirts, mugs, trays, pencils, dart boards, pillow cases, backpacks, bulletin boards, stickers, and so on. There are hand-held electronic Pac-Man games as well as wind-up toys and a Saturday morning Pac-Man cartoon on television.

But Pac-Man and his lookalikes represent a miniscule percentage of the video games available. Youth in the 11 to 18 age range can readily recite the names of many video games. Competing with arcade-type games are highly sophisticated sports simulations, including olympic decathlon competitions, pool, golf, and, of course, baseball and football. There are a host of video board games including versions of chess, Monopoly, backgammon, Yahtzee, Othello, and so on.

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TABLE 2									
Video	Game	Use	by	Sixth	Graders				

a. OWN	Yes			No			19 191	
Video Game Micro Computer		73.0% (29	4)	27.0% (109)	100% (403)		e ber
		17.1% (69)		82.7% (334)	100% (403)		
b. HRS OF VIDEO	0	1	2	3	4	5	6	Total
Total Sample	10.1%	40.1% (162)	21.3% (86)	13.1% (53)	6.9%			
Boys Only	8.4%	36.4% (78)	24.8% (53)	13.6%	7.0%			
Girls Only	12.1% (23)	44.2% (84)	17.4% (33)	12.6%	6.8%		(8)	100% (404
	Total	Mean = 2 I	nours; M	ode = 1	hour			
c. FREQ PLAYING AT ARCADE	Never Play	Once or Twice	Every Month	Few 0	nce a onth	Once a Week	Almost	t Total
Total Sample	4.2%	16.4% (66)	16.9% (68)	17.1%		30.0% (121)	15.4% (62)	100% (403)
Boys Only	1.9%	13.1% (28)	18.3%		4.6%	34.7% (74)	17.4% (37)	100% (403)
Girls Only	6.8%	20.0%	15.3% (29)		0.0% 38)	24.7% (47)	13.2%	100%
	Total	Mean = 4.0	(Once	a mont	h); Mo	de = 5.0	(Once	a week)
d. MONEY SPENT AT ARCADE	Less Than 1	1 Dollar	2 or 3 Dollar	4 o s Dol		to 10 ollars	10 + Dollars	Total
Total Sample	10.2%	15.2% (61)	32.3% (130)	25.0		.7% 35)	8.0%	100% (402)
	Mean =	3.4 (\$3 0	r \$4);	Mode =	3 (\$2	or \$3)		

offers symbolic images of personalities and virtually limitless assortment of human and nonhuman character images. In video games, symbols of balls with large mouth eat symbols of ghosts; symbols of spacecraft attack symbols of alien invaders; symbols of King Kong drop barrels down on symbols of heroes

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(themselves symbols of the individual playing the game) who rescue symbols of maidens (who are symbols of Fay Wray). All of these marvels, of course, are animated by programs consisting of hundreds of lines of symbols written in computer languages that feature such symbols as "GOTO," "HIRES," and "D\$ = CHR\$ (4); INPUT D\$." Children are learning these symbols in public schools and summer camps, with 17% of the current sample having an opportunity to learn elementary programming at home (see part a, Table 2).

But there is another sense in which the electronic environment is a symbolic environment. Possession and/or competence confers symbolic status. Being "television wise" brings prestige on the playground just as being skilled at electronic games wins deference in the arcades. An important question in need of research attention concerns the symbolic value of being heavily immersed in this electronic environment. Are there "information haves" and "information have-nots"? Are there feelings of being deprived because one has not seen a particular R-rated pay-TV movie or played the latest video game? What are the implications of having a "deprived" electronic environment? Might the environment come to play the role of a "symbolic reference group" (Ellis et al., 1983)? Finally, what is the significance of any environment for behavior, self-feelings, and the like?

ABOUT THIS SPECIAL ISSUE

The questions posed above are among the issues addressed in this special issue of Youth & Society. Larson and Kubey compare the intrinsic rewards of peer-oriented music against those of the family-situated activity of television viewing. Morgan and Rothschild find that messages portrayed on television (in this case, sex-role stereotypes) are suppressed through peer interaction and intensified by complementary portrayals on cable TV. Panelas considers marketing strategies

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for video games and how they structure the social settings of leisure activities and group identities. He concludes that video games in public settings strengthen the peer group; home video games, the family. Peterson and Peters discuss how the portrayal of adolescent roles on television conveys a "media culture" that adolescents test within the peer group and use to structure self-identities. Finally, Condry and Keith call for research on the motivational factors of such emerging technologies as home computers and video games. They summarize existing research and speculate on the recreational functions of computer games for youth.

Is this issue the last word on youth and electronic technology? Of course not. But it offers some preliminary and innovative approaches to an area in need of theoretical and empirical attention. As Himmelweit (1980) put it, "New technological developments occur at such a speed and with fast decreasing cost that within the next ten years the scene will have changed dramatically, comparable to the dramatic and qualitative change in society brought about by the introduction of television. It is here that most research efforts need to be concentrated. In the case of radio, we were too late; in the case of television, almost so. There is urgency to plan now."

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