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Predictors of Children's Electronic Media Use: An Examination of Three Ethnic Groups

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Predictors of media use of children from 1 to 12 years old were examined for 3 ethnic groups (European American, African American, and Hispanic American). Data from the Child Development Supplement to the Panel Study of Income Dynamics representing 1,819 children were used. Models consisting of child characteristics, demographics, family characteristics, and parental well-being predictors accounted for more of the variation in media use (television and video games) by European Americans and Hispanic Americans than they did for African Americans. Generally, variables predicted total use of television similarly for the 3 ethnic groups tested. Parental education predicted use of educational media only for European Americans. Electronic video game use varied almost exclusively by the age and gender of the child. The very different patterns for television and electronic game use suggest that these media may fulfill different functions for children and families.

Although a great deal of research has been devoted to understanding the consequences of television viewing and electronic video game use (see Huston & Wright, 1997; Singer & Singer, 2001), much of what we know about children's electronic media use is based on relatively small samples of primarily middle- to

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upper-middle class European Americans. This remains so despite indications that there are differences among ethnic groups in the amount of television viewed (Blosser, 1988; Roberts, Foehr, Rideout, & Brodie, 1999) and the meanings ascribed to television (Albarran & Umphrey, 1993; Greenberg & Brand, 1994; Tangney & Feshbach, 1988).

As with much social science research, existing studies have generally examined differences in media use among ethnic groups (most often comparing European Americans to African Americans), thus adding little to our understanding of how the relationship between ethnicity and social context may lead to differing processes that determine media use. Even if ethnic groups differ in the types and quantity of media they use, variables that are related to media use may be similar or different among ethnic groups. For example, African Americans may watch more television overall, but socioeconomic status may be less importantly related to individual differences of television viewing for African Americans than for European Americans.

We have two major purposes in this article. First, using a nationally representative sample of families with children ages 1 to 12 years old, we ask what characteristics of children and their families predict the amount of time they spend with television and electronic games. We examine not only the total use of these media but also the proportion of time devoted to educational content and to more purely entertainment content. Second, we ask if the predictors of both total media use and media use with educational or entertainment content are similar or different among children in three ethnic groups—European American, African American, and Hispanic American. We posit that differences in the overall predictability of our model and the importance of specific variables originate from the different functions media serve for different ethnic groups. Although we document differences among the three ethnic groups in mean levels of media use, our main interest lies in examining the magnitude of the relationships among sociodemographic, family environment, parental well-being factors, and media use within each of the three ethnic groups.

ETHNICITY AND MEDIA USE

The amount of television viewed by children is consistently related to their ethnicity. African American children have been found to spend between 1.5 and 2 times longer watching television as European Americans (Roberts et al., 1999; Tangney & Feshbach, 1988), and they watch more television during the school day, in the afternoon, and in the evening (Blosser, 1988). African Americans also believe that television is more real (Greenberg & Brand, 1994), find television

more enjoyable (Albarran & Umphrey, 1993), and hold more favorable attitudes toward television (Huston et al., 1992). Early evidence showed that children from low-income families watch less educational television than those from more affluent families (Cook et al., 1975). Because African American children are more likely than European American children to be from low-income families, they may be less likely to watch as much educational television.

In general, Hispanic Americans watch less television than African Americans but more than European Americans (Blosser, 1988; Greenberg & Brand, 1994; Roberts et al., 1999). For many genres of television (e.g., soap operas, talk shows, and reality shows), Hispanic American and African American adults report similar levels of viewing that are higher than those of European Americans (Albarran & Umphrey, 1993). These ethnic group differences are partially accounted for by differences in education and income. The functions that media play for different ethnic groups may also account for some of the differences in media use.

Functions of Media

According to the uses and gratifications approach to media consumption, users actively seek out media and content that fulfill their needs (Rubin, 1994). Children and adults use television to serve a number of functions, including, but not limited to, entertainment, information gathering, emotional and social involvement, fantasy, escape, and identity formation (McQuail, Blumler, & Brown, 1972). The specific needs of children are shaped by their individual characteristics as well as the quality of their social environment. It is likely, however, that these influences do not affect all children to the same degree. In particular, ethnicity may moderate the relationship between children's social environment and their media use. Evidence shows, for example, that although income is related to television viewing, African Americans watch more television than European Americans, regardless of their income level (Greenberg & Dervin, 1970). This evidence suggests that the functions of media use for ethnic minorities may be independent of traditional predictors of media use; socioeconomic context, family environment, and parental well-being may be much better indicators of media use among European American children than among children from ethnic minorities.

There is also evidence that African American and Hispanic American children use media to perform functions in their lives that are different from those for which European American children use media. African American children, for example, appear to utilize the information in televised images and messages in

forming ethnic identities (Huntemann & Morgan, 2001) as well as learning about people from other ethnic and social backgrounds (Greenberg & Dominick, 1969). African American adolescents identify with characters sharing their ethnicity—especially if they identify with African American culture (Whittler, 1991)—and consider the portrayal of African Americans on television as more real more than European Americans do (Dates, 1980; Greenberg & Atkin, 1982).

For Hispanic American children from newly immigrated families, television can be both an acculturation device (Stilling, 1997) and a mechanism to remain connected to their cultural heritage (Subervi-Vélez & Necochea, 1990). Among adult Hispanic immigrants, viewing television has been shown to be related to cultural behaviors (e.g., culinary and literary) considered more North American (Stilling, 1997). Children of these families will likely seek out television to learn about the culture surrounding them. On the other hand, by watching programs targeting the Hispanic community, children may learn about their cultural background. For Hispanic Americans and African Americans, television is an important instrument for gaining information, however erroneous, about the dominant culture that surrounds them.

Educational media serves a specific function that is usually recognizable by adults. It is likely that better educated parents value the teaching potential of television more than less educated parents. Parental encouragement of educational media use may differ by ethnic group, however, if some cultures see media as effective teaching devices and others do not.

In contrast to television, video and computer games rarely contain realistic social content. As a whole, these games are likely to be used for entertainment purposes only. There is, therefore, little reason to expect that these games serve different social learning functions or have different predictors for children from different ethnic groups.

PREDICTORS OF CHILDREN'S MEDIA USE

In order to explore the similarities and differences of media use influences across ethnic groups, we constructed a predictive model consisting of variables from a variety of aspects of children's lives. By utilizing this ecological perspective, we hoped to recognize and account for the complex social environment in which media use occurs. Factors with the most theoretical and empirical support for their influence on media use included child characteristics (i.e., age and gender), socioeconomic resources, neighborhood conditions, family characteristics, and parents' psychological well-being.

Child Characteristics

During the first 12 years of life, the total amount of television viewed generally increases, with a reduction in viewing around the time of school entry followed by an increase over the next several years (Condry, 1989). Recent surveys have found that preschool children spend about 2 (Wright et al., 2001) to 2½ hr a day (Roberts et al., 1999) watching television. Estimates of older primary school children's viewing ranges from 2 (Wright et al., 2001) to roughly 4½ hr a day (Roberts et al., 1999). Overall, children spend much less time playing electronic games than watching television. Even among children who reported having played electronic games the day before, the most prevalent users (ages 8–13) played for an average of 1 hr and 38 min a day (Roberts et al., 1999). Electronic game play is more frequent among older children than among younger children, although educational electronic game play is more common for preschoolers than for older children (Wright et al., 2001).

Research indicates that boys watch slightly more television than do girls, with the difference reducing at the onset of adolescence. Longitudinal analyses indicate that girls watch slightly more educational and informational television than do boys (Huston, Wright, Marquis, & Green, 1999), and boys have viewing diets that are higher in cartoons and violent programming (Huston, Wright, Rice, Kerkman, & St. Peters, 1990). Boys also spend more time than girls playing electronic games, about 53 min a day compared to 38 min respectively (Wright et al., 2001).

Socioeconomic Resources and Neighborhood Conditions

Children in families in which the adults have relatively low education, occupational status, and income watch more total television and more noneducational cartoons than do children in families with higher levels of socioeconomic status (SES; Comstock, 1991; Truglio, Murphy, Oppenheimer, Huston, & Wright, 1996). Unlike television viewing as a whole, educational programming is positively related to some measures of SES; there is a tendency for children of better educated parents to watch more children's informative programs (Anderson, Huston, Schmitt, Linebarger, & Wright, 2001; Pinon, Huston, & Wright, 1989).

Additionally, neighborhood conditions may facilitate or inhibit children's activities outside their homes and may account for some of the ethnic and SES differences in media use. Because much media use occurs as a default when other options are not available, conditions such as neighborhood dangers or absence of recreation facilities may keep children inside the home, making it

more likely that they will watch television or play video games (Medrich, Roizen, Rubin, & Buckley, 1982).

Family Environment

Variations in family harmony, stimulation, and cohesiveness are likely to influence children's media use. The Home Observation for Measurement of the Environment (HOME) inventory is a measure of the quality of the home learning and socioemotional environment. In homes where children are provided a range of learning opportunities and supportive experiences with adults, children watch less general audience television, and proportionally more educational television, than do children in less supportive home environments (Huston, Wright, Marquis, et al., 1999). Parents who provide high-quality environments apparently also provide television experiences suited to children's needs and interests.

Family conflict, by contrast, may lead children to use television and other media as a means of escape from negative interactions. Parents and other family members may be less available for social interaction or other activities when families have high levels of conflict, and those interactions that do occur may have a high probability of being adverse (Conger, Ge, Elder, Lorenz, & Simons, 1994).

Parents' Psychological Well-Being

Parents' depression, stress, or lack of self-esteem may affect their own viewing patterns, and, hence, their children's opportunities for viewing (Anderson, Collins, Schmitt, & Jacobvitz, 1996). A parent who is depressed or lacking in confidence may be emotionally unavailable to a child or may be ineffective in providing guidance and regulation for the child's media use. It is possible, therefore, that low parent well-being will be associated with high electronic media use among children, but not with selective use of educational content.

SUMMARY AND RESEARCH QUESTIONS

In summary, previous research indicates that ethnicity, SES, family characteristics, and parental well-being are related to children's television viewing patterns. Although ethnic group differences in television viewing have been well documented (Roberts et al., 1999), a less investigated question is whether the patterns

of prediction of media use within each ethnic group are similar or different. Furthermore, the relationship between ethnicity and electronic game play has rarely been assessed. The main purpose of this article is to explore this issue by addressing the following research questions:

RQ1: Is the prediction model equally applicable to three ethnic groups?

RQ2: Do specific child, socioeconomic, and family characteristics predict media use as effectively and in the same direction for European Americans, African Americans, and Hispanic Americans? Do these predictions differ for television use and video game play? Do they differ by program or game content?

While these are exploratory questions, there is evidence from the research to make a limited number of specific hypotheses.

Hypothesis 1: Socioeconomic indicators are less powerful predictors of the amount and type of television viewed for African American and Hispanic American children than for European American children.

Hypothesis 2: Family level variables are not related to children's video game play for any ethnic group.

Hypothesis 3: A child's media use is related to his or her ethnicity. African Americans watch more television and play more video games than European Americans but use less educational content. Hispanic American media use falls between that of the other two ethnic groups.

METHOD

The Panel Study of Income Dynamics Child Development Supplement

Since 1968, the Panel Study of Income Dynamics (PSID) has been an ongoing panel study focusing primarily on the transfer of social and economic capital within families. In 1997, additional data about PSID children and their families were collected via the Child Development Supplement (CDS). The CDS sample comes from a nationally representative sample of PSID households; an

oversampling of low-income, mostly African American families; and a refresher sample of immigrant families (Hofferth, 1998). All families participating in the PSID with children under 13 years old were asked to complete the CDS. A total of 2,394 families agreed to participate, yielding a sample of 3,562 children. Forty-six percent of the children were European American, 41% were African American, 7% were Hispanic American, 2% were Asian American, and 4% were Native American or another race (Hofferth, 1998).

Among the instruments used were two 24-hr time-use diaries that provided all the television and video game data reported in this analysis. On one randomly chosen weekday and weekend day, the primary caregiver of each child reported all of that child's activities for that day. When appropriate, children were also employed in the completion of the diary. A primary activity and the duration of the activity were recorded to account for every minute of each 24-hr period; if applicable, a secondary activity was also noted. If watching television or playing a video game (either using a computer or a home video game system) was recorded as a primary activity, we asked the caregiver to record the title of the program or game. The amount of time spent watching television and playing electronic games in one week was estimated by multiplying the reported weekday media use by five and the reported weekend media use by two and summing the results.

Each television program title and game title was coded for its genre by two coders. A television program was coded as educational if the primary intent of the show was to inform and educate the viewer about a specific subject matter. These programs included shows traditionally considered child educational fare (e.g., *Sesame Street, Barney,* and *The Magic School Bus*) as well as news, documentaries, and programs illustrating classic literature (e.g., *Huckleberry Finn* and *Goldilocks and the Three Bears*). Unless determined to be educational, animated programs (including those containing some live-action footage or characters) were coded as noneducational cartoons. Coders achieved a satisfactory level of interrater reliability (Kappa = .81), and all disagreements of the television programs' genre were resolved through discussion.

An electronic game was coded as educational if it was developed primarily to educate or inform the user. The game was coded as sensorimotor if the game primarily involved using reflexes to succeed (these include driving and shooting games). Coders of the video games obtained an acceptable level of reliability (Kappa = .89). For a more detailed description of both coding systems, see Wright et al. (2001).

Primary caregivers also completed a household questionnaire that requested information on child characteristics, on family sociodemographic characteristics, on family environment, and on parental psychological well-being.

Samples

Total television viewing and electronic game play subsample. The sample for analyses involving total television viewing and total electronic game play included all children with at least one diary for whom we had complete data on all the predictor variables ($n = 1{,}819$). Those participants who reported no television viewing or electronic game play were included in these analyses as valid zeros. The resulting analyses included 1,009 European Americans, 682 African Americans, and 128 Hispanic Americans.

Television content subsample. Although respondents were asked to indicate the title of the television program viewed, some diaries lacked this information on a substantial number of entries. For the analysis of television viewing by content, cases were omitted if data were missing on any predictor variable, if only one of two diaries were completed, or if fewer than 70% of their television viewing minutes could be coded for content ($n = 1{,}304$). The resulting sample for these analyses contained 767 European Americans, 458 African Americans, and 79 Hispanic Americans.

Electronic game content subsample. Analyses of game play were conducted on participants who completed both diaries, reported any game play, and had data on all predictor variables ($n = 498$). The resulting sample contained 303 European Americans, 171 African Americans, and 24 Hispanic Americans. Because we judged the number of Hispanic Americans to be too small for meaningful results, analyses were performed on this subsample for European Americans and African Americans only.

Attrition analyses. Attrition analyses were performed to assess whether retained participants differed in each of the three subsamples, in comparison to the participants who were excluded because of missing data. For total television viewing and total electronic game play, our retained sample overrepresented European Americans and underrepresented African Americans and Hispanic Americans. Moreover, the retained sample had a higher income-to-needs ratio than those excluded from the sample. The television content sample also overrepresented European Americans and underrepresented African Americans and Hispanic Americans. This sample was also slightly older and had a higher income-to-needs ratio than the excluded sample. The electronic game play content sample overrepresented boys and European Americans and underrepresented girls and African Americans. Hispanic Americans were not included in

this sample. The retained sample was also older and had a higher income-to-needs ratio than those excluded from the sample.

Correlates of Children's Media Use

Demographic and socioeconomic characteristics. Analyses included child gender, coded as a dummy variable, where girls were coded as 1 ($n = 881$) and boys were coded as 0 ($n = 938$); child's age in years ($M = 6.09$, $SD = 3.65$); family income-to-needs ratio, total family income divided by family poverty threshold ($M = 2.94$, $SD = 3.51$); and years of education of household head ($M = 12.82$, $SD = 2.62$).

Neighborhood problems. The measure of neighborhood problems contained nine items assessing the perception of danger and likelihood of neighbor intervention in the event of danger (Hofferth, Davis-Kean, Davis, & Finkelstein, 1997). Primary caregivers were asked how likely a neighbor would be to provide help if, among other scenarios, "someone was breaking into your home in plain sight," "your kids were getting into trouble," or "a child was painting or writing on a car or building." The scale ranged from 1 (*very likely*) to 4 (*very unlikely;* $\alpha = .92$). The average of the items was used as the final scale score ($M = 1.66$, $SD = .65$). Some items in this scale as well as most others in this study were recoded such that higher scores indicated higher levels of the attribute being measured.

Family conflict. Family conflict was measured by a 6-item scale assessing how well family members got along and settled arguments (Sweet, Bumpass, & Call, 1988). Items included "we fight a lot in our family," "family members always calmly discuss problems," and "family members sometimes hit each other." The scale ranged from 1 (*completely agree*) to 4 (*completely disagree;* $\alpha = .69$), and the average of the items was used as the final score ($M = 2.01$, $SD = .46$).

Quality of the home learning environment. The quality of the home learning environment was assessed using the HOME short form (Caldwell & Bradley, 1984). The measure included such questions as "About how many books does the child have?" "Does your family get a daily paper?" and "Is there a musical instrument that the child can use at home?" Questions asked of the primary caregiver differed by the age of the child. Therefore, HOME scores standardized within age groups were used.

Parental psychological well-being. Parental depressive symptoms were measured using the short form of the Composite International Diagnostic Interview, a 10-item measure assessing the primary caregiver's depressive affect (World Health Organization, 1996). Primary caregivers were asked how often they felt "nervous," "hopeless," "depressed," and so on, during the past 30 days. The scale ranged from 1 (*none of the time*) to 5 (*all of the time*), and an average was used as the final score ($M = 1.65$, $SD = .58$, $\alpha = .89$).

Parental self-esteem was measured using the Rosenberg Self-Esteem Scale (Rosenberg, 1986), a 10-item measure asking the extent to which respondents agreed with such statements as "I feel I have a number of good qualities," "I feel like I do not have much to be proud of," and "I certainly feel useless at times." The scale ranged from 1 (*strongly agree*) to 4 (*strongly disagree*), and an average was used as the final score ($M = 3.46$, $SD = .43$, $\alpha = .83$).

Analysis Plan

Differences in media use among ethnic groups were analyzed using multivariate analysis of variance. The major purpose of the analyses, however, was to examine similarities and differences in correlates of television and electronic game use within ethnic groups. Ordinary least squares hierarchical regressions were conducted separately for European Americans and African Americans for six dependent variables, respectively: (a) total minutes of television viewing, (b) total minutes of game play, (c) percentage of television viewing that was educational, (d) percentage of television viewing that was noneducational cartoons, (e) percentage of electronic game play that was educational, and (f) percentage of electronic game play that was primarily sensorimotor. By utilizing the percentages of television and video game content, we are able to address children's media use diets instead of the amount of time spent with each content type.

The following four sets of predictors were entered as four successive blocks of a hierarchical model: (a) child characteristics (i.e., age, gender, Age $\times$ Gender interaction); (b) sociodemographic characteristics (i.e., income-to-needs ratio, education of head of household, neighborhood danger); (c) family environment (i.e., family conflict, HOME score); and (d) parental psychological well-being (i.e., depressive symptoms, self-esteem). In a fifth step, interaction terms for child age with parent education, income-to-needs ratio, family conflict, and HOME score were entered. Significant interactions were followed up with tests on subgroups of different ages.

Because the Hispanic American sample was relatively small, a reduced set of predictors was included, and the interactions with age were not tested. The predictors included child age and gender, education of household head, income-to-needs

ratio, family conflict, and HOME score. Models were tested on total television viewing, on total game play, on percentage educational television, and on percentage cartoon television.

RESULTS

Levels of Media Use Among European Americans, African Americans, and Hispanic Americans

Overall, the children in our sample spent an average of 761 min (12 hr and 41 min) a week watching television (SD = 609) and 95 min (1 hr and 35 min) a week playing video games (SD = 240). Twenty-four percent of the children's television viewing was educational programs (SD = .31), and 30% was cartoons (SD = .30). Thirteen percent of the children's video game play was educational material (SD = .31), and 35% was sensorimotor games (SD = .42).

There were significant ethnic-group differences for all of the media-use variables except the percentage of sensorimotor game use (see Table 1). African Americans watched more television overall, with a lower percentage of educational programs and a higher percentage of cartoon programs than did European Americans. African Americans played more electronic games than Hispanic Americans, and their percentage of educational game play was lower than that of European Americans.

Predictors of Television Viewing Within Ethnic Groups

The zero-order correlations between media-use variables and predictor variables for each ethnic group appear in Table 2. The results of the hierarchical regressions for minutes of total television viewing and for the percentage of viewing devoted to educational television and noneducational cartoon television appear in Table 3.

Total minutes of television viewed. For television viewing as a whole, the total variance explained is considerably larger for European Americans than for African American children. Although the model for Hispanic Americans contains fewer variables, it explains almost as much variance in total viewing as that explained for European Americans (Table 3).

Child characteristics and demographic variables accounted for significant amounts of variance in total viewing for European Americans and Hispanic

TABLE 1
Analysis of Variance for All Variables by Ethnic Group

	European Americans		African Americans		Hispanic Americans			
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*	*df*
Age	6.01	3.64	6.31	3.63	5.55	3.80	2.85	(2, 1,818)
Gender	.50	.50	.47	.50	.46	.50	1.19	(2, 1,818)
Income-to-Needs Ratio	3.97[d,e]	4.22	1.68[d]	1.68	1.53[e]	1.07	108.14***	(2, 1,818)
Education of Head of Household	13.62[d]	2.38	12.20[d]	1.97	9.91[d]	4.12	171.30***	(2, 1,818)
Neighborhood Problems[g]	1.52[d]	.51	1.79[d]	.73	2.11[d]	.85	71.10***	(2, 1,814)
Family Conflict	1.99[d]	.45	2.07[d,e]	.48	1.92[e]	.49	8.21***	(2, 1,818)
Standardized HOME Score	.37[d,e]	.87	–.41[d]	1.04	–.46[e]	1.0	154.90***	(2, 1,818)
Depressive Symptoms[h]	1.58[d]	.51	1.74[d]	.67	1.66	.58	14.66***	(2, 1,817)
Parental Self-Esteem[i]	3.46	.42	3.47	.44	3.38	.46	2.10	(2, 1,805)
Minutes per Week of TV	676.78[d]	555.34	878.46[d]	673.50	802.43	558.88	23.11***	(2, 1,818)
Minutes of Game Play	89.58	197.14	110.26[d]	304.08	52.98[d]	143.49	3.59*	(2, 1,818)
Percent of Educational Viewing[j]	.28[d]	.33	.18[d]	.26	.25	.31	15.96***	(2, 1,303)
Percent of Cartoon Viewing[j]	.28[d]	.29	.33[d]	.31	.35	.34	5.50**	(2, 1,303)
Percent of Educational Games[k]	.18[d]	.35	.03[d]	.18	—	—	25.88***	(1, 473)
Percent of Sensorimotor Games[k]	.33	.42	.39	.43	—	—	2.33	(1, 473)

Note. Dashes indicate values for variables that were excluded from the model when the Hispanic American sample size was too small. *F* = analysis of variance.

[a]$n = 1{,}009$. [b]$n = 682$. [c]$n = 128$. [d,e,f]Matching superscripts within a row denote mean values that are significantly different at $p < .05$. [g]Hispanic American ($n = 124$). [h]Hispanic American ($n = 127$). [i]Hispanic American ($n = 115$). [j]Percent educational viewing and percent cartoon viewing analyses were performed on ($n = 1{,}304$), with ethnic group totals of European American ($n = 767$), African American ($n = 458$), and Hispanic American ($n = 79$). [k]Percent educational games and percent sensorimotor games analyses were performed on ($n = 474$), with two ethnic group totals of European American ($n = 303$) and African American ($n = 171$).

*$p < .05$. **$p < .01$. ***$p < .001$.

TABLE 2
Correlations Among Predictor Variables and Media-Use Variables

	Total Television[a]	Percent Educational Television[b]	Percent Cartoon Television[b]	Total Electronic Games[a]	Percent Educational Games[c]	Percent Sensorimotor Games[c]
Age of Child						
European Americans	.19***	−.41***	−.09***	.26***	−.35***	.09*
African Americans	.07	−.24***	−.19***	.20***	−.15*	.05
Hispanic Americans	.21*	−.30**	−.25*	.27**	—	—
Gender of Child						
European Americans	−.06	.08*	−.11**	−.20***	.21***	−.15*
African Americans	−.05	.07	−.03	−.16***	.07	−.12
Hispanic Americans	.13	.20	−.20	−.15	—	—
Income-to-Needs Ratio						
European Americans	−.09**	.00	−.02	.04	.19***	−.10
African Americans	.02	.04	−.09	.02	.10	−.04
Hispanic Americans	−.24**	.04	−.01	.01	—	—
Education of Head of Household						
European Americans	−.14***	.16***	−.05	.01	.13*	.00
African Americans	−.08*	−.02	−.06	.04	.02	−.07
Hispanic Americans	−.07	.27*	−.16	.12	—	—
Neighborhood Problems						
European Americans	.05*	.01	.00	−.05	−.09	.04
African Americans	.02	.05	.01	.02	.02	.06
Hispanic Americans	—	—	—	—	—	—

Family Conflict						
European Americans	.13***	−.15***	.04	.06	−.15*	.08
African Americans	.09*	−.10*	.02	.04	−.06	.09
Hispanic Americans	.01	−.10	−.03	−.06	—	—
HOME Score						
European Americans	−.15***	.11**	−.03	−.02	.14*	−.01
African Americans	−.06	.03	−.02	−.04	−.04	−.17*
Hispanic Americans	−.05	.25*	.17	.04	—	—
Parent Depressive Symptoms						
European Americans	.12***	−.03	−.01	−.04	−.06	.04
African Americans	.02	.01	.04	−.02	−.05	.04
Hispanic Americans	—	—	—	—	—	—
Parent Self-Esteem						
European Americans	−.08**	.03	.08*	.02	.06	.03
African Americans	−.11**	.09*	.00	.02	.04	.01
Hispanic Americans	—	—	—	—	—	—

Note. Dashes indicate values for variables that were excluded from the model when the Hispanic American sample size was too small.

[a]European Americans (n = 1009), African Americans (n = 682), and Hispanic Americans (n = 128). [b]European Americans (n = 767), African Americans (n = 458), and Hispanic Americans (n = 79). [c]European Americans (n = 303), African Americans (n = 171).

*p .05. **$p < .01$. ***$p < .001$.

TABLE 3
Summary of Hierarchical Regression Model Using Child, Demographic, and Family and Parental Characteristics to Predict Television Use

	Total Television[a]			Percent Educational Television[b]			Percent Cartoons[b]		
	European Americans	African Americans	Hispanic Americans	European Americans	African Americans	Hispanic Americans	European Americans	African Americans	Hispanic Americans
Step 1: Child Characteristics									
Age	.197***	.047	.197*	−.376***	−.256***	−.262*	−.096*	−.143*	−.216
Gender	−.044	−.037	.144	.076*	.066	.158	−.087*	−.045	−.231*
Age × Gender	.017	−.044	.062	.020	−.031	.063	−.037	−.036	−.052
R^2 Change	.038***	.009	.063*	.177***	.062***	.124*	.019**	.041***	.112*
Step 2: Demographic Variables									
Income-to-Needs Ratio	−.021	.075	−.259**	−.038	.120	−.118	−.014	−.147*	.135
Education of Head of Household	−.083*	−.106*	.027	.177***	−.07	.208	−.040	−.033	−.400**
Neighborhood Problems	.003	−.033	—	.026	.063	—	.006	−.004	—
R^2 Change	.028***	.009	.059*	.031***	.00	.050	.002	.007	.040
Step 3: Family Characteristics									
Family Conflict	.045	.075	−.032	−.084*	−.113*	−.084	.087*	.005	−.083
Standardized HOME Score	−.096**	−.015	.028	.071	.00	.077	−.023	.029	.329*
R^2 Change	.012**	.008	.002	.006	.011	.010	.002	.000	.078*

Step 4: Parental Psychological Well-Being									
Depressive Symptoms	.079*	−.058	—	.011	.081	—	.003	.003	—
Self-Esteem	.014	−.114*	—	−.040	.097	—	.100*	.030	—
R^2 Change	.004	.010*	—	.002	.009	—	.008*	.000	—
Step 5: Interaction Terms									
Age × Education of Head of Household	.085*	.103*	—	−.058	.018	—	−.020	.007	—
Age × Family Conflict	−.037	−.056	—	.054	.067	—	−.075*	.018	—
Age × HOME Score	−.096**	−.076	—	−.048	.101	—	.038	−.107*	—
Age × Income-to-Needs Ratio	−.048	−.045	—	−.002	−.079	—	.014	.148	—
R^2 Change	.012*	.013	—	.010*	.013	—	.007	.018	—
Total R^2 (Adjusted)	.081***	.029*	.072*	.211***	.076***	.105*	.021**	.036**	.153**

Note. Dashes indicate values for variables that were excluded from the model when the Hispanic American sample size was too small. [a]European Americans (n = 1,009), African Americans (n = 682), and Hispanic Americans (n = 128). [b]European Americans (n = 767), African Americans (n = 458), and Hispanic Americans (n = 79).

*$p < .05$. **$p < .01$. ***$p < .001$.

Americans. Less parent education was associated with high viewing for European American and African American children. There was a significant age by education interaction for total television viewing for both European Americans and African Americans. Follow-up analyses indicated that between both ethnic groups parental education was a better predicator of total television viewed for younger children (ages 0–5) than for older children (ages 6–8 and 9–12).

Low income was associated with high viewing only for Hispanic American children; it was unrelated to the viewing of children with other ethnic backgrounds. Neighborhood problems were unrelated to any index of viewing for any ethnic group.

Family characteristics accounted for a significant amount of variance of children's total viewing for European Americans but not for African Americans or Hispanic Americans. In general, negative family environments as defined by more family conflict and lower HOME scores were associated with high levels of television viewing among European American children. The trend for African Americans was also in this direction. The HOME score also interacted with age in predicting the viewing of European Americans. Follow-up analyses for different age groups indicated that the HOME score was a stronger predictor of television viewing among older European American children than among younger ones.

Parental psychosocial well-being variables were related to children's total television viewing for African Americans. Children with parents who had low self-esteem watched more television. Although the step of psychosocial well-being variables did not explain significantly more variance than the previous steps in the model for European American children, depression was positively related to television viewing for these children. The emerging trend suggests that lower levels of parental psychosocial well-being are related to higher amounts of television viewing.

Educational television viewing. The full model explained considerably more of the variance in educational viewing than in total television for all three groups, but, as with total television viewing, the total R^2 for European Americans was greater than that for African Americans. The proportion of Hispanic Americans' educational viewing predicted by the model was between that of the other two groups (see Table 3). Although educational viewing was greater for younger children than for older children in all three groups, child characteristics explained more variability for European Americans than for African Americans. Again, explanatory power for Hispanic Americans fell between the other ethnic groups tested.

Socioeconomic variables were significant predictors for European Americans but not for African Americans or Hispanic Americans. For European Americans, children of better educated parents watched a higher percentage of educational programs than did those of less educated parents. Overall, family environment and parental well-being were weak predictors for all groups, but there was some tendency for educational viewing to be associated with low family conflict in all groups and with a high HOME score in European American families.

Cartoon television viewing. The total model predicted little of the variance in cartoon viewing for European Americans and African Americans but was stronger for Hispanic Americans (Table 3). Child characteristics were significant predictors in all three ethnic groups: Younger children and boys watched more cartoons than did older children and girls. Although the socioeconomic predictors were not significant for any ethnic group, the interaction between age and income approached significance for African Americans; high income was associated with lower viewing for younger children, but not for older children. For Hispanic Americans, the children whose parents had lower levels of education watched more cartoons than did those children with better educated parents.

For European American children, the interaction of age by conflict was significant; high family conflict was associated with high viewing for younger children but not for older children. High viewing was also associated with high parental self-esteem in European American children. In Hispanic American families, however, high HOME scores were associated with high cartoon viewing. While a similar pattern occurred for younger children in African American families, the direction of the relationship was reversed for older children.

Electronic Games

The results of the regressions for total electronic game time and the percentage of game time devoted to educational and sensorimotor games appear in Table 4.

Total electronic game play. All of the predictors in the models tested accounted for more variance for European Americans than for African Americans; the more truncated model tested with Hispanic Americans produced a total R^2 comparable to that for European Americans. For all three groups, the

TABLE 4

Summary of Hierarchical Regression Model Using Child, Demographic, and Family and Parental Characteristics to Predict Electronic Game Use

	Total Electronic Games[a]			Percent Educational Games[b]		Percent Sensorimotor Games[b]	
	European Americans	African Americans	Hispanic Americans	European Americans	African Americans	European Americans	African American
Step 1: Child Characteristics							
Age	.285***	.196***	.337***	−.263***	−.214*	.108	.099
Gender	−.201***	−.130**	−.190*	.200**	.033	−.119	−.161
Age × Gender	−.153***	−.097**	−.230**	.007	.175	−.059	.048
R^2 change	.133***	.070***	.142***	.167***	.037	.032*	.017
Step 2: Demographic Variables							
Income-to-Needs Ratio	.019	−.033	−.068	.288*	.257	−.344*	.040
Education of Head of Household	−.003	.046	.198	.146*	−.020	.118	−.248
Neighborhood Problems	−.036	.027	—	−.078	.027	.064	.049
R^2 Change	.002	.004	.038	.050***	.020	.012	.008
Step 3: Family Characteristics							
Family Conflict	.031	.028	−.044	−.060	.093	.027	.008
HOME Score	−.018	−.054	.048	.014	.079	.013	−.205
R^2 Change	.000	.003	.004	.001	.000	.003	.023

Step 4: Parental Psychological Well-Being							
Depressive Symptoms	−.047	−.003	—	−.011	−.035	.020	.036
Self-Esteem	.010	.036	—	−.019	.021	.065	.098
R^2 Change	.002	.001	—	.001	.001	.004	.007
Step 5: Interaction Terms							
Age × Education of Head of Household	−.037	.046	—	−.182*	−.034	−.123	.247
Age × Family Conflict	.002	.096*	—	.021	−.131	.009	.063
Age × HOME Score	−.020	−.016	—	.014	−.139	.018	.081
Age × Income-to-Needs Ratio	.013	.002	—	−.145	−.185	.270	−.018
R^2 Change	.002	.010	—	.029*	.030	.013	.029
Total R^2 (Adjusted)	.127***	.069***	.136**	.212***	.006	.018	.003

Note. Dashes indicate values for variables that were excluded from the model when the Hispanic American sample size was too small.

[a]European Americans (n = 1,009), African Americans (n = 682), and Hispanic Americans (n = 128). [b]European Americans (n = 303) and African Americans (n = 171).

*$p < .05$. **$p < .01$. ***$p < .001$.

principal predictors were child characteristics. Older children played more than younger children, boys played more than girls, and the gender difference was greater for older children than for younger children. The only other significant main affect in any group was for the Hispanic American families: Children of better educated parents played more games than did those of less educated parents.

For African American children, family conflict interacted with age to predict electronic game use. Follow-up analyses indicated that family conflict was related to low levels of play for younger children and to high levels of play for older children.

Educational game play. The total model accounted for over 20% of the variance in European American children's educational game play but for virtually none of the variance in African American children's educational game play. One reason is the very low frequency of such play by African American children (see Table 1). In both groups, younger children played more than did older children, and, for European Americans, girls played more than did boys. While children from higher income families played more than did children from lower income families, the difference was significant only for European Americans. In European Americans families, the age by education interaction indicated that family education was positively associated with educational game play for young children, but was associated with low percentages of educational play among older children.

Sensorimotor game play. The total variance accounted for was nonsignificant for both ethnic groups, and there were few patterns of note.

DISCUSSION

This study was designed to examine predictors of television and electronic game use for young children in three ethnic groups. The results support the prediction that the social context defining and defined by ethnic group influences children's patterns of media use and the content of the media they consume. As hypothesized, African American children watched more television and played more electronic games than did European American children, but they spent a smaller proportion of their media time on educational content. For the most part, Hispanic American children fell in between the other two groups.

Correlates of Media Use Within Ethnic Groups

Our major purpose, however, was not to compare averages but to determine whether similar child, socioeconomic, and family characteristics predicted media use within each of the three ethnic groups. Overall, the predictors tested explained less variation in both television and game play for African Americans than for European Americans. Knowing individual, demographic, familial, and parental characteristics of a child allowed for more accurate prediction of individuals' media use for European American children than for African American children. Even the truncated models used for Hispanic American children explained more variance than did the full model used for African Americans.

This result might have been explained by restricted variance for African Americans on some of the predictor or dependent variables. If African Americans were more similar to one another on these variables than were members of the other two ethnic groups, then the lower success rate of the models would be predicted. This explanation, however, does not seem to be sufficient. It is true that African Americans had less variability in income than did European Americans, but Hispanic Americans did as well. The variability in parental education was similar for European Americans and African Americans, but there was much more variability among Hispanic Americans. Furthermore, African Americans had larger variability in HOME scores, levels of parental depression, total minutes of television viewed, and total minutes of electronic games played.

Age and gender.

Although the models explained media use for Hispanic Americans and European Americans better than for African Americans, many of the predictors were similar across ethnic groups. With one exception, child age and gender characteristics were related to media use in the same way for the three ethnic groups. Older children watched more television and played more electronic games than did younger children, except in African American families where there were no age differences in television viewing. Older children spent a smaller portion of both television and game time on child-oriented material (i.e., cartoons, educational television, and games). These findings are consistent with earlier studies, suggesting that educational programming and games are not well designed to hold children's interest as they become more intellectually sophisticated and more independent of adults in their choice of media.

In all groups, boys played more video and computer games than did girls, and the gender difference was more evident among older children than among

younger children. These patterns are consistent with other studies of computer use, and they demonstrate that the gendered nature of computer and video games extends across ethnic groups in the United States.

Socioeconomic status. We found only limited support for our hypothesis that socioeconomic characteristics predict media use better for European American children than for the other ethnic groups. Although parents' education, income, and neighborhood qualities predicted less well for African American children than for the other groups, many of the patterns were similar. In European American and African American families, children of more highly educated parents watched less total television than did children with less educated parents, particularly in the preschool years. However, children's use of educational media, both television and games, was associated with parent education in European American families, but not in African American families.

Parents' education is a marker for values and lifestyles that affect parents' own viewing patterns as well as the ways in which they encourage or regulate their children's television viewing. Well-educated parents watch less television than do adults with little education, so their children are probably exposed to less television. When young children watch child-audience programs, parents are present only about 25% of the time (St. Peters, Fitch, Huston, Wright, & Eakins, 1991), so parents' influence on use of child-oriented media probably occurs through their encouragement and regulation of such media. Highly educated European American and Hispanic American parents appear to encourage educational media use more than do well-educated African Americans. This suggests that parental education may not be a marker for the same educationally oriented childrearing patterns among African Americans as among European Americans. Well-educated Hispanic American parents also have children who watched relatively few cartoons, suggesting that they provide guidance differentiating educational and noneducational programs for children.

Family income could affect media use in part because it provides resources to purchase media equipment and because it affects the range of nonmedia activities available to children. We expected that income would predict video and computer game use because more affluent families would be more likely to have the relevant equipment. There were no relations of income to total game play, but in European American and African American families, children in higher income families played more educational games.

Among African American families, those with higher incomes had children who watched more educational television and fewer cartoons, and well-educated

African American families also had children who played fewer sensorimotor games. It appears that, for this group, income may be a better indicator than education of parenting practices that differentiate educational and noneducational media use for children.

Family and parental well-being. Negative characteristics of family and parental well-being were associated with high total television viewing. Furthermore, families with more positive characteristics had children who watched more educational television. There are three potential explanations for the relationships between media use and family well-being. First, families in conflict, who have poor home environments, or who have low levels of well-being are apt to provide less adequate regulation and guidance for children's television viewing. With uninvolved parents, these children view more entertainment television. Second, parents in such households may watch more television themselves, and children may be exposed through coviewing and modeling. Third, negative family and parent qualities may motivate children to use media as an escape from unpleasant family interactions or as a means of coping with boredom in an unstimulating environment. The fact that poor quality home environments predicted viewing for older children better than for younger children suggests that this third explanation is at least partly accurate. It is noteworthy, however, that family characteristics did not predict children's use of electronic games. Whatever processes are involved appear to be specific to television rather than applying to all available electronic media.

In summary, these findings show broadly similar patterns of associations between predictors and children's media use for all three ethnic groups. There were, however, some notable differences. Despite the large variation in time devoted to media among African American children, the predictors examined in this study were less useful in explaining individual differences for this group than they were for the other ethnic groups. One reason may be that television serves specific functions for African Americans across socioeconomic groups. Earlier literature suggests that African American youths and adults use television as a window to the world of the majority culture. They also consider African American characters, sports stars, and public figures on television as sources of ethnic identity and pride. These functions are likely to be independent of particular socioeconomic and family characteristics. Therefore, variables in domains other than those included in our model must be used to account for variations in viewing among African Americans. Further research is needed to discover the specific variables that account for variations in media use among African Americans.

Comparing Children's Television Use With Electronic Game Play

Electronic games have become a major competitor for children's free time. When new media appear, they often supplant older media because they are functionally equivalent. For example, television supplanted radio and movies, presumably because it served similar functions of entertainment, of news, and of relaxation (Stein & Friedrich, 1975). If electronic games serve functions similar to television, then one might expect that the predictors of their use would be similar.

In this study, however, that was not the case. Supporting our second hypothesis, the predictors of game use were almost entirely limited to child age and gender. Child-level variables provided most of the explanatory power of the model and were related to game play in similar ways across ethnic groups. Socioeconomic characteristics were not related to total game play, but they did predict the content. Specifically, family income was positively associated with educational game use but negatively related to sensorimotor game use. None of the family- or parent-level variables were related to electronic game use. It appears that it is primarily the skills and preferences of the children, as reflected by their age and gender, that determine their own game use, not the values and characteristics of their parents and families.

Three differences between television and video games may help explain the variation in predictors between the two media. First, parents and other adults may have different beliefs about the potential value or harm of these two media. Games are interactive, a quality that many people consider preferable to the passive nature of television viewing. As a result, parents with a wide range of socioeconomic and family attributes may be less apt to believe that they should regulate or restrict game play. Parents may also know less about electronic games than they do about television, making it likely that they have little basis for providing guidance to their children. While educational games provide specific lessons for younger children, as a whole, electronic games serve mainly as play and recreation for children. Parents, even those with higher levels of education, may not encourage or discourage general electronic game use (except perhaps extremely violent games) any more than they do other forms of play.

Second, parental modeling and coviewing influence children's television use, but it is less likely that parents provide models of electronic game play or share in their children's use of electronic games. In the average American family, the television is a focal point of attention and interaction. Because families spend large amounts of time watching television together, much of young children's viewing occurs in conjunction with adult family members (Andreasen, 1994; Sang,

Schmitz, & Tasche, 1993). Video games, on the other hand, occur in a very different context. Children are likely to play video games alone or with other children without an adult actively involved. On the other hand, if family conflict and negative family characteristics led children to use media as an escape from aversive family interactions, one would expect family processes to predict game play as well. The absence of such patterns casts doubt on the escape hypothesis.

Third, although television and electronic games serve the functions of entertainment, and occasionally education, there are also important differences. Television provides stories, characters, social interactions and relationships, and information about the larger world. Television is a window on the social world for children and families, albeit sometimes a distorted one. By contrast, most electronic games are just that—games. They involve challenge, speed, competition, and skill. Educational software teaches skills and information. Hence, they do not serve many of the social functions that television serves.

Our analyses provide information relevant to the social concerns about economic differences in access to opportunity to learn computer skills—the digital divide. Family income did predict the amount of time children spent on educational computer games. Educational software often requires a computer, whereas other games can be played on relatively inexpensive platforms (e.g., Sony PlayStation). This finding supports concern that children have unequal access to the most potentially valuable forms of interactive computer experience.

Summary and Conclusions

Overall, we found that while the predictors of media use are in many ways similar across ethnic groups, the complete model was less successful at accounting for media use among African American children than among children in the other two groups. Considering educational media, parental education is a better indicator of use for European American and Hispanic American children while income is more applicable to African American children's use. Furthermore, our data show that electronic games and television viewing have quite different determinants. It would be useful for future research to investigate the functions served by television and video games in each of the three ethnic groups studied, as well as the factors relevant to media use of ethnic minorities not explored in this study, to understand how children's cultural background affect the socialization of their media use habits.

These findings provoke as many questions as they answer. There are several plausible explanations for the patterns found. As research continues on children's use of new media, it is important to remember that much of this activity takes place

in a family setting that is located within a larger social context that includes the child's ethnic group. We need to learn a great deal more about how different media both impact and are influenced by the child's familial and social environment.

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