

# Correlations of Media Habits Across Time, Generations, and Media Modalities

Grace S. Yang and L. Rowell Huesmann

*This study investigates media uses and preferences across two generations and across television and video games. Path analyses using data from 335 families show that the number of hours of television viewed by the first generation (parents at age 30) positively predicts the amount of television use by their offspring in the second generation 18 years later, as well as their own amount of television viewing at that time. The analyses also show that the amount of video game playing among offspring is significantly related to their own as well as their parents' concurrent TV use. While there is no similar longitudinal correlation between a preference for violent television by parents at age 30 and that of their offspring 18 years later, parents' violent television preferences at age 48 are positively correlated with their offspring's concurrent preference for violent television content. Additionally, the violent television preferences of offspring are positively correlated with their own preferences for violent video games. These effects were found while controlling for SES, intellectual achievement, and offspring gender. These results suggest that the amount of time devoted to media use and preferences for violent media generalize across media modalities and are transmitted across generations.*

As violent entertainment media have become increasingly popular among children (Buchman & Funk, 1996; Comstock & Scharrer, 2007), a growing body of research has documented their potential negative effects on children, especially with regard to aggression (e.g., Anderson et al., 2003). Despite increased attention to and concern about the detrimental consequences of violent media, relatively little media research has investigated whether the amount of time children spend with

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**Grace S. Yang** (Ph.D., University of Michigan) is a postdoctoral research fellow in the Department of Psychology at the University of Michigan. Her research interests include children and the media, media violence and aggression, and media processes and effects.

**L. Rowell Huesmann** (Ph.D., Carnegie-Mellon University) is Amos N. Tversky Collegiate Professor of Psychology and Communication Studies at the University of Michigan and director of the Aggression Research Program in the Research Center for Group Dynamics at Michigan's Institute for Social Research. His research focuses on understanding the psychological foundations of aggressive behavior and in particular on understanding how the observations of others behaving violently influences the development of a youth's aggressive and violent behavior.

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the media and their preference for violent content extend between different domains of media. For example, do youth who watch more television also play more video games? Do youth who prefer violent television also prefer violent video games? Moreover, it is unclear to what extent the media use of one generation relates to media use in the next generation.

The current study attempts to explore these issues by examining whether there is consistency in the preference for violence across media modalities. That is, we explore whether individuals who are attracted to one type of media violence (i.e., television) are also attracted to violence in other types of media (i.e., electronic games). This study also investigates whether the amount of media use and the preference for violent content demonstrated by offspring can be predicted from their parents' earlier and current amount of media use and preference for violent media. We begin by introducing some of the possible theoretical explanations for the cross-generational continuity in media use and preference.

### **Parental Influences on Children's Media Use and Preference: Observational Learning**

Observational learning theory (Bandura, 1977, 1986) and its more recent elaborations (Huesmann & Kirwil, 2007) posit that children acquire specific social behaviors that they see their parents performing. Observation then leads to imitation of the observed behavior, and such imitation is strengthened by identification with the model and reinforcement of modeled behavior (Bandura, 1977; Huesmann & Kirwil, 2007). Children's tendency to observe and model their parents' behavioral patterns, as posited by observational learning theory, has special relevance to the formation of media habits, as children's learning and imitating of their parents' mass media use can be facilitated by reinforcement and identification. Parents' general orientations and specific use of mass media may also influence children's understanding and learning of how and to what extent to use mass media. For instance, children who grow up with parents who habitually watch large amounts of television (or even just leave the television on as background noise) may gradually adopt similarly extensive viewing patterns.

This suggests that, as Bandura (2009) maintains, "Modeling is not merely a process of behavioral mimicry, as commonly misconstrued" (p. 101). Instead, learning and modeling in connection with mass media practices may be best understood as transferring norms and values about mass media uses, which can lead to habitual modes of behavior that are consistent with transported norms and values. This modeling process may occur through a conscious or unconscious process. Regardless of whether this process is perceptible to parents and/or children, however, social learning theory assumes that children's development of media behavior is, at least in part, based on the observation and learning of their parents' media uses.

Huesmann and his colleagues also argue that, throughout the observational learning process, children not only observe and learn behavior, but also internalize

the values, beliefs, and attitudes that are associated with the process and context of their learning (Huesmann, 1997, 1998; Huesmann & Kirwil, 2007). Children whose parents expose them to a lot of television could thus come to believe that heavy television viewing is normal and even desirable. Consequently, children may develop positive values and attitudes toward television viewing and adopt media viewing habits consistent with those views. In this sense, parents' viewing hours may be an influential determinant of their children's own viewing time.

Several researchers (e.g., Fletcher, 2006; McLeod & Brown, 1976) have reported an empirical connection between the mass media use of parents and children. Perhaps the strongest evidence of the causal influence of parental viewing habits on those of their children was demonstrated by Johnsson-Smaradgi (1983; cited in Rosengren, 1994 and Rosengren & Windahl, 1989). Johnsson-Smaradgi (1983) examined the long-term influence of parents' television consumption on that of their children when the children were 11, 13, and 15 years old. The study showed a strong causal relationship between the parents' levels of television viewing and their children's viewing levels. This influence was still found after controlling for the child's gender and the parents' social class in the model. As Rosengren (1994) effectively points out, among other psychological mechanisms, this finding can best be interpreted in terms of social learning. Although it is hard to believe that the relation between parents' and children's viewing is not reciprocal, at least to some extent, this study seems to rule out the possibility of "reversed modeling"—that is, that parents' television viewing is influenced by that of their children.

Similarly, children may arrive at content preferences that mirror their parents' media choices through observing their parents' use of the mass media. Children learn from their parents to like or dislike certain media genres or programs. Of course, according to social learning theory, children would not only need to observe their parents consuming violent media but also be sufficiently motivated to engage in the same behavior. As Bandura (1982, 2009) posits, a person's motivation to enact observationally learned behavior is influenced by the anticipated outcome of his behavior. If violent media is not appreciated and even rejected by parents, children may become less motivated to seek violent content in their media viewing practices. This is because, as Bandura's expectancy outcome theory explains, behavioral patterns are most likely to be adopted and firmly established when a person believes that his or her behavior will lead to valued outcomes rather than adverse consequences (unrewarding or punishing outcomes; Bandura, 2009). Thus, children would be encouraged to pursue activities that give them a sense of approval (by their parents) and contentment gained from matching (or fulfilling) their parents' valued standards and practices in addition to those that allow them to avoid any negative parental sanctions.

Accordingly, parents who frequently view violent media in the presence of their kids can foster their children's acceptance of violent norms, as well as internalization of their own values and attitudes associated with violence. Presumably, parents who dislike violent media are more likely to avoid them, providing fewer opportunities for

their children to observe them watching violent media. For this reason, along with other possible causal factors discussed in the next section, we pay special attention to parents' violent media preferences as a predictor of children's preferences for violence in both television and video games.

### **Other Factors Influencing Media Use and Preferences**

Factors other than parental media habits also affect a child's use and preferences for media, of course. For example, evidence has accumulated over the years that children from lower SES families, less educated families, and minority families often show a greater use of mass media and greater preferences for violent media (Comstock & Paik, 1991). Among possible explanations for such findings are that video games and television are less costly than other forms of entertainment for such families and that they do not have the resources to exert as much control as higher SES families (Comstock & Paik, 1991). This research also finds that a child's own intellectual ability is negatively associated with television viewing and preferences for violent programs (Comstock & Paik, 1991). In addition, the child's gender predicts differential use of media: boys tend to watch more violent television than do girls (Comstock & Paik, 1991). Researchers have also found gender, age, and individual dispositional differences in attraction to violence. For example, aggressive males with a high need for sensation tend to be more intrigued by violent images and content in the media than non-aggressive individuals, who are less interested in seeking sensation. (Gunter, 1985; Zillmann & Bryant, 1985).

### **Theoretical Explanations for Attraction to Violence across Media Modalities**

Several theoretical perspectives suggest some possible explanations for individual difference in attraction to violent media. Individuals may vary in the extent to which they identify with characters and experience vicariously positive emotions from watching violence (Huesmann & Eron, 1986; Heusmann, Moise-Titus, Podolski, & Eron, 2003). Individuals may also vary in their need for sensation (Zuckerman, 1979) or need for social comparisons (Brewer & Weber, 1994; Festinger, 1954) to make them feel good. Huesmann et al. (2003) have suggested that aggressive children are more likely to be attracted to violent media, because they perceive aggressive media characters as similar to themselves, and/or more attractive. Since the object of their comparison is aggressive characters in the media, aggressive children might perceive their aggressive behavior as more acceptable and justified. Consequently, aggressive children feel better about themselves, because "viewing media violence convinces them that they are not alone [in their aggression]" (Huesmann et al., 2003, p. 202).

This theory also fits into the concept of the “downward spiral effect” suggested by Slater, Henry, Swaim, and Anderson (2003). The idea is that more aggressive individuals are particularly attracted to more violent media, and observing or playing with violent media in turn makes them more aggressive.

Regardless of the exact process, if such *dispositional* differences exist, one should find that attraction to violence generalizes across media modalities. None of these theories suggest that attraction to violence should be limited to one kind of media violence. That is, individuals who are attracted to violence in one type of media should also be attracted to violence in other types of media, regardless of which of these theoretical explanations has the most validity.

## Current Study

Building on the theoretical arguments discussed thus far, the current study tests a set of hypotheses about the continuity of media use and preference for media violence across time, generations, and modalities. The study uses an existing longitudinal data set that does not allow specific hypotheses to be tested about the reasons for the relations but only tests whether the relations predicted by the above theories exist. The first set of hypotheses ( $H_1$ – $H_{2b}$ ) deals with the continuity of *media use across modalities* (i.e., television and video games), and *across generations* (i.e., parents and their offspring).

$H_1$ : Offspring who spend more time viewing television will also spend more time playing video games.

$H_{2a}$ : Parents’ time spent viewing television will be positively related to their offspring’s time spent viewing television.

$H_{2b}$ : Parents’ time spent viewing television will be positively related to their offspring’s time spent playing video games.

The second set of hypotheses ( $H_3$ – $H_{4b}$ ) deals with the continuity of preference for *violent media across modalities* (i.e., television and video games), and *across generations* (i.e., parents and their offspring).

$H_3$ : Offspring’s preferences for violent television will be positively related to their preferences for violent video games.

$H_{4a}$ : Parents’ preferences for violent television will be positively related to their offspring’s preferences for violent television.

$H_{4b}$ : Parents’ preferences for violent television will be positively related to their offspring’s preferences for violent video games.

In addition, we examined the role of important demographic variables, such as child’s gender, intellectual ability, and SES, in influencing children’s media preferences.

## Method

### Participants and Procedures

This study analyzes data obtained from subjects who participated in the Columbia County Longitudinal Study, initiated in 1959. The sample of original subjects consisted of 856 children enrolled in the third grade in Columbia County in New York State in 1960. A large amount of data has been gathered from the original subjects and their children in four different waves of data collection between 1960 and 2001. The current study examines both the original subjects, whom we call Generation G2, and their offspring, whom we call Generation G3. We utilize data collected on the G2-parents in Wave 3 (at age 30) and Wave 4 (at age 48), and data collected on the G3-offspring in Wave 4 (when the offspring ranged from age 5 to 33). During the Wave 4 collection, 523 (61%) of the original G2 subjects were re-interviewed, and 551 of the G3-offspring of the original subjects were interviewed. In order to create a sample of independent observations on offspring, we selected the youngest child interviewed in each family. In this dataset, 13 offspring appeared twice, because both of their parents were subjects in the original study. The duplicate data for the offspring were deleted.

The resulting sample of 335 G2–G3 parent-offspring pairs is analyzed in the current study. The 335 original G2 subjects (parents), aged 48 to 49 in 2000–2001, were 51% male and 49% female. Their mean education level lies between completing some college and completing a college degree. The ages of the G3 subjects ranged from 5 to 33, with a mean age of 17.70 years. Based on the scores of the Wide Range Achievement Test, the G3-offspring fell within the average range of intellectual achievement. The sex composition of the parent-offspring pairs is nearly equivalent for all possible pairs (i.e., there are 81 pairs of sons and fathers and 78 pairs of sons and mothers; there are 88 pairs of daughters and fathers and 88 pairs of daughters and mothers for a total of 335 pairs). While the attrition over the course of the study was significant, none of the key variables was substantially restricted in range due to the attrition.

### Variables and Measures

Each offspring's (each G3's) intellectual achievement was assessed by the Wide Range Achievement Test (WRAT). This standardized test measures the following four basic academic skills: 1) reading, 2) spelling, 3) sentence comprehension, and 4) mathematical computation. A mean standardized score of these four subsets of the WRAT was used as an indicator of each offspring's intellectual achievement in this study.

Each parent's (each G2's) SES was assessed by the mean of the standardized score for the level of education they completed by age 48 and the prestige of the occupation they held. Although these data were collected when the G2-parents

were aged 48, it seems fair to assume that it can serve as a good approximation of the SES for all of adulthood after age 30.

G3-offspring provided the hours of time they spent watching television and playing video games during different time periods on weekdays and weekends. Each G3-offspring's amount of television use and video game playing was represented by a mean score of weekly amounts for each medium. Likewise, G2-parents' amount of television use (in Wave 3 and Wave 4) was calculated in the same way.

Both the G3-offspring's and the G2-parents' preferences for violent media in the current study were assessed by means of two open-ended questions included in a 20-item media survey questionnaire. Both the G3-offspring (in Wave 4) and the G2-parents (in Wave 3 and Wave 4) were asked to list their three favorite (regularly scheduled) television shows and their three favorite video games. Each title listed was coded for "violence" by multiple raters, who only rated the television shows and video games they had actually seen. The rating scheme follows the established theory that visible physical violence is more influential than invisible violence. According to Huesmann and Eron (1986), invisible violence refers to implied violent acts that are not shown (e.g., a poisoning inferred from seeing a victim alive and then later dead, but without anyone shown poisoning the victim). The violence scores assigned to programs or games by the raters ranged from 0 to 4. "No violence, visible or invisible, or perhaps a very little invisible violence" was rated 0; "very little visible violence or a little to medium invisible violence" was coded 1; "a lot of invisible or implied violence with only little visible violence" was rated 2; "medium to high visible violence" was coded 3; "high visible violence" was rated 4. Before a rater was used, the rater went through training and then pre-testing in which he or she had to demonstrate inter-rater reliability with prior raters.

The overall violence score assigned to a program or game was the average of the scores assigned by all the raters who had seen the program or played the video game (2 to 25). However, if the score a rater assigned to a program or game was more than one unit discrepant on the 0 to 4 rating scale from the average score of all other raters, that rater's score was not added in to the average. For the final violence ratings obtained in this way, the correlations between all possible pairs of raters ranged from .68 to .93 for rating television and .62 to .92 for rating video games. Overall inter-rater reliability was then computed with Cronbach's alpha by treating raters conceptually as items on a test and treating programs or games as instances of testing and using item (rater)-total correlations to compute the statistic. Computed in this way, the overall inter-coder reliability (Cronbach's alpha) was .99 for television and .98 for video games.

Each G3-offspring got an overall score for preference for TV violence and an overall score for preference for video game violence in Wave 4, and each G2-parent got an overall score for preference for TV violence in Wave 3 and in Wave 4. However, a violent video game preference score could not be computed for the G2-parents (in either Wave 3 or Wave 4), because the majority of parents did not list even one favorite video game; so any resulting composite would have had missing scores for over half the sample.

## Results

Table 1 shows the Wave 4 mean scores and standard deviations on the media use and preferences for violence variables for G3-offspring and for G2-parents.

### Analysis Technique

The proposed relations are tested using two separate sets of structural equation models: one for media use (H<sub>1</sub>–H<sub>2b</sub>) and one for preference for TV and video game violence (H<sub>3</sub>–H<sub>4b</sub>). The analyses were conducted using a full-information maximum-likelihood (FIML) estimation procedure in the AMOS program, which effectively and robustly imputes missing data. We judged model fit using multiple estimators: the Chi-Square Index ( $\chi^2$ ), Comparative Fit Index (CFI; Bentler, 1989), Normed-Fit Index (NFI; Bentler & Bonnet, 1980), and the Root Mean Square Error Approximation (RMSEA; Browne & Cudeck, 1993). Although different criteria have been used by different researchers, it is generally agreed that model fit is considered good if  $\chi^2 > .05$ , CFI  $> .95$ , NFI  $> .95$ , and RMSEA  $< .06$  (Hu & Bentler, 1999; McDonald & Ho, 2002).

As described earlier, parents' TV viewing hours and violent media preferences were assessed at two points in time (at age 30 and at age 48), whereas offspring's media uses and preferences were assessed at only one point in time, when their parents were interviewed at age 48. When the media uses and preferences of

**Table 1**  
**Descriptive Statistics of Children's and Parent's Media Uses and Violent Media Preferences**

	All		Male		Female	
	Mean	SD	Mean	SD	Mean	SD
Children						
TV viewing hours	19.91	14.74	20.64	14.52	19.34	14.95
VG playing hours	6.34	10.71	10.57 <sup>a</sup>	13.52	2.78 <sup>a</sup>	5.54
Violent TV preference	1.39	.84	1.60 <sup>b</sup>	.88	1.21 <sup>b</sup>	.78
Violent VG preference	1.83	1.02	2.20 <sup>c</sup>	.85	1.30 <sup>c</sup>	1.00
Parents						
TV viewing hours	18.79	13.33	19.94	14.11	17.61	12.41
Violent TV preference	1.14	.69	1.23 <sup>d</sup>	.70	1.05 <sup>d</sup>	.67

Note. Means with the same superscript within the same row are significantly different (see text).

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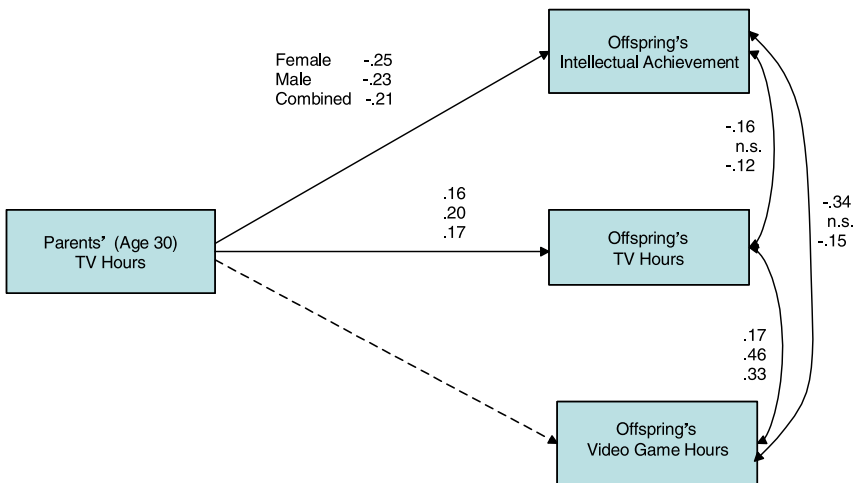
parents and offspring are measured at the same time, causal effects could operate in multiple directions. Consequently, we construct a series of models that tests alternative possibilities with the goodness of fit statistics suggesting which model is the most plausible.

The first stage of analysis involves examining the causal direction between parents' (age 30) and their offspring's later media uses and preferences. The second stage of analysis involves examining the potential mediating effect of parents' (age 48) media uses and preferences on the relation between their earlier media uses and their offspring's media uses and preferences.

### Testing Causal Directions

Figure 1 shows a path model representing the observed relation between age-30 parents' amount of television use and, separately for male and female offspring, the amount of television and video game use of the G3-offspring 18 years later. We conducted a two-group path analysis to see if there are any gender differences in the relationship between parents' and offspring's media use. Our analysis of this model shows that it fits the data adequately with  $\chi^2 = 2.951$  ( $df = 1$ );  $p = .086$ ; CFI = .968; NFI = .964; RMSEA = .075. An examination of the parameters in this

**Figure 1**  
**The results of path model relating parents' (at age 30) and offspring's amount of media use, controlling for offspring's intellectual achievement.  $\chi^2 = 2.951$  ( $df = 1$ );  $p = .086$ ; CFI = .968; NFI = .964; RMSEA = .075. Solid lines represent significant paths with  $p < .05$ , and dashed lines indicate insignificant paths with  $p > .05$ . The numbers at the top, middle, and bottom represent standardized path coefficients for female offspring, male offspring, and both sexes combined, respectively.**

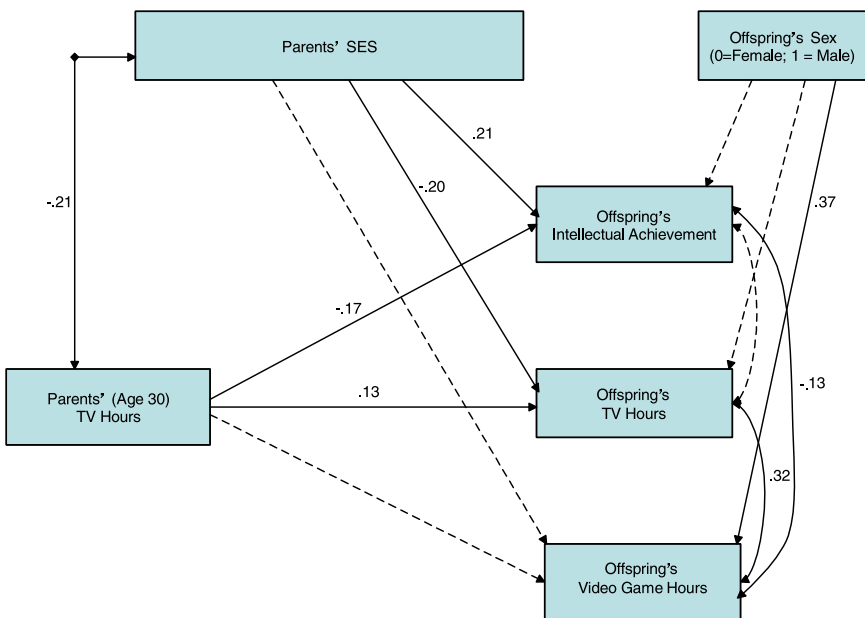


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model indicates that the relations specified in the model do not seem to vary much across male and female offspring. Consequently, we recomputed the model as a single group model with sex as another predictor variable. The resulting model fit the data better than the model with sex as a grouping variable ( $\chi^2 = 0.966$  ( $df = 1$ );  $p = .326$ ; CFI > .999; NFI = .991; RMSEA < .001), and the path coefficients for the significant longitudinal effects remained significant and did not change much ( $\beta = .17$ ,  $p < .05$  from Parent's TV Hours to Offspring's TV Hours;  $\beta = .21$ ,  $p < .001$ , from Parent's TV Hours to Offspring's Intellectual Achievement). As a result, all subsequent models for predicting media use will be one-group models with sex as a predictor.

In Figure 2, we present an expanded model that includes the parent's SES as well as the offspring's sex. This model fits the data very well, with  $\chi^2 = 2.016$  ( $df = 2$ );  $p = .365$ ; CFI > .999; NFI = .986; RMSEA = .005. An examination of the parameters in this model confirms that independent of effects due to the offspring's sex or the parent's SES, the parents' amount of TV viewing at age 30 significantly positively predicts their offspring's amount of TV viewing 18 years later. With 18

**Figure 2**  
**The results of path model relating parents' (at age 30) and offspring's amount of media use, controlling for parents' SES, and offspring's sex and intellectual achievement.  $\chi^2 = 2.016$  ( $df = 2$ );  $p = .365$ ; CFI > .999; NFI = .986; RMSEA = .005. Solid lines represent significant paths with  $p < .05$ , and dashed lines indicate insignificant paths with  $p > .05$ . The numbers represent standardized path coefficients that are significant with  $p < .05$ .**



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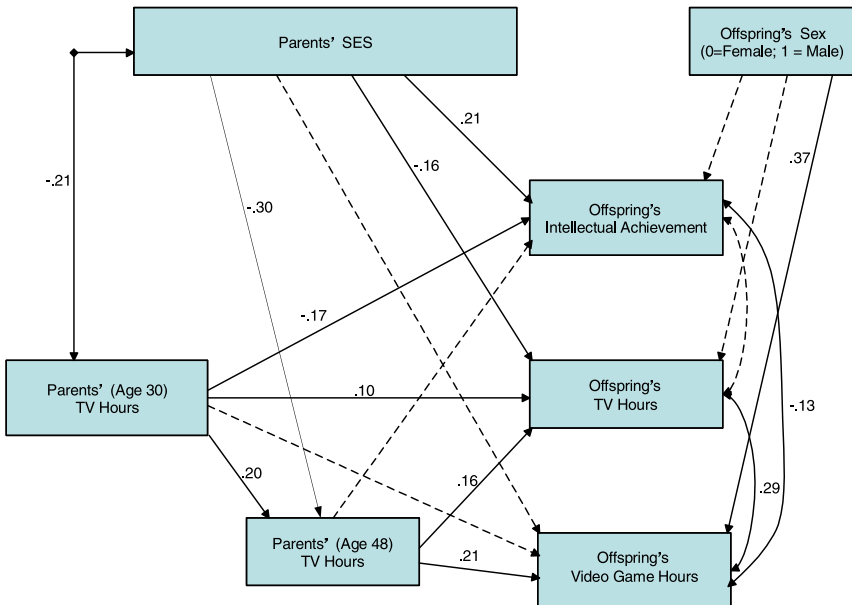
years separating the measurement period, it would be unreasonable to think that this longitudinal relation could result from the influence of offspring on their parents.

### Testing the Hypothesized Relations

In Figure 3, we add into the model the parents' amount of TV viewing at the time their offspring were assessed (when the G2-parents are aged 48). This model assumes that the parents' amount of TV viewing at age 48 is a function of their amount of TV viewing earlier in life (at age 30) and their adult SES. In turn, their offspring's amount of TV viewing at the same point in time is assumed to be a function of the offspring's sex and intellectual achievement level together with the parents' current and past amount of TV viewing. Of course, there are other unmeasured variables that probably affect the amount of viewing; however, our analysis of this model shows that the hypothesized relations fit the data well:  $\chi^2 = 2.587$  ( $df = 4$ ),  $p = .629$ , and  $CFI > .999$  and  $RMSEA < .001$ .

Figure 3

The results of path model relating parents' (at age 30 and at age 48) and offspring's amount of media use, controlling for parents' SES, and offspring's sex and intellectual achievement.  $\chi^2 = 2.587$  ( $df = 4$ );  $p = .629$ ;  $CFI > .999$ ;  $NFI = .988$ ;  $RMSEA < .001$ . Solid lines represent significant paths with  $p < .05$ , and dashed lines indicate insignificant paths with  $p > .05$ . The numbers represent standardized path coefficients that are significant with  $p < .05$ .



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An examination of the parameters in this model (shown in Figure 3) confirms most of our hypotheses. As predicted in H<sub>1</sub> and shown already in Figure 2, offspring's amount of TV viewing was significantly related to their amount of video game playing ( $\beta = .29, p < .001$ ). That is, offspring who watch more television also play more video games and vice versa. Parents' amount of TV viewing at age 48 was significantly and positively predicted by their TV use at age 30 ( $\beta = .20, p = .002$ ) and related to their adult SES level ( $\beta = -.30, p < .001$ ). As predicted in H<sub>2a</sub> and H<sub>2b</sub>, parents' current amount of TV viewing in Wave 4 significantly predicted their offspring's amount of TV use ( $\beta = .16, p = .012$ ) and of video games ( $\beta = .21, p < .001$ ) in Wave 4, when controlling for the offspring sex and intellectual achievement level. In addition, the model confirms others' previous findings that males play video games more ( $\beta = .37, p < .001$ ) and that intellectual achievement is negatively related to video game play ( $\beta = -.13, p = .030$ ) and positively to family SES ( $\beta = .21, p < .001$ ).

We undertook the same analyses for our second set of hypotheses (H<sub>3</sub>–H<sub>4b</sub>), but we only report our final model here. Figure 4 represents the observed relation between parents' and offspring's preference for violent TV shows and violent video games. This model fits the data well with  $\chi^2 = 6.793$  ( $df = 3$ ),  $p = .079$ , CFI = .962, and RMSEA = .060.

In contrast to the model in Figure 3 for amount of media use, this model reveals that parents' preference for violent television programs in their early adulthood (age 30) was not significantly associated with their preference for violent TV in their middle adulthood (age 48). Nor did their preferences for violent television in their early adulthood have significant effects on their offspring's violent media preferences 18 years later.

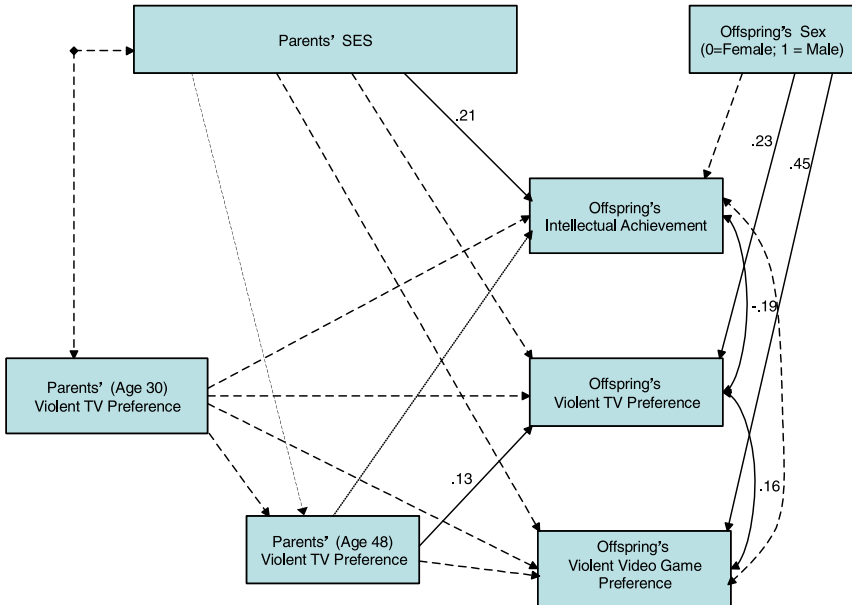
As predicted in H<sub>3</sub>, Figure 4 shows that offspring's preferences for violent television shows were significantly and positively related to their preferences for violent video games ( $\beta = .16, p = .027$ ). That is, an offspring who liked violent television shows also liked violent video game playing, or vice versa. As predicted in H<sub>4a</sub>, parents' preferences for violent television shows at age 48 were significantly related to their offspring's preferences for violent television ( $\beta = .13, p = .021$ ). While parents' current preferences for violent TV (at age 48) were not significantly directly related to their offspring's preferences for violent game playing ( $\beta = .01, p = .857$ ), parents' current preferences for violent television did have a small indirect effect on their offspring's video game playing (i.e.,  $.13 * .16 = .02$ ) through their offspring's preference for violent TV.

### The Role of Various Demographic Variables: Intellectual Achievement, Gender, and SES

Because parents' SES, the offspring's gender, and the offspring's intellectual achievement are included in the models of Figure 3 and 4, one can conclude that the

Figure 4

The results of path model relating parents' (at age 30 and at age 48) and offspring's violent media preferences, controlling for parents' SES, and offspring's sex and intellectual achievement.  $\chi^2 = 6.793$  ( $df = 3$ );  $p = .079$ ; CFI = .962 NFI = .947; RMSEA = .060. Solid lines represent significant paths with  $p < .05$ , and dashed lines indicate insignificant paths with  $p > .05$ . The numbers represent standardised path coefficients that are significant with  $p < .05$ .



relations revealed by these models are independent of the parents' SES and the gender or intellectual achievement of the offspring. The models also reveal that when parents' SES has an effect on media use, it is negative (lower SES families use more media). Furthermore, when intellectual achievement has a relation to media use or preference for media violence, it is the offspring with lower intellectual achievement who use more media and have a greater preference for violent media. Finally, as expected, the models show that male offspring spend more time playing video games and have a greater preference for violent media than do female offspring.

Finally, it is worth pointing out that the model predicting media use accounts for 29.4% of the variance in offspring's amount of media use (both television and video games) and 29.9% of the variance in offspring's preference for violent media, according to the squared correlations for the model.

## Discussion

The purpose of the current study was to test the link between parents' media habits and the formation of their offspring's media habits, as well as the links between the offspring's own media uses across the modalities of television and video games. Our findings suggest that family environment plays a role in shaping the second generation's media preferences and use. Parents' amount of television use at age 30 directly influenced their offspring's amount of television use 18 years later, even though most offspring were living apart from their parents. In addition, the parents' amount of television use at age 30 indirectly predicted their offspring's amount of video game play 18 years later.

Another key finding emerging from the current analysis is that the violent media preferences of the G3-offspring are influenced by the concurrent preferences of their parents at age 48, but not directly by the earlier preferences of their parents at age 30. Since most of the G2-parents studied (1952 birth cohort) watched television more regularly than they played video games (over half, when they were 48, said they had no favorite video game), it is more likely that their offspring directly observed and mimicked their parents' violent television viewing than their interactive game playing.

As described earlier, an observational learning perspective offers a plausible explanation for the present study's findings. Children gradually acquire the attitudes and values associated with their parents' use of leisure time. When children grow up in families in which television use is high, they tend to adopt the habit of using television to fill leisure time. As new media, such as video games, emerge, the children's preferences for filling leisure time with screen media generalize to filling it with video game play. The scripts they acquire for filling leisure time with media use and the positive attitudes they adopt toward media use occur because they have observed this kind of use of leisure time in their own families (Bandura, 2009; Huesmann, 1997, 1998). These theoretical perspectives on attitude formation could further explain why positive attitudes toward visual media use can be acquired through their parents' media use.

Social psychologists argue that attitudes toward an object or a person stem from emotional reactions to the object or person, and positive or negative attitudes are formed depending on the extent to which one comes to believe that the "attitude object" will bring about desired or undesired outcomes (Fazio & Olson, 2007, pp. 123–139). Thus, attitude formation can be seen as a function of one's beliefs and their evaluative implications (Anderson, 1982; Fishbein & Ajzen, 1975). Bandura's theorizing on the acquisition of affective proclivities provides further support for this view. According to Bandura (2009), "observers can acquire lasting attitudes, emotional reactions, and behavioral proclivities toward persons, places, or things that have been associated with modeled emotional experiences" (p. 102). Thus, an offspring's adoption of positive attitudes toward visual media use can result from the acquisition of positive attitudes from their parents' endorsement of visual media use and their own positive emotional experience of and gratification from viewing

such media at the same time. Empirical evidence from social psychology literature demonstrates this point. Previous research has shown that positively reinforced attitudes are more likely to occur, and such effects tend to persist longitudinally and across different settings (Hildum & Brown, 1956).

Researchers have pointed out that one's attitudes and judgments about the appropriateness of one's behavior can influence the likelihood of one's own enactment of the behavior (Fishbein & Ajzen, 1974; Huesmann & Guerra, 1997). According to this view, an offspring's positive attitudes toward visual media are likely to be formed if the offspring comes to believe that the preference for visual media will be perceived as favorable by his or her parents (who also have a proclivity for visual media), and if the offspring thinks that his or her development of preferences for visual media are normal and even desirable.

Given these learning processes and the longitudinal relations that were found for the amount of media use, why was there no relation between the parents' age 30 preferences for violent media and their own and their offspring's preferences 18 years later? The most likely explanation is that preferences for types of content are influenced much more by concurrent factors than by prior preferences, and thus show little continuity over time. In fact, most longitudinal studies of media violence have shown very low continuity over time in preferences for violent media (Eron, Huesmann, Lefkowitz, & Walder, 1972; Huesmann et al., 2003).

Additionally, the importance of concurrent factors in determining preference for the type of media use is supported by uses and gratifications theory. The uses and gratifications theory posits that people select and use media to satisfy their various current cognitive and affective needs and motives (Katz, Blumler, & Gurevitch, 1974; Katz, Blumler, Gurevitch, Haas, 1973). These distinct personal needs may then influence the gratification individuals seek from mass media, which, in turn, may influence typical patterns of their media exposure and usage. Scholars in the uses and gratifications tradition have identified several motives for general media use (e.g., companionship, surveillance, social utility, habit, and passing time) yet these dimensions have seldom been tested as motivations for watching "violent" media. One of the very few studies that did identify a number of motivational factors for watching violent television reported that passing time, unwinding, entertainment, information, social interaction, and arousal are motivations for watching television violence (Haridakis & Rubin, 2003).

Other studies found that current mood states influence the media content that individuals selectively consume (e.g., Anderson, Collins, Schmitt, & Jacobvitz, 1996; Hakanen, 1995). These findings suggest that one's current expectations and motives for watching violent media, especially those pertaining to affective states, can be thought to differentially affect media choice and behavior (e.g., content selection and selective viewing). The finding in the present study that offspring's preferences for violent media were predicted by their parents' concurrent preferences lends additional support to the theory that concurrent determinants influence one's violent media preference.

Equally intriguing to the relations we found between parent and offspring uses and preferences was the finding that an offspring's preference for violent content was *not* limited to one type of medium but extended across types of media. In our findings, an offspring's preference for violent television viewing was directly associated with his or her preference for violent interactive video game playing. This finding suggests that a person's fondness for violent video games is especially high among those who favor violent content in television and especially low among those who do not like violent content in television. As indicated in violent media and aggression research, violence in the form of interactive media, such as electronic games, may have even more powerful harmful effects than non-interactive media such as television, because the interactive nature reinforces violent behavior through repetition, reward, and realism (Anderson & Bushman, 2001). The fact that offspring who enjoy and partake in one are more likely to enjoy and partake in the other has important implications for the offspring's development of aggressive cognitions and behaviors in light of published research regarding the effects of both traditional and interactive media violence on aggression (Anderson & Bushman, 2001).

Too few G2-parents played video games to provide adequate data on this topic, but it seems likely from these data that the imitation of media use within families is not modality specific (television vs. video games) and that general preferences, such as violent versus non-violent preferences, are passed on from one generation to the next and apply across modalities.

Despite some interesting findings, this research is not free of limitations. Although this research design examined the influence of a parent's media use and content preferences on those of his or her offspring, parents' media use and preferences are, of course, not the sole factor influencing their offspring's violent media use and preferences. We were not able to measure such potentially important personality factors as sensation seeking or emotional predispositions, nor did we assess contextual factors, such as the presence of a television set in a child's bedroom. Throughout a child's socializing development, other agents such as his or her friends' preferences, and neighborhood or school violence in a child's environment can also affect a child's media choices and preferences for violent content (Anderson et al., 2003). The importance of these concurrent factors in a youth's life is indicated in our data by the lack of strong continuity over time in preferences for violent media.

Another limitation of this study results from the range of G3-offspring participants' ages. As indicated earlier, G3-offspring ages ranged from 5 to 33 with a mean age of 17.70 years and more than 50% under 18. The G3-offspring's age range extends far above the typical ages of individuals who can be referred to as "children." Thus, rather than interpreting and applying the findings of this study to young children's development, these findings should be viewed as demonstrating intergenerational transmission of violent media uses and preferences.

Despite these several limitations, the current study's findings contribute to the media uses and gratifications literature as well as the media violence literature. Future studies should explore the process through which children come to develop and adopt the values, norms, and practices associated with parents' media habits



and the situational conditions that facilitate or impede such a process, as well as the individual differences in the vulnerability of such learning effect.

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