Parental Mediation of Children's Television and Video Game Use in Germany:

Active and Embedded in Family Processes

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Abstract

In a survey study, 158 dyads of German parents and their nine to 12 year-old children reported on their television and video game consumption, parental mediation strategies, and family climate. Parents also reported their beliefs concerning media effects. We found that mediation strategies differ from acknowledged media usage conceptions in that parents play a more active role than previously assumed. Restrictive mediation comprises rules and restrictions, but also parents' educative explanations that media do not reflect reality. Patronizing mediation includes shared media consumption, but also parents commenting on media contents. Pointing out and emphasizing socio-emotional features in the media (e.g., empathy) characterizes active-emotional co-use (AEC). Regression analyses revealed that parental fear of negative media effects predicted both AEC and restrictive mediation. Children and parents' congruent perceptions of family interactions predicted AEC and patronizing video game mediation. Overall, positive ratings of family interactions were associated with children using media less frequently.

Keywords: parental mediation, children, television, video games, family interaction, media effects.

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Electronic and interactive media have become an integral part of everyday life,

especially welcomed by young people (Television Bureau of Advertising [TVB], 2010). It is

not surprising that the potential effects of excessive media use (e.g., Gentile et al., 2011;

King, Delfabbro, & Griffiths, 2010) and sexually explicit or violent content (e.g., Wilson,

2008) on children and their development have drawn immense public attention. First and

foremost, it is the parents and caregivers who are worried about media effects and therefore

seek to actively regulate media use in consistency with family norms and standards. We

specifically hypothesize that all forms of mediation strategies are inherently based on active

parental involvement. Additionally, video gaming might be more challenging to regulate than

television (TV), because the child expert mostly plays alone in his or her room. In the present

study, we therefore investigated: (a) whether there are differences in mediation between

media types (i.e., TV and video games [VG]), and (b) the factors that best predict parents'

choice of mediation strategy.

Types of Electronic Media

Due to their specific characteristics, TV and VG differ with regard to the effects they

may have on the users (Buckley & Anderson, 2006; Carnagey & Anderson, 2004). For

instance, VG are superior to TV with regard to the intensity and frequency with which

violence is being depicted (Wilson, 2008). More generally, a constant pressure to act is put on

the players in most VG, forcing them to continuously focus on ongoing events. In contrast,

TV viewers often engage in additional activities (e.g., holding conversations, doing domestic

work), thereby paying less attention to the program. Violent video game content thus receives

more attention than violence in TV programs (e.g., Melzer, Happ, & Steffgen, 2010).

In addition to these differences, video games constitute a recent phenomenon,

especially embraced and used by children and adolescents, who grow up using VG as a 'natural' form of entertainment. In contrast, many parents are less experienced with electronic games, as they grew up with TV as key medium. This lack of experience with VG may lead to parents' greater anxiety and fear of negative effects, which, in turn, may affect their mediation strategies resulting in more restricted children's access to VG (e.g., Clark, 2009). In addition, those parents who did grow up with video games might base their fear of negative effects on their own (negative) experiences, their awareness of scientific findings and the public debate about the potentially harmful effects of violent VG in particular. Parental restrictive mediation was thus expected to be more intense for VG than for TV, whereas the opposite was expected for parental co-use.

Parental Mediation

Parental mediation, or media monitoring, refers to parents' proactive attempts aimed at (a) fostering positive media effects, and (b) preventing negative media influences on children and adolescents. Three forms of mediation styles have been identified—*active*, *restrictive*, and *co-use* (for a review, see Chakroff & Nathanson, 2008).

Restrictive mediation (or *cocooning*, Padilla-Walker & Coyne, 2010) comprises rules or restrictions aimed at sheltering children from the media. Rules may involve, for instance, the amount of time a child is allowed to watch TV or the specific shows that a child is restricted from viewing. For the TV medium, restrictive mediation was found to be the dominating parental strategy in families with younger children and for parents who were afraid of negative media effects (Valkenburg, Krcmar, Peeters, & Marseille, 1999).

Active mediation refers to parents explaining to and discussing media or specific media content with children, such as providing information on news reports, game shows, advertising, educational programming, or video games, but it may also comprise parents' explanations of the difference between reality and fiction. Active mediation increases

children's skepticism towards TV content (Austin, Bolls, Fujioka, & Engelbertson, 1999). In addition, parents who are worried about negative influences of VG are more likely to engage in conversations with their offspring about media use (Nikken & Jansz, 2006; 2007).

Finally, *co-operative mediation* (or *co-use*), which comprises co-*viewing* and co-*playing*, is defined as accompanying children's media consumption (e.g., watching television together with the child). Unlike active mediation, co-use does not include explicit discussions. Co-use can be either passive (e.g., when the child enters the room while the parents are watching TV, or vice versa) or intentional (e.g., when the parents ask their child to join them watching TV).

In the present study, this seemingly clear-cut view of independent mediation strategies was tested. Due to the mere presence of media in everyday life and the insistent demand of children to use media, we specifically hypothesized that active parental involvement with media consumption is an important aspect in mediation in general, irrespective of whether mediation strategies are otherwise dominated by restrictions, co-use, or critical discussions. The hypothesized active element in parental mediation may also be found in Clark (2011), who recently suggested rethinking the classical three-pillar model of mediation. Most importantly, she criticizes parental mediation theory as not taking into account "the interactions that occur between parents and children in, through, and in relationship to various forms of digital, mobile, and more traditional media" (p. 335). The present study incorporated Clark's (2011) idea of (inter-)active processes in mediation without explicitly testing her theory of a four-pillar model of mediation. If media socialization is indeed changing, we should also be able to observe this change in an extended three-pillar model that comprises active and interactive elements. This first hypothesis was tested using both confirmatory factor analyses (to test the validity of the classical three pillar model of parental mediation) and exploratory factor analyses (to test an extended three-pillar model where active mediation elements load on each mediation factor).

Recent literature discusses the preventive influence of empathy when it comes to negative media effects such as aggression (Happ, Melzer, & Steffgen, 2014). We explored if and in which mediation strategies parents train their children in perspective taking when consuming media. Therefore, specific items were added to the three mediation forms described above.

Family Climate

As media are part of everyday life, it is not surprising that they also affect family interactions. Due to its prominent placement in the living room, television has a strong social component (Nikken & Jansz, 2006), because it reinforces intergenerational family interaction and communication. In contrast, VG are often played in the children's bedroom, thus limiting social interaction with the parents (e.g., Nikken & Jansz, 2006).

Parenting has important influences on the social adjustment of children (Pettit, Bates, & Dodge, 1997). For example, supportive parenting that encourages autonomy was related to prosocial child behavior, whereas children's anti-social behavior was found for parents exerting control over their children (Valkenburg, Piotrowski, Hermanns, & de Leeuw, 2013). Additionally, family conflicts moderated the effect of media violence on adolescents' aggression (Fikkers, Piotrowski, Weeda, Vossen, & Valkenburg, 2013). Nevertheless, it has been suggested that co-playing may improve the quality of family relations (Durkin & Barber, 2002; as cited in Eklund, 2009). Therefore, we expected a positive correlation between the quality of family interactions as indicated by family climate and mediation strategies that include any form of shared media consumption (i.e., co-use or active mediation).

Taken together, we specifically hypothesized that factor analyses should indicate that all three forms of parental mediation are inherently based on active parental involvement, irrespective of whether strategies are otherwise dominated by restrictions, co-use, or critical discussions (Hypothesis 1). Differences between characteristic features of VG and TV as well

as differences in the potential effects these media have on their users should be related to parents' mediation strategy choice. In particular, we expected restrictive mediation to be (a) the predominant parental strategy for both media, and (b) more intense for VG than for TV (Hypothesis 2). Active mediation and co-use, however, should be more pronounced for TV than for VG (Hypothesis 3). Hypothesis 2 and 3 were tested together using a 2x3 repeated measures analysis of variance with type of medium and mediation style serving as within-subject factors. Finally, we assumed that parents' fear of negative media effects as well as the reported family climate correlates with their preferred strategy of parental mediation (Hypothesis 4). To test this latter hypothesis, six separate regression analyses were calculated for each mediation strategy and media type, separately. Parental concerns (positive vs. negative) and family climate were entered into these regression models to predict how frequently each mediation strategy was used.

Methods

Sample and General Procedure

Family dyads reporting was used in the present study to avoid that reports on mediation strategies in the family are solely based on parents' subjective perspective (e.g., Nikken & Jansz, 2006, 2007; Nikken, Jansz, & Schouwstra, 2007). The dyadic approach of asking both parents and their children is also in line with the general approach that family socialization is bi-directional (e.g., Bell, 1968; Clark, 2011; Kuczynski, Marshall, & Schell, 1997; Pardini, 2008). According to this approach, children are not passive recipients of parental mediation, but directly feed back onto it. Consequently, questionnaires were distributed to 216 parent-child dyads in a German grammar school. In order to avoid social interference, children filled in the questionnaires during class first, before their respective parents received and filled out the questionnaires.

Only parent-child dyads that reported having access to both media types (TV and VG) at home were included in the analyses. One hundred and seventy five (81%) of the corresponding parents returned the questionnaires. Due to coding problems, only 158 (73%) parent-child dyads could be correctly allocated.

Children were 9 to 13 years old ($M = 11.07$, $SD = .08$, $Md = 11$). They attended either 5th (54.4%) or 6th grade classes (45.6%). Parents' age was 30 to 55 years ($M = 42.66$, $SD = 5.16$, $Md = 43$). More mothers (80%) took part in the survey, but gender was almost evenly distributed within the children sample (53.8% girls). The level of education among parents was rather elevated (10.1%, 15.2% and 33.6% having a low, middle and high secondary school level, respectively; 41.1% had an academic degree). The average number of people per household was three ($SD = 2.17$).

Questionnaires

The questionnaire comprised both validated scales and novel items. A four-point Likert scale was used for all items, with 1 indicating least agreement (e.g., *never, totally disagree*) and 4 indicating highest agreement (e.g., *always, fully agree*). To allow for direct comparisons, parents and children received parallel versions of questions on parental mediation. In most of these questions, parents were asked about their own behavior, whereas children rated the behavior of their parents. Except for parental mediation, children received a shortened questionnaire. Also, questions for children were carefully worded in an age-appropriate fashion.

Media Consumption

Following the procedure used in Nikken and Jansz (2006), children reported the frequency with which they use TV and VG (*play/watch once a week or even less*, *2-3 days a week*, *nearly everyday, everyday*) and how much they like it. In addition, they indicated how

long they were allowed to use the media in question (*no time limit, _ _ hours and _ _ minutes*). Only 3 children indicated that they were not allowed to watch TV or play VG. They were excluded from further analyses. Parents were asked to quantify their own as well as their child's average media use during weekdays and weekends, respectively. Additionally, they were also asked to indicate their enthusiasm for TV and VG, respectively. In contrast to Nikken and Jansz (2006), however, we used a four-point rather than a three-point scale.

Perceived Media Effect and Content

Parents' attitudes towards positive and negative media effects on children were investigated using a set of 22 items adapted from Nikken and Jansz (2006)[1]. Attitudes were separately tested for TV and VG. Parents indicated the extent to which they agreed with each statement that media has positive effects on social interaction and emotional learning (4 items), children's general stock of knowledge (6 items), and on children's cognitive abilities (2 items). Parents also indicated how much they feared negative media effects on children's behavior and attitude (8 items) as well as on children's health (2 items). Positive and negative items were presented in counterbalanced order. Overall analyses of the scales revealed similar reliabilities for both media (negative effects: $\alpha = .90$; positive effects: $\alpha = .80$).

Parental Mediation Styles

Three types of mediation styles (i.e., active, restrictive, and co-use) were assessed using items from earlier investigations that were translated into German (Nikken, personal communication, April 2010; Nikken & Jansz, 2006, 2007; Nikken et al., 2007; Valkenburg et al., 1999, please refer to Table 1 and 2) and six novel items based on our own theoretical assumptions of active elements in parental mediation: *How often do you* (1) *evaluate the*

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[1] The authors want to thank Peter Nikken for providing the original Dutch items, which were translated into German.

feelings of the protagonist together with your child?, (2) *give advice for playing/watching*

TV?, (3) *pay attention to what the child is playing/watching?,* (4) *describe what happens in*

the game/on TV?, (5) *explain rules of videogame/TV usage?,* (6) *watch your child while*

playing VG/are you in the same room when your child is watching TV.

Family Climate

Family climate was determined using 8 items (α = .63) from the German Marital

Satisfaction Inventory questionnaire (Klann, Hahlweg, Snyder, & Limbird, 2006). Items were

selected with respect to parent's level of satisfaction with their child's behavior (e.g., *My*

child does not show enough respect; I often spend my free time with my child) and partnership

conflicts related to problems with the child.

Results

The level of significance was set at *p* = .05. In case of significant ANOVA results,

post-hoc tests (Student *t*) with adjusted *Bonferroni* corrections were performed as exploratory

analyses. Confirmatory factor analyses on the mediation scales were calculated using LISREL

8.6. In case of bad model fits, exploratory factor analyses were conducted using SPSS V.18.

Media Use and Parental Media Expectations

On average, children watched TV about 93 minutes (min, *SD* = 75.61) on weekdays

and 145 min (*SD* = 62.13) on weekends. VG were played significantly less. On average,

children played 35 min (*SD* = 50.83) on weekdays, *t*[157] = 11.96, *p* < .001, *d* = 0.95, and 61

min (*SD* = 64.74), *t*[157] = 13.44, *p*<.001, *d* = 1.08, on weekends. This difference was not due

to children's greater enthusiasm for watching TV (*M* = 3.17, *SD* = 0.53) than playing VG (*M*

= 2.90, *SD* = 0.71), *t*(157) = -1.67, *p* > .05. The data collected from parents revealed a similar

picture: Parents watched TV ($M = 2.08$, $SD = 0.82$) more than they played VG ($M = 1.14$, $SD = 0.48$), $t(157) = -13.06$, $p < .001$, $d = 1.04$. In contrast to children, they were far less enthusiastic about playing VG ($M = 1.42$, $SD = 0.66$) than watching TV ($M = 2.58$, $SD = 0.82$), $t(157) = -15.27$, $p < .001$, $d = 1.21$.

With regard to the expected effects of media as dependent variable, a repeated measures ANOVA was calculated with type of medium (TV vs. VG) and direction of expected effect (positive vs. negative) serving as within-subject factors. Parents were more concerned about negative effects ($M = 2.91$, $SD = 0.40$) than positive effects of the media ($M = 1.86$, $SD = 0.37$), $F(1,157) = 314.08$, $p < .01$, partial $\eta^2 = .67$. The main effect of media type did not reach significance, $F(1,157) = 2.06$, $p = .15$, partial $\eta^2 = .01$). However, the interaction was also significant, $F(1,157) = 20.41$, $p < .01$, partial $\eta^2 = .12$. Parents expected more negative effects from playing VG ($M = 2.95$, $SD = 0.50$) than from watching TV ($M = 2.87$, $SD = 0.51$), $t(157) = 2.67$, $p < .01$, $d = 0.26$. In contrast, watching TV ($M = 1.94$, $SD = 0.46$) was expected to have greater positive effects than playing VG ($M = 1.81$, $SD_{VG} = 0.52$), $t(157) = 4.49$, $p < .01$, $d = 0.15$.

Concordance and Profile Correlation as Dyadic Indexes

We analyzed the degree of concordance (R) of parents and their children's responses to mediation items by calculating profile correlations (q; ranging from -1 to 1) and total distance scores (d; ranging from 0 to 3, transformed into %; see Roest, Dubas, Gerris, & Engels, 2009). As expected, both indicators were significantly correlated ($r = .73$; $p < .001$). With regard to total distances, parents and their children showed an overall concordance of 67% (ranging from 34% to 86% for mediation scales, see next paragraph). Profile correlations ranged from -.41 to 1. Due to the high level of agreement between ratings of parents and

children, we decided to perform analyses on the combined data (calculation per item:

$[R_{child}+R_{Adult}]/2$; see Nikken & Jansz, 2006).

Mediation Scales

To test Hypothesis 1, confirmatory factor analyses were calculated. No support was

found for the hypothesized Nikken and Jansz (2006) mediation model for playing VG, as

RMSEA = .11, CFI = 0.34, and AGFI = 0.78 indicated only a poor model fit. Likewise,

parental TV data did not match the hypothesized model (Nikken & Jansz, 2006), RMSEA =

0.10, CFI = 0.61, AGFI = 0.80.

Given the poor model fit, separate exploratory factor analyses were performed on

parental VG and TV mediation. We opted for principal component analyses on the

assumption that there were inter-correlations between the different styles of mediation

(Nathanson, 2002; Nikken & Jansz, 2006; Valkenburg et al., 1999; Van der Voort, Nikken, &

van Lil, 1992; Van der Voort, van Lil, & Peeters, 1998). A forced factor solution resulted in

three factors, which explained 45 to 53% of the total variance for TV (see Table 1) and VG,

respectively (see Table 2).[2]

- Insert Table 1 about here -

The results for VG indicated slight but substantial differences as compared to previous

factor-solutions (see Table 1). In the new model, active mediation was no longer confined to

giving information and evaluating game contents (i.e. active explanatory component), but also

included discussions between parents and children on empathy-related aspects of the media

program (i.e., emotional-evaluative component) as well as parents and children's joint media

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[2] We also tested number factors based on Eigenvalues, but the factor structure was inconclusive and not more convincing.

consumption (i.e., active co-consuming component). Consequently, this factor was termed *active-emotional co-use* (AEC; α = .80). Co-consuming included parental investment and encouragement by joint media consumption, whereas the active part contained, for example, giving advice on how to play the game and pointing to good things in the game. Furthermore, socio-emotional features were stressed in this mediation strategy by evaluating the emotional state of the game character or avatar.

The second scale reflected the classical *restrictive mediation* part (see Nikken et al., 2006), but also included active elements (α = .71). Parents informed themselves about the VG medium, prohibited VG use, and stimulated critical thinking by focusing their children's attention to bad things in the game, or its fictional/fantastic origin.

The third factor was labeled *patronizing mediation* (α = .58), because it was characterized by observing the child playing VG and evaluating VG content. This strategy also comprised shared media consumption, provided that the child had asked for it.

- Insert Table 2 about here -

A similar 3-factor pattern was found in the exploratory factor analysis on the TV data (see Table 2). However, differences between factor compositions were also observed for active-emotional co-use (α = .73), restrictive mediation (α = .72), and patronizing mediation (α = .74). Reading the content descriptions appeared in all mediation strategies, although it was particularly important for the active component of video game mediation. With regard to TV, parents only read descriptions when they aimed at restricting TV consumption. Additionally, protecting the child from age-inappropriate media content was specifically important for restrictive TV mediation. Patronizing mediation corresponded to parents explaining the rules of watching TV and giving advice.

Predictors of Mediation

Following Nikken and Jansz (2006), hierarchical multiple regression analyses were

conducted to determine the relationship between demographics and parental beliefs about TV

and VG effects and each of the three forms of mediation (Hypothesis 4). Beta values for the

different predictors of the three different mediation scales for both types of media are shown

in Table 3. Following Nikken and Jansz (2006), demographic variables were included in Step

1 of the regression model. Step 2 included parental apprehension of media influences (e.g.,

negative and positive effects). Step 3 comprised indicators of family climate. To investigate

whether the concordance between parent and child ratings significantly adds to the regression

model, it was added in a concluding Step 4 and separately calculated for each mediation scale.

- Insert Table 3 about here -

In contrast to Nikken and Jansz (2006), the majority of predictors used in Step 1 and

Step 2 was not significant (see Table 3). Neither educational background, biological sex of the

child, nor parental frequency of media use explained a substantial amount of variance in the

mediation scales.

Overall, results indicated that parents who shared their child's perception of family

interactions at home (and, thus, showed a high degree of concordance) invested more in

active-emotional co-use and patronizing VG mediation. In contrast, low concordance between

parents and children predicted more restrictive and patronizing TV mediation.

A similar pattern was found with regard to active-emotional co-use of TV and VG. For

both media, parents experiencing a positive family climate were more strongly involved in

this active-emotional form of mediation. In addition, positive correlations were observed for

AEC mediation and parents who were enthusiastic about playing VG themselves, parents with

younger children, and those who thought that their children were less passionate about playing VG (see Table 3). This was also true for parents who anticipated positive effects from playing VG. With regard to watching TV, however, AEC mediation was predicted by parents' expectations of negative effects.

Parents' enthusiasm for VG was also strongly associated with the patronizing VG mediation style. This mediation strategy was also predicted by parents' expectations of positive gaming effects. Again, parent-child concordance positively predicted patronizing VG mediation. As to the TV medium, however, parent-child concordance was a negative predictor of patronizing behavior.

Fear of negative TV effects predicted restrictive mediation, which was also more likely to be applied by mothers and those with lower parent-child concordance. With regard to VG, limitations of playing VG were more prevalent in families with older children and for parents anticipating negative gaming effects.

Remarkably, although concordance between parents and children was entered in the final step of the regression analyses, it still turned out to be the best predictor, explaining up to 30.1% of the total variance (Table 3). This finding further highlights the role of family processes and intra-familial communication in monitoring children's media use.

Differences in Mediation between Media

A 2x3 repeated measures ANOVA with type of medium and mediation style serving as within-subject factors was calculated to test for differences in frequency of the three mediation styles (Hypothesis 2 and 3). Both main effects of type of medium ($F[1, 157] = 185.84, p < .001$, partial $\eta^2 = .54$) and mediation style ($F[3, 156] = 186.04, p < .001$, partial $\eta^2 = .71$) were significant (see Figure 1 for means). Most importantly, however, the interaction effect was also significant, $F(3, 156) = 79.68, p < .001$, partial $\eta^2 = .51$. With

regard to mediation, planned pairwise comparisons indicated that restrictive mediation was more prevalent than active-emotional co-use, $t_{TV}(157) = -15.45$, $p < .001$, $d = 1.20$, and $t_{VG}(157) = -14.77$, $p < .001$, $d = 1.17$, respectively. Restrictive mediation was also more prevalent that patronizing mediation, $t_{TV}(157) = -4.55$, $p < .001$, $d = 0.36$, and $t_{VG}(157) = -16.52$; $p < .001$, $d = 1.30$, respectively. When looking at the interaction the other way round, patronizing mediation, $t(157) = 7.34$, $p < .001$, $d = 1.23$, and active-emotional co-use, $t(157) = -6.83$, $p < .001$, $d = 1.02$, were sensitive to media type, but not restrictive mediation, $t(157) = -2.42$, $p > .05$, $d = 0.19$.

- Insert Figure 1 about here -

Family Climate and Media Use

Results indicated that media use was generally positively related to *"having difficulties with the child"*, TV$_{Weekdays}$: $r = .17$, $p < .05$; VG$_{Weekdays}$: $r = .24$, $p < .001$. Also, watching TV on weekdays was negatively related to *"spending time together with the child"* ($r = -.21$, $p < .001$). In contrast, a positive correlation was found between watching TV and *"child is sometimes annoying"* ($r = .22$, $p < .001$). Interestingly, restrictive mediation ($r_{TV} = .36$, $p < .001$; $r_{VG} = .33$, $p < .001$), patronizing mediation ($r_{TV} = .44$, $p < .001$; $r_{VG} = .32$, $p < .001$), as well as active-emotional co-use of TV consumption ($r = .28$, $p < .001$), were positively related to parents providing alternatives to media use.

Discussion

With electronic media becoming more and more pervasive, children's media education has become a major concern of parents and caregivers. Consequently, several studies investigated parental strategies that aim at regulating children's media consumption. Studies

on TV (Valkenburg et al., 1999) and interactive media like VG (Nikken & Jansz, 2006)

indicated similar parental mediation styles. Using a single cross-sectional design that allows

for direct comparisons between TV and VG, the present study compared dyadic reports from

parents and their children on the use of both types of media, thereby closing a gap in the

literature. Analyses revealed three different strategies of parental mediation for both media

that vary from those previously reported to the effect that each mediation strategy included a

strong active component (Hypothesis 1). Regression analyses revealed that mediation

strategies depended on whether parents dealt with their children's media use in an active-

emotional and cooperative manner, whether they kept an eye on children's media use in a

patronizing way, or responded with restrictions and regulations after having informed

themselves about media content. Irrespective of their particular mediation approach, however,

parents showed additional activities, like familiarizing with media content (e.g., reading

content description), or discussing and evaluating media characteristics. This omnipresence of

active behavior suggests that parents aim at grounding their respective mediation strategy on

actively seeking information and sharing this information with their children. To our

knowledge, this is a novel finding that has not been reported to date.

It has to be stated, however, that there have been reports on mediation styles that

contain elements from different monitoring strategies. Technically, this is illustrated by the

fact that mediation items load on more than one factor or strategy. For instance, Livingstone

and Helsper (2008) identified an active co-use strategy applied by parents to manage their

children's internet consumption. In the present study, a more conservative way of handling

double factor loadings would have resulted in the deletion of ambiguous items irrespective of

their potential theoretical explanatory power. Regarding VG mediation styles, for example,

excluding items with double loadings would result in an emotional co-viewing style that bears

a certain resemblance to Valkenburg et al.'s (1999) social co-viewing. However, we believe

that double loadings reveal an interesting and important change in media monitoring, that is,

some items might address aspects shared in different forms of mediation. From that

perspective, multiple loadings do not point to a diffuse item, but indicate a complex model of

motivation and monitoring. Reading content descriptions, for instance, might be motivated by

the parental wish (a) to understand the game in order to be able to play together with the child

(AEM), and (b) to look for age restrictions (RM). Similarly, "pointing to bad things in TV"

might (a) aim at evaluating the protagonist's feelings and giving advice while watching, or (b)

indicate the parental motivation to ban the TV program from being watched. Therefore, our

findings reflect the idea of a changing media socialization that assumes active elements to be

an integral part in parental mediation irrespective of its particular approach. More

importantly, our findings support the recent theoretical approach that calls for consideration

of interactive elements in the family related to media, and the affordances of digital and

mobile media (Clark, 2011).

It is important to point out that items crucial for the interpretation of a specific

mediation factor were found to have unique factor loadings. For example, parental

encouragement of video game play, parental initiative to play together, and parents bringing

attention to good features of the game loaded only on active VG co-use. Our findings do not

speak against the usefulness of standard conceptions of parental mediation strategies (i.e.,

active mediation, restrictive mediation and co-use). Rather, the present study indicates that

standard definitions underestimate that complex media management processes in the family

require active and caring parents, irrespective of whether the particular strategy is restrictive

in nature, based on co-consumption, or the mere presence of parents.

Restrictive mediation was the strategy parents used most often and at equal (high)

frequencies across media (Hypothesis 2). In contrast, patronizing and active-emotional co-use

were more frequent for TV than VG (Hypothesis 3). We may speculate that the observed

differences reflect the lesser familiarity with VG that some parents have, which is in sharp

contrast to their much greater experience with the TV medium they grew up with. The lack of

VG literacy should become especially evident with regard to active-emotional co-playing that requires knowledge and skills for giving advice on playing the game. In contrast, there are no similar requirements for watching TV together. Hence, when confronted with the task of media education and regulation, a lack of expertise, familiarity, and interest with regard to VG will have considerable implications for parental mediation (Jiow & Lim, 2012). Our findings suggest that the resulting strain on parental monitoring efforts narrows the alternatives among mediation strategies. When parents do not feel media literate themselves, they probably follow a restrictive "hands-off" approach to guiding their children through media—a strategy that has already been described in the literature (Lim & Tan, 2004; as cited in Clark, 2009). Compared to other monitoring strategies, restricting VG use may thus be seen as the only option. Unfortunately, restrictive forms of mediation may result in children's resistance to parental monitoring efforts (Cantor & Wilson, 2003; Nathanson, 2002), potentially leading to family conflicts with regard to media use. Other strategies, such as co-playing, may only be put into effect once the current generation of gamers become parents themselves, due to their requisite experience and insight into video games (Eastin, Greenberg, & Hofschirre, 2006, as cited in Jiow & Lim, 2012). Alternatively, some parents who did grow up with video games might have preferred restrictive mediation strategies because of their own (negative) experiences with this medium. Finally, we cannot rule out the possibility that they preferred restrictive mediation because of their awareness of scientific findings and the public debate about the potentially harmful effects of violent VG in particular (e.g., Melzer et al., 2010).

With regard to VG, restrictive mediation includes critical analyses such as increasing the child's awareness to negative media aspects or explaining that VG have nothing to do with reality. Apparently, parents fear the negative effects of media, especially when they believe that their children will confuse fictional content with reality. Indeed, not being able to differentiate between real and fictitious events has been shown to aggravate the effects of

violent media reception (e.g., Walma van der Molen & Bushman, 2008). Therefore, current programs on media literacy aim at teaching this ability (see Chakroff & Nathanson, 2008).

Regarding the factors that predict parental mediation, comparing the results of the regression analyses in the present study with those found in previous reports also reveals some substantial differences that need to be addressed.

In contrast to Nikken and Jansz (2006), parents' own media habits (i.e., amount of playing VG and watching TV) did not predict mediation in the present study. With regard to VG, this may be due to a lack of variation in VG use causing a floor effect.

Second, mediation of VG use was especially prevalent in parents with younger children (e.g., Nikken & Jansz, 2006; Shin & Huh, 2011). In the present study, this was only true for active-emotional co-use, whereas VG restrictions were more often used with older children. For the TV medium, the non-significant influence of the child's age on mediation was in line with findings reported by Valkenburg and her colleagues (1999). However, the children's narrow age range certainly limits the generalization of findings in the present study.

Third, there is converging evidence that parents who are afraid of negative media effects on children use more active mediation for VG and more restrictive mediation for both media types (e.g., Nikken & Jansz, 2006, 2007; Shin & Huh, 2011). While our data fully support this with regard to restrictions, VG patronizing mediation and active-emotional co-use were associated with parents' expectations of positive media effects on their children. However, parents who believe that TV has negative effects were found to prefer active-emotional co-use.

By including family processes into the regression analysis (Hypothesis 4), this study follows recent suggestions to investigate the role of family relationships with regard to the prevalence of different parental mediation styles (Opgenhaffen, Vandenbosch, Eggermont, & Frison, 2012). We found substantial differences in the relation between family climate and mediation styles: high parent-child concordance predicted active-emotional co-use, but less

restrictive-mediation. This finding is in line with Nathanson (2003), who suggested that restrictive mediation co-occurs with adolescents having less positive attitudes towards parents. In contrast, a positive relationship between parents and children is known to buffer against the tendency of rule breaking behavior (Buist, Dekovic, Meeus, & van Aken, 2004) and the undesired effects of advertising (Buijzens & Valkenburg, 2003). An open communication style at home has also been demonstrated to foster the use of discussion-based (here: active) mediation (Fujiko & Austin, 2002). In that sense, the present findings are highly intriguing, because a positive relation between parents and children was associated with reduced overall media consumption. This naturally implies fewer contacts with potentially harmful media. Interestingly, Coyne and her colleagues (2011) recently reported media consumption to be positively related to internalizing and aggressive behavior, but negatively related to prosocial behavior. Our finding therefore further highlights the importance of family connectedness and communication as protective factor for negative media use and media effects. It seems plausible to assume, for example, that active-emotional co-use increases family ties through inter-generational interactions, which then may possibly serve as a protective or resilience factor that decreases the probability of problematic child behavior when facing challenging social situations. Secure attachment and salutary domestic circumstances allow for the development of social trustworthiness and a stable sense of the self—factors known to promote appropriate coping strategies (e.g., Brumariu & Kerns, 2010).

Moreover, active-emotional co-use was positively associated with higher levels of parent and child concordance as well as family climate at home. Assuming that this form of mediation includes communication in the family and spending time together, it may also support parent-child connectedness, which will then feed back into family climate. Our findings therefore support recent research; Valkenburg and colleagues (2013) reported a negative correlation between family conflict and autonomy-supportive mediation. We may speculate that concordance on mediation between parents and children goes hand in hand with

greater family connectedness, as indicated by similar perceptions of the daily (media) life at

home. It is a particular methodological strength of the current study that parents did not

influence their children's response behavior, as dyads were assessed separately (i.e., children

filled in the questionnaire first and in the absence of their parents, who never saw their child's

responses). However, a spillover from children to parents cannot be entirely excluded,

because they might have talked to their parents about the questionnaire, which, in turn, might

have caused parents to rethink their mediation practices and how their children perceive these

strategies[3]. By including dyadic indices of concordance, the present study follows a recent

recommendation that discrepancies in perceived meditation between children and their

parents should be addressed (Valkenburg et al., 2013). Our results show that parent-child

concordance is in fact a strong predictor of mediation in the family.

Limitations

First and foremost, the cross-sectional design of the present study does not allow for

causal interpretations of the relation between mediation strategies, family climate, and

cognitive beliefs concerning media effects. Further concept testing and additional information

on the reciprocity underlying the observed correlations need to be based on laboratory

experiments (e.g., using priming paradigms and measurements of behavior) and longitudinal

studies.

Caution is also warranted because only families of grammar school children

participated in the present study, which limits generalization of findings to other age groups

or children with other educational backgrounds; these are factors that have been suggested to

affect mediation and its outcomes (e.g., Nikken & Jansz, 2006). In addition, given the

importance of family processes, future studies should include variables like children's ratings

of the family climate. In that sense, indicators of parent-child connectedness as developed by

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[3] We would like to thank an anonymous reviewer for this important constraint.

Coyne and her colleagues (2011) might serve as a promising measure, as their questions are easy to understand and possibly less complicated than those of the German Marital Satisfaction Inventory (Klann et al., 2006) used in the present study.

The present study is based on a single cross-sectional questionnaire, thereby making it vulnerable to recall biases and false memories. Notwithstanding, the multiple informant approach used in this investigation to study educational processes in the family is an important and widely accepted method to reduce the impact of recall biases (e.g., Hughes & Preski, 1997).

Conclusion

The current study significantly adds to the understanding of parental monitoring of children's media use by recognizing the active role of parents and children. Active communication was found to be an integral part in each mediation strategy, irrespective of whether strategies were otherwise dominated by restrictions, parents' patronizing, or emotionally-oriented co-use of media. Despite a similar factor structure, however, differences were observed between media, possibly reflecting differences in parents' familiarity and expertise with TV and VG.

Active communication plays a role in each mediation strategy because it is highly functional. For example, explaining media restrictions is likely to help avoiding unwanted 'boomerang effects', namely children's resistance to parental mediation (Shin & Huh, 2011). In this sense, media use appears to be true 'family business'. The significance of family processes is highlighted by the fact that shared conceptions of parental mediation (i.e., high agreement between children and their parents) was a powerful predictor of the overall amount of media monitoring and media consumption.

In addition to family processes, our findings also underline the important role of cognitive beliefs concerning media effects. The perception of media as providing valuable

learning opportunities was a predictor for patronizing mediation. In contrast, negative expectations predicted active-emotional co-use and restrictive monitoring. Therefore, the essential role of parental beliefs on media effects has to be acknowledged when suggesting guidelines or prevention programs. Realistic views on the potential risks and benefits of media will provide parents with a better basis for choosing among different monitoring strategies. Being able to provide evidence-based monitoring strategies may also increase children's acceptance of media-based rules and, thus, prevent them from consuming inappropriate media contents.

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Table Captions

Table 1

Factor matrix for parental mediation with regard to playing VG (based on 16 items).

Table 2

Factor matrix for parental mediation with regard to watching TV (based on 19 items).

Table 3

Multiple regression analyses with regard to predictions (beta values) of parental mediation for the two media types based on parent and their children's reports.

Figure Captions

Figure 1. Frequency of use for the different mediation strategies (ranging from 1 = never and 4 = always) as a function of media type (video game: VG; television: TV). Error bars indicate one standard deviation.

Table 1

	Components		
	1	2	3
Active-Emotional Co-Use			
Encouraging Game Playing[b]	.784[c]		
Playing Together, Parent Wants to[a]	.780		
Playing Together[a]	.714		
Pointing to Good Things in the Game[a]	.708		
Giving Advice for Playing the Game	.607	.440	
Reading Content Description[a]	.571	.466	
Evaluating the Feelings of the Avatar	.503		
Restrictive mediation			
Forbid From Playing VG[a]		.726	
Paying Attention to What the Child is Playing[a]		.697	
Pointing to Bad Things in the Game[a]		.675	
Gathering Information About Games[a]		.627	
Telling That Games are not Reflecting Reality[a]		.619	
Explaining Rules of VG Usage		.445	
Patronizing co-use			
Evaluating Game Content[a]		.627	.610
Playing Together, Child Asks it[a]			.774
Watching the Child While Playing VG			.582

Note. Primary factor loadings are underlined. Rotation Method: Promax (4) with Kaiser Normalization.

[a]Items adopted from Nikken et al. (2006). [b]items adopted from Valkenburg et al. (1999). [c]only factor loadings > .40 are indicated above (see Fikkers et al., 2013).

Table 2

	Components		
	1	2	3
Active-Emotional Co-Use			
Giving Advice While Watching TV	.715[c]		
Describing What Happens on TV	.710		
Evaluating What Might Happen Next on TV[a]	.667		
Watching Together, Parent Wants to[a]	.649		
Telling That Films are not Reflecting Reality[a]	.607		
Evaluating the Feelings of the Protagonist	.486		
Watching Together[a]	.443		
Encouraging TV Watching[b]	.430		
Pointing to Good Things on TV[a]	.430		
Restrictive Mediation			
Specifying Age-Appropriate Films		.756	
Reading Content Description[a]		.690	
Gathering Information About Films[a]		.616	
Forbid From Watching TV[a]		.608	
Pointing to Bad Things on TV[a]	.439	.488	
Patronizing Co-Use			
Explaining What Happens on TV[a]			.788
Paying Attention to What the Child is Watching[a]			.717
Watching Together, Child asks it[a]		.627	.655
Explaining Rules of TV Usage		.423	.599
Being Present in the Same Room With the Child Watching TV		.442	.557

Note. Primary factor loadings are underlined; Rotation Method: Oblimin (delta = 0.2) with Kaiser Normalization.

[a]Items adopted from Nikken and Jansz (2006); [b]items adopted from Valkenburg et al. (1999); [c]only factor loadings > .40 are indicated above (see Fikkers et al., 2013).

Table 3

Model beta values	AEC		PM		RM	
	VG	TV	VG	TV	VG	TV
1 Education (p)	-.00	-.03	.05	.06	.06	.01
Sex[a]	.17*	.19**	.01	.01	.13	.26**
Frequency[b] (p)	-.09	-.05	-.05	-.05	-.13	-.11
Enthusiasm (p)	.15*	.00	.18**	.06	.01	.09
Age (c)	-.09	-.01	.05	.05	.09	.04
Sex[c]	-.02	-.09	-.01	-.03	-.14	.13
Enthusiasm (c)	-.09*	-.02	.03	-.06	.00	-.04
R^2	.08	.07	.08	.03	.08	.09*
$F_{(7,157)}$	1.88	1.47	1.84	.72	1.86	2.17*
2 Pos Effects	.17*	.09	.23***	.08	.05	.05
Neg Effects	.10	.20***	-.10	.08	.15	.36***
R^2	.12*	.16	.17***	.04	.10	.26***
$F_{(12,156)}$	2.24*	2.77**	3.25***	0.73	1.89	5.81***
3 Family Climate (Discussion)	.06	.02	-.05	-.08	-.02	.00
Family Climate (Happiness)	.14*	.09	.03	-.04	.06	.04
Family Climate (Difficulties)	.00	-.03	.06	-.01	-.02	.01
R^2	.16	.19	.19	.06	.11	.27
$F_{(15,156)}$	2.23**	2.44**	2.73**	0.74	1.52	4.35***
4 Concordance (Parent-Child)	.54***	.18*	.13*	-.28**	-.09	-.22**
R^2	.68***	.22	.21*	.12	.12	.30**
$F_{(16,156)}$	9.29***	2.72**	2.91***	1.45	1.50	4.79***

Note. AEC = active emotional co-use; PM = patronizing mediation; RM = restrictive mediation; VG = video games; TV = television; p = parents' reports; c = children's reports. [a]mothers scored higher. [b] hours per day. [c] girls scored higher.
* < .05. ** < .01. *** < .001.

Figure 1
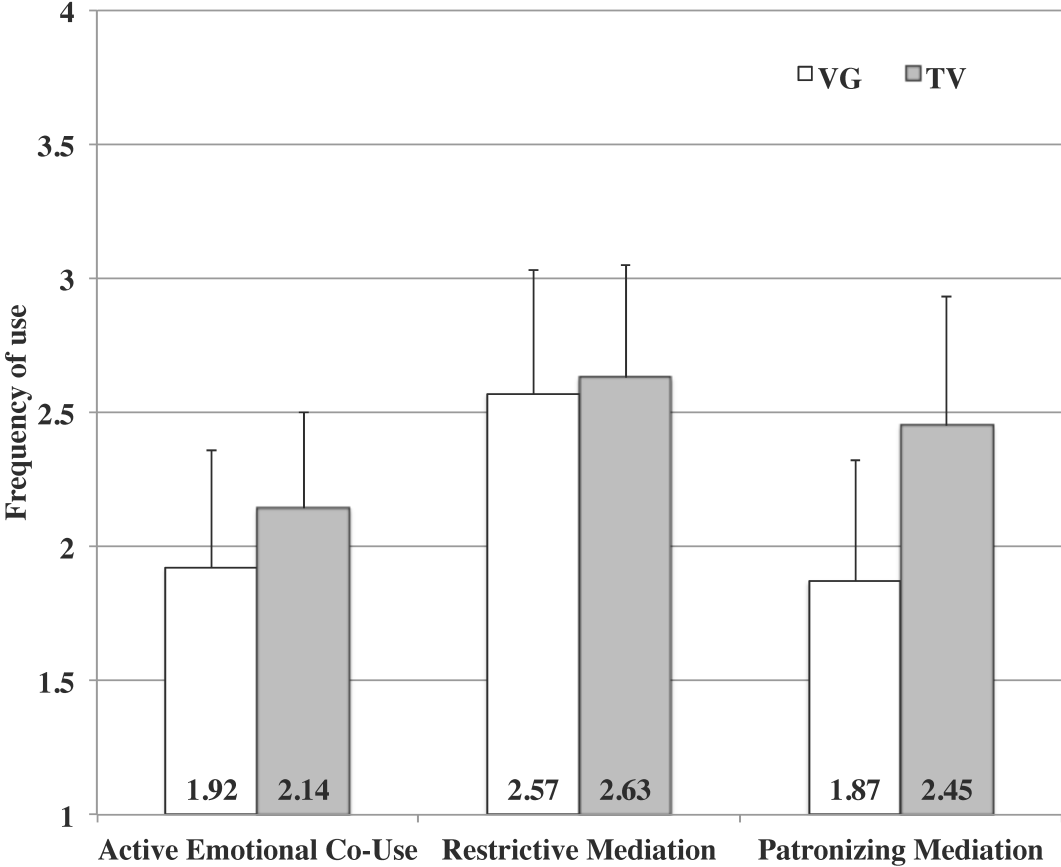
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