Television and the Child’s Developing Imagination (2000)

In D.G. Singer & J.L. Singer (Eds.),

Handbook of Children and the Media.


Patti M. Valkenburg

Amsterdam School of Communications Research

Department of Communication, University of Amsterdam

Oude Hoogstraat 24, 1012 CE Amsterdam

Tel. +31 20 525 2348, Fax. +31 20 525 2179

e-mail: valkenburg@pscw.uva.nl

Patti M. Valkenburg is a Professor of Child and Media Research and a Dutch Royal Academy fellow in the Amsterdam School of Communications Research, the Netherlands. Her research interests include children's likes and dislikes in entertainment, the determinants and effects of television mediation, children's development as consumers, and the effects of media on children's moral reasoning and fright reactions. Her work has
appeared in several psychology and communication journals, including *Psychological Bulletin*, *Developmental Review*, *Journal of Communication*, *Communication Research*, and *Journal of Broadcasting and Electronic Media*. 
LIST OF KEYWORDS

Imagination
Imaginative play
Creative imagination (see creativity)
Fantasy play (see imaginative play)
Creativity
Daydreaming
Fantasy (see daydreaming)
Media comparison experiments
Stimulation hypothesis
Reduction hypothesis
Displacement hypothesis
Passivity hypothesis
Rapid pacing hypothesis
Visualization hypothesis
Arousal hypothesis
Anxiety hypothesis
TELEVISION AND THE CHILD’S DEVELOPING IMAGINATION

Over the past decades, a variety of studies have investigated environmental and developmental influences on creative achievement. One of the most clear-cut findings obtained in these studies is that individuals who make creative contributions as an adult tend to come from families in which a favorable background for the development of intellectual abilities is provided (see Mumford & Gustafson, 1988 for a review). If environmental forces in childhood can affect later creative achievement, one might also expect that cumulative exposure to television, beginning in infancy, is a socializing factor with a great potential to influence children’s developing imagination.

The question whether and how television viewing impacts children’s imagination has been debated since the medium became part of everyday life, and there is still no consensus on this issue. On the one hand, television viewing is believed to produce a passive intellect and reduce imaginative capacities. On the other hand, there has been enthusiasm about educational television viewing fostering children’s creative thinking skills (see Valkenburg, 1999a; Valkenburg & van der Voort, 1994; van der Voort & Valkenburg, 1994, for reviews). However, if television does have a positive or negative impact on children’s imagination, it is especially important to understand the nature of this impact. In this chapter, I review the available research evidence on television’s effects on children’s imagination. I also present the different stimulation and reduction hypotheses that have been proposed in the literature and discuss the validity of each of these hypotheses.
THE DEVELOPMENT OF IMAGINATION IN CHILDHOOD

Before reviewing the effects literature, it is necessary to define the different aspects of children’s imagination that have been identified in the literature. Most publications on television's influence on imagination are characterized by fuzziness and lack of precise definitions of the concept of imagination. There are many closely related concepts in use, such as fantasy, daydreaming, imaginativeness, imaginative play, creative imagination, and creativity. These terms are sometimes used as synonyms and sometimes they refer to different phenomena. In my view, it is better to ignore the terms and definitions used in studies of television’s influence on imagination and focus instead on the way in which imagination has been operationalized. Then, it becomes clear that the research refers to three related, but clearly distinguishable imaginal processes: (a) imaginative play, (b) daydreaming, and (c) creativity.

Imaginative play (fantasy play, pretend play) can be defined as play in which children transcend the constraints of reality by acting “as if” (van der Voort & Valkenburg, 1994). In imaginative play, children pretend that they are someone else, that an object represents something else, and/or that the participants are in a different place and time (James & McCain, 1982). Imaginative play can make an important contribution to the cognitive and social development of the child (Piaget, 1972; Singer & Singer, 1990). Children who exhibit a great deal of imagination in their play are better able to concentrate, develop greater empathic ability, and are better able to consider a subject from different angles (Singer & Singer, 1990). They are happier, more self-assured, and more flexible in unfamiliar situations (Singer & Singer, 1990). Moreover, there are indications that a high level of imaginative play in childhood is positively related to creativity in adulthood (Dansky, 1980; Fisher, 1992). It has been suggested that the “as-if” nature of imaginative
play helps the child in breaking free of established associations or meanings, and thereby, encourages children’s creativity in the long term (Sutton-Smith, 1966).

Children’s imaginative play is influenced by environmental and developmental factors. The first manifestations of imaginative play appear at about 12 or 13 months of age (see Fein, 1981, for a review). A child closes his or her eyes pretending to sleep without actually doing so, or pretends to drink out of an empty cup. Between 20 and 26 months, children’s imaginative play becomes increasingly independent of the immediate reality. An inanimate object (a stick or sponge) might be treated as if it were animate, and a great many objects might be used as cups, telephones, or beds (Fein, 1981).

By age three, children’s fantasy play becomes more social. The child progressively begins to play together with his or her playmates. In addition, their fantasy play develops from loose fragments into play based on elaborated plots. The development of imaginative play reaches its peak between age five to seven (Fein, 1981). In this period, children start to distinguish between fantasy and reality and recognize that other children can have different perspectives (thoughts, feelings, and motives) than they have themselves (Selman, 1980). This is the period in which they seem to delight in the most elaborated forms of social imaginative play.

From the age of seven, however, public imaginative play progressively declines. By this time, school achievement starts to gain prominence in the child’s life, and open utterances of imaginative play are often discouraged by parents and teachers. It has been suggested that this emphasis on conventional behavior is the reason why children’s internal processes, in the form of fantasizing and daydreaming, start to blossom (Singer & Singer, 1990).

**Daydreaming** (or fantasizing) refers to mental processes such as musing, mindwandering, internal monologue, and being lost in thought. Daydreaming is a state of
consciousness characterized by a shift of attention. Instead of focusing on external
stimulation or on a physical of mental task, the child’s attention turns to thoughts and
images that are based in memory (Singer, 1975).

Finally, creativity (or creative imagination) is defined as the capacity to generate
many different novel or unusual ideas. Creativity seems to start around five or six years of
age (see Mumford & Gustafson, 1988, for a review). Some researchers believe that younger
children cannot be creative because they are unable to differentiate outer stimuli from the
internal experience of the stimuli (Piaget, 1972; Smith and Carlsson, 1985). Many
preschool children, for instance, believe that dreams are real entities that occur outside their
body. It is not until around nine years of age that they recognize that dreams are the
products of thoughts (Piaget, 1929). This could explain why divergent thinking tests (tests
that require creative thinking in response to open-ended problems) have shown to be
useless instruments with kindergarten children (Runco, 1992).

Daydreaming and creativity overlap to some extent. Both types of imagination
require the generation of ideas and in both activities associative thinking plays a role.
However, there are also important differences between the two activities. First,
daydreaming is an inner activity, which most people treat as extremely private (Klinger,
1990), whereas creativity demands communication (Knowles, 1985), and is often overtly
observable in its products. Second, through daydreams, children can give free rein to their
ideas and wishes in a process that is free from evaluation. Creativity, by contrast, is often
subject to evaluation (Pickard, 1990), and the product of creativity has to meet one or more
specified requirements.

Studies into the influence of television on the three types of imagination have
addressed quite different research questions. Research into television’s influence on
imaginative play and creativity has usually focused on the question whether television has a
positive or negative effect on the quality or quantity of children’s imaginative play or creative products. Studies into television’s effect on daydreaming have primarily investigated whether viewers who frequently watch certain types of television content tend to fantasize more frequently about themes that correspond to that content. Specifically, they have showed that children who watch a great deal of television violence more often have aggressive and heroic daydreams. Because the research on television’s impact on daydreaming differs so much from that on television’s impact on imaginative play and creativity, I will limit my review in this chapter to the latter two types of imagination. Readers interested in media effects on daydreaming should refer to Valkenburg and van der Voort (1994).

THE IMPACT OF TELEVISION ON CHILDREN’S IMAGINATIVE PLAY AND CREATIVITY

Researchers have advanced contradictory opinions about the influence of television on imaginative play and creativity. Some authors believe that television encourages play and creativity. I refer to this view as the stimulation hypothesis. Many others, however, argue that television hinders imaginative play and creativity, a position I call the reduction hypothesis.

Stimulation Hypothesis: The Potential of Educational Programs

According to the stimulation hypothesis, television enriches the store of ideas from which children can draw when engaged in imaginative play or creative tasks. Adherents of the stimulation hypothesis argue that television characters and events are picked up,
transformed and incorporated in children’s play and products of creativity, and that, as a result, the quality or quantity of their play and creative products is improved.

There is indeed evidence to suggest that children use television content in their imaginative play (e.g., James & McCain, 1982) and creative products (e.g., Vibbert & Meringhoff, 1981). However, the fact that children incorporate television content in their play and creative products does not necessarily mean that their television-related play or creative products are more imaginative. There is as yet no empirical evidence that the quality or quantity of imaginative play and creative products is improved through television viewing in general. None of the studies that have been conducted have demonstrated that overall television viewing is positively related to imaginative play (Shmukler, 1981; D.G. Singer & Singer 1976; Singer & Singer, 1981; Singer, Singer, & Rapaczynski, 1984a) or creativity (Childs, 1978; Furu, 1971; Peterson, Peterson, & Caroll, 1987; Singer et al., 1984a; Wade, 1971; Zuckerman, Singer, & Singer, 1980). There is little indication therefore that overall television viewing stimulates children’s imaginative play or creativity.

While a stimulating effect does not appear to be true of TV viewing in general, it has been suggested that educational viewing might stimulate children’s imagination (Schmitt et al., 1997). There is some experimental evidence that a children’s program that is specifically designed to stimulate children’s imagination can promote imaginative play (J.L. Singer & Singer, 1976), although other studies suggest that these increases are limited to children originally low in imagination (Tower, Singer, Singer, & Biggs, 1979) and to play contexts with play materials related to the program seen (Friedrich-Cofer, Huston-Stein, McBride Kipnes, Susman, & Clewett, 1979).

In the case of creativity, the effects of educational viewing have only been studied in one correlational study (Schmitt et al., 1997). The results were suggestive that viewing of educational programs would lead over time to an increase in children’s creativity. Although
promising, however, the available research evidence is as yet too limited to justify decisive conclusions on the beneficial effects of educational programming on children’s imaginative play and creativity. Future research should pay closer attention to the differential effects of various types of television content on children’s imaginative play and creativity. It is possible that children’s imaginative play and creativity benefit from educational programs meant to foster imagination.

Reduction Hypotheses: Does Television Stifle Children’s Creative Capacities?

The majority of studies suggest that television in general and television violence in particular have a reductive effect on imaginative play and creativity (Valkenburg & van der Voort, 1994; van der Voort & Valkenburg, 1994). In the case of imaginative play, each of the different types of research that have been conducted provides indications that television viewing and imaginative play are negatively related. First, most quasi-experimental studies carried out in the early years of television indicate that the introduction of television resulted in a loss of playtime (Maccoby, 1951; Schramm, Lyle, & Parker, 1961). Second, the correlational studies showed that children who watch a great deal of violence engage less frequently in imaginative play (Shmukler, 1981; D.G. Singer & Singer, 1976; Singer et al., 1984a). And finally, a series of experimental studies indicate that programs with a high level of violence hinder imaginative play (Huston-Stein, Fox, Greer, Watkins, & Whitaker, 1981; Noble, 1970, 1973).

In the case of creativity, the overall results are in the same direction. First, a quasi-experimental study carried out in the introductory stage of television showed that television’s arrival resulted over time in a decrease in creativity (Harrison & Williams, 1986). Second, the majority of the correlational studies showed that overall television viewing is negatively related to creativity (Childs, 1979; Furu, 1971; Peterson et al., 1987;
The available research evidence explains why the reduction hypothesis has a larger following than the stimulation hypothesis. To date, six types of reduction hypotheses have been proposed in the literature, namely the displacement hypothesis, passivity hypothesis, rapid pacing hypothesis, visualization hypothesis, arousal hypothesis, and anxiety hypothesis. Four hypotheses pertain to the impact of television on both imaginative play and creativity, whereas two hypotheses have only been proposed for imaginative play (the anxiety hypothesis) or for creativity (the visualization hypothesis). In each of the hypotheses, the reductive effect of television is attributed to a special property of television. The first four reduction hypotheses attribute the reductive effect to some structural characteristic of television, such as its visual nature or its rapid pace. The other two hypotheses attribute television’s negative influence on imaginative play and creativity to a specific type of program, namely action oriented and violent programs.

**Displacement Hypothesis**

In this hypothesis, the reductive effect of television on imaginative play and creativity is a result of the popularity of the medium. It is argued that children spend a considerable portion of their free time watching television at the expense of other leisure activities. In case of imaginative play, the displacement hypothesis assumes that television viewing takes up time, which could otherwise be spent on imaginative play (e.g., Singer & Singer, 1990). In the case of creativity, it is argued that television viewing occurs at the
expense of other leisure activities, like reading or listening to the radio, which are thought to stimulate creativity more than television viewing does. In other words, in the case of creativity, television’s reductive effect on creativity is not due to television viewing in itself, but to the fact that television viewing displaces the time of other, more beneficial activities.

The displacement hypothesis was tested in studies conducted during the introductory stage of television, when households with and without television could still be compared (Maccoby, 1951; Schramm et al., 1961; Murray & Kippax, 1978). Although none of the studies have investigated the effect of the arrival of television on the time devoted to imaginative play, they did investigate the consequences for playtime in general. Two of the three studies found that television watching occurred at the expense of playtime in general (Maccoby, 1951; Schramm et al., 1961). However, since on average approximately one third of general play is spent on imaginative play (Fein, 1981), it is likely that television had a reductive effect on imaginative play as well.

In the case of creativity, the displacement hypothesis argues that television viewing takes time from other activities, which are thought to be more beneficial for creativity than television viewing, with the result that creativity is hindered. There is indeed evidence to suggest that the arrival of television resulted in a displacement of other media, such as the cinema, comic books, and radio (see Anderson & Collins, 1988, for a review). It is, however, still unknown whether this displacement of verbal media leads to a reduction in creativity. A study that was conducted during the introductory stage of television in Canada (Harrison & Williams, 1986) demonstrated that the arrival of television resulted in a decrease in children’s imagination, but this study did not check whether this reductive effect was caused by a diminished use of radio and books by children.
Passivity Hypothesis

Adherents of the passivity hypothesis see television as an “easy” medium, requiring little mental effort (Salomon, 1984). With a minimum of mental effort, the child-viewer consumes fantasies produced by others. According to the passivity hypothesis, this leads to a passive “let you entertain me” attitude that undermines children’s willingness to use their own imagination in play and creative products (Harrison & Williams, 1986, Singer et al., 1984a).

The passivity hypothesis has never been tested, neither for imaginative play nor for creativity. Although it is unknown whether the mechanisms proposed by the passivity hypotheses are responsible for a reduction effect on imaginative play and/or creativity, it is possible to examine whether the existing research gives reason to believe that these mechanisms occur at all. The passivity hypothesis first assumes that the processing of television information requires little mental effort, and that this low level of mental effort leads to a tendency to expend little mental effort in other domains. It also assumes that children’s willingness to put effort in play and creative thinking is undermined, because they consume fantasies produced by others.

Despite popular stereotypes of children just sitting and staring at the screen, there is evidence that child-viewer is cognitively far from passive. Even very young children actively screen television offerings for attractiveness and understandability and make an effort to interpret television images in their own terms (Collins, 1982). This does not necessarily imply that the amount of mental effort children invest in processing television programs is large. There is evidence that for older elementary school children, television viewing requires less mental effort than does reading (Salomon, 1984). However, because both the content and formal features of television are more difficult for younger children to
comprehend, younger children may invest more mental effort in watching than older children do (Field & Anderson, 1985).

There is some evidence then that television viewing requires relatively little mental effort. However, it has never been investigated whether this leads to a general tendency to expend little mental effort, including a diminished tendency to invest mental effort in imaginative play or creative activities. Of course, child-viewers consume fantasies produced by others, but there is little reason to assume that this leads to reductions in fantasy play or creativity. Children who read a story, listen to a radio story, or watch a play also consume fantasies produced by others. But nobody has ever argued that print stories or theater hinder children’s imaginative play or creativity. Therefore, there is little reason to assume that television’s reductive effect on imaginative play and creativity is caused by a television-induced passive “let-you-entertain-me” attitude.

Rapid Pacing Hypothesis

The rapid pacing hypothesis attributes television’s reductive effect on imaginative play creativity to the rapid pace of television programs. According to this hypothesis, the viewer is confronted with images that must be instantaneously processed, because scenes are presented in rapid succession. Viewers are thus allowed little time to process the information at their own rate or to reflect upon program content. The hypothesis argues that rapidly paced television programs encourage cognitive overload, impulsive thinking, hyperactivity, and a non-reflective style of thinking (Anderson, Levin, & Lorch, 1977). Because both imaginative play and creative tasks require children to fix their attention for a longer period, the quality or quantity of imaginative play and creative products could be impaired.
Of course, rapidly paced programs leave children less room for reflection on program content than slowly paced programs. Until now, however, there are no indications that a rapid program pace per se leads to cognitive overload, impulsive thinking, and shortened attention spans. Anderson et al. (1977) found no immediate effect of rapidly paced television on perseverance in puzzle solving and impulsive thinking. Zillmann (1982) suggests that fast-paced programs may even foster the child’s attention. Zillmann and colleagues observed that the fast-paced interspersion of attention-catching stimuli in educational programs, compared with the slow-paced interspersion of the same materials, resulted in superior information acquisition.

Because there is no evidence of ill effects of fast-paced programs on children’s attention spans and cognitive style, it is not likely that children’s imaginative play and creativity will be hindered by program pace as such. It is no surprise, therefore, that several experimental studies reported that program pace did not affect children’s imaginative play (Anderson et al., 1977; Greer, Potts, Wright, & Huston, 1982; Tower et al., 1979). It should be noted, however, that these experiments used only benign, nonviolent programs. It is very well possible that the combination of a rapid pace and violence which is common in many action-adventure children’s programs, does lead to hyperactivity, impulsive thinking, and reduced attention spans. The rapid pacing hypothesis has never been tested with this type of programs, neither for imaginative play nor for creativity.

Visualization Hypothesis

The visualization hypothesis has only been proposed and tested with respect to creativity, and not with respect to imaginative play. This hypothesis attributes the reductive effect of television on creativity to the medium’s visual nature. Television, unlike radio and print, presents viewers with ready-made visual images and leaves them little room to form
their own images. When engaged in creative thinking, viewers find it hard to dissociate themselves from the images supplied by television, so that they have difficulty generating novel ideas (Greenfield & Beagles-Roos, 1988; Meline, 1976; Valkenburg & Beentjes, 1997).

Seven experimental studies have been designed to test the visualization hypothesis. In all of these media-comparison experiments, children were presented with either a story or a problem. The stories or problems were presented in either television (audiovisual), radio (audio), or print (written text) format. The text of the story or problem was usually kept the same, whereas the presentation modality was varied. After the presentation of the stories and problems, children were given a creative task. They were asked, for instance, to find a solution for a problem, make a drawing, or complete a story that was ended just prior to the end.

Six experiments were carried out in the United States (Greenfield & Beagles-Roos, 1988; Greenfield et al., 1986; Kerns, 1981; Meline, 1976; Runco & Pezdek, 1984; Vibbert & Meringoff, 1981), and one was conducted in the Netherlands (Valkenburg, & Beentjes, 1997). In sum, with the exception of one study (Runco & Pezdek, 1984), all of the media comparison studies showed that verbally presented information evoked more novel ideas than did television information. According to the authors, the television presentations led to fewer novel ideas than did the radio and print presentations because children in the video condition had difficulty dissociating themselves from television images during creative thinking.

However, the results of the media experiments can also be explained in a different way. According to a rival hypothesis, verbal presentations, such as radio and print, might elicit more novel responses than television presentations, not because verbal presentations are more stimulating for creativity, but because they are remembered less well. The faulty-
memory hypothesis disputes that the superior production of novel ideas after a verbal presentation should be attributed to creativity. According to this hypothesis, the novel ideas produced by children after radio listening are not creative responses but merely inventions to fill in holes in a faulty memory.

A part of the faulty-memory hypothesis is that radio information is remembered less well than television information. This assumption is supported by experimental evidence. Several studies have shown that children remember radio information less well than television information (e.g., Beagles-Roos & Gat, 1983). However, to date, none of the media comparison experiments has investigated whether the relatively poor recall of radio information is responsible for the incorporation of more novel ideas in children’s creative products.

A recent experiment was specifically designed to test the faulty-memory hypothesis (Valkenburg & Beentjes, 1997). Children in two age groups were assigned to think up an ending for an incomplete television or radio story. An extra radio condition was included in which children were exposed twice to the same radio story in order to stimulate their recall of the radio story. Because there is ample evidence that repetitive stimulus presentation improves recall, we expected that double presentation of a radio story would stimulate children’s recall. Therefore, the faulty-memory hypothesis was tested by examining whether a double presentation of a radio story would result in fewer novel ideas than single presentation. In addition, the faulty-memory hypothesis would predict that double story presentation results in a superior quality of the novel ideas due to a lower number of irrelevant fabrications. To test these predictions, the number of novel ideas in children’s story completions was counted. In addition, independent judges assessed the quality of the story completions.
As expected, we found that double presentation of the radio story improved children’s story recall. However, the faulty memory hypothesis did not receive support: In comparison with a single radio presentation, double presentation of a radio story did not lead to fewer novel ideas, nor to stories of a lower quality. Because the faulty-memory hypothesis was not supported, the visualization hypothesis is as yet still the only plausible explanation for differences in novel ideas following radio presentations. The majority of the media-comparison experiments suggest that verbal information is more stimulating to creativity than is television information, although it should be recognized that the effect sizes of the differences in favor of radio have usually been small.

THE EFFECTS OF TELEVISION VIOLENCE ON IMAGINATION

The Arousal Hypothesis

Like the rapid pacing hypothesis, this hypothesis assumes that television promotes hyperactive and impulsive behavior. However, the hyperactivity is not seen as a result of the rapid pace of television programs, but is attributed to the arousing quality of action-oriented and violent programs. This arousing quality is assumed to foster a physically active and impulsive behavior orientation in children, which in turn disturbs the sequential thought and planning necessary for organizing plots of make-believe games and creative tasks (Singer et al., 1984a).

Although television viewing appears to be generally associated with relaxation, violent programs can produce intense arousal in children (Zillmann, 1991). In addition, there is evidence that the frequency with which children watch violent and/or action oriented programs is positively related to restlessness in a waiting room (Singer et al., 1984b), and impulsivity at school (Anderson & McGuire, 1978). Finally, it has been
demonstrated that watching violent programs may diminish children’s tolerance of delay and persistence in free play (Friedrich & Stein, 1973).

Because research does indicate that violent programs can induce an impulsive behavior orientation, it is no surprise that many television-imagination effect studies have demonstrated that watching violent programs can adversely affect children’s imaginative play (Huston-Stein et al., 1981; Noble, 1970, 1973; Shmukler, 1981; D.G. Singer & Singer, 1976; Singer & Singer, 1981; Singer et al., 1984a) and creativity (Singer et al., 1984a; Zuckerman et al., 1980). However, although these studies established that violent programs can hinder children’s imaginative play and creativity, they failed to investigate whether it was the arousal provoked by television violence that was responsible for the reductions in imaginative play and creativity. In other words, although there is convincing evidence that violent programs can foster a physically and cognitively impulsive behavior orientation, it has not been directly investigated whether a heightened level of arousal was responsible for the observed reductions in imaginative play and creativity.

**Anxiety Hypothesis**

The anxiety hypothesis provides a plausible rival explanation for the reductive effect of television violence on children’s imagination. This hypothesis also argues that violent programs hinder children’s imaginative play, but the reduction effect is not attributed to the arousal that violent programs produce, but to the fright reactions they generate. The anxiety hypothesis assumes that the television-induced fright leads to regression in behavior, which is expressed in a reduction in the quantity or quality of imaginative play (Noble, 1970, 1973).

Although the anxiety hypothesis has only been advanced with respect to television’s influence on imaginative play, in my view it also provides a plausible explanation for
reductive effects of violent programs on creativity. First, there is ample evidence that violent programs can induce intense fright reactions in children (Cantor, 1998). Second, there are indications that high levels of anxiety can disrupt fantasy play (see Fein, 1981, for a review) and creativity (e.g., Smith & Carlson, 1985). What remains to be proved, however, is whether television-induced fright is responsible for the reductive effects on imaginative play and creativity.

In summary, there is evidence that television violence has a negative effect on children’s imaginative play and creativity, and that the causal mechanisms proposed by the arousal and anxiety hypothesis actually operate. However, what remains to be proved is whether it is arousal or anxiety, which is responsible for television-induced decreases in imaginative play and creativity. In fact, it is possible that both the arousal and the anxiety hypotheses are valid reduction hypotheses. It is widely recognized that different types of media violence evoke different reactions in different viewers (Paik & Comstock, 1994). It could be that an arousing children’s program such as The Mighty Morphin Power Rangers may affect imaginative play and creativity through arousal, whereas frightening movies such as the It, the Exorcist, or Friday the Thirteenth, which have been shown to disturb many young viewers (Cantor, 1998; Valkenburg, Cantor, & Peeters, in press), may reduce children’s imaginativeness through fright.

THE EFFECTS OF VIDEO AND COMPUTER GAMES: SOME PRELIMINARY THOUGHTS

A relatively new concern among parents and educators is the effect of video and computer games on children’s imagination. Advocates usually view the games as a benign activity, with great potential to promote children’s problem solving skills. Opponents are
concerned that the games hinder children’s creativity, for instance because the child player must follow preset rules to succeed (Funk, 1993).

Very little research has examined the effect of video and computer games on children’s imaginative play and creativity. The only experiment that has as yet focused on this research question compared imaginative play after a 6-min aggressive cartoon (Road Runner) and an aggressive video game (Space Invaders) of the same length. No significant effect of a violent video game on children’s imaginative play was found. However, this finding should be interpreted with caution because of the very low number of children in each experimental condition ($n = 7$), and the subsequent lack of power of the statistical tests (see Cohen, 1988, for a discussion).

A part of the concerns about the effects of video and computer games on the child’s imagination is similar to the concerns raised about television. This is conceivable, because computer games have a number of characteristics that have been used to explain television’s reductive effects on imagination, such as their potential to displace other leisure activities, their rapid pace, and their potential to induce arousal or fright in children. However, there are also some obvious differences between television and computer games, which disqualify some reduction hypotheses advanced about television’s impact on imagination. For example, unlike television, computer games require active control, and a high level of involvement and interactivity, and playing computer games is certainly not a passive activity (Denot-Ledunois, Vardon, & Perruchet, 1998). As a result, few people would argue that computer games impair children’s creativity because they lead to a passive “let-you-entertain-me” attitude.

Although there is very little empirical evidence of the positive or negative effects of video and computer games on imaginative play and creativity, I can give some preliminary thoughts about the potential effects of the games on children’s imagination, which may
inspire future researchers interested in this research question. I will discuss which mechanisms that were proposed in existing hypotheses on television’s influence on imagination and creativity may also hold for video and computer games.

**Stimulation hypothesis.** As discussed earlier there is little evidence that overall television stimulates children’s imaginative play and creativity, but that special programs designed to foster imagination have the potential to encourage imaginative play and creativity. Many educational computer games, in particular the so-called adventures or fantasy role-playing games, are designed to foster imagination, and this is exactly what many game producers tell parents in their product information. To my knowledge, no academic research has tested whether such computer games actually do what their producers claim. It is well possible that educational computer games designed to foster imagination have a potential to encourage children’s creative capacities.

**Displacement hypothesis.** Video and computer games are rapidly gaining prominence as a preferred leisure activity, and thus, they have a similar potential to displace other activities, such as imaginative play and reading, as television viewing. There is some correlational evidence that video game use is negatively related to the reading time of boys (Lin & Lepper, 1987), although this study cannot rule out the reversed explanation that boys who do not read frequently are more interested in video game use. A study by Creasey and Myers (1986), in which computer game users were compared with nonusers, demonstrated that a newly introduced video game computer in the home mainly displaced television viewing and movie attendance. The introduction of the video game computer had no significant reductive effect on reading for pleasure, radio listening, peer interactions, and homework. The study also found that the displacement effects were short-lasting. Early decreases in television viewing, for example, started to disappear after several weeks.
A variant of the displacement hypothesis proposes that computer games impair children’s imagination because they are played along preset rules. It is argued that children, who predominantly play rule games, do not get sufficient practice in “divergent” and “as if” experiences, and that, as a result, their development of imaginal skills is impaired. Although it is important that children get the opportunity to practice divergent thinking skills, it is wrong to suppose that all video and computer games have preset rules (Valkenburg, 1999b). In some adventures and fantasy role-play games, children are given the opportunity to give free reign to their fantasies and ideas. They can draw, compose music, and create stories, and although nobody would recommend parents to replace all real-life drawings and stories for computer-generated ones, there is little reason to assume that these computer games hinder children’s creativity through lack of practice in divergent thinking tasks.

**Rapid pacing hypothesis.** Like television, computer games use a high tempo, which qualify them for the rapid pacing hypothesis. As discussed earlier, in case of television, there is little indication that children’s imagination is hindered through the rapid pace of television, because there is no evidence that a rapid pace per se leads to impulsivity and a nonreflective style of thinking. Therefore, there is also little reason to assume that the rapid pace of computer games will impair children’s imagination.

**Arousal and anxiety hypotheses.** Finally, many computer games are at least as violent in nature as certain television programs (e.g., Provenzo, 1991), and therefore have a similar potential to induce arousal and fright in children. In order to tease out which causal mechanisms are responsible for a potential negative effect on children’s imaginative play and creativity, research into the effects of violent computer games should include measures of arousal and fright, and compare arousing-frightening with arousing-non-frightening computer games.
CONCLUDING COMMENTS AND SUGGESTIONS FOR FURTHER RESEARCH

Research into the impact of television on children’s imagination originated in the 1950s (Maccoby, 1951; Himmelweit et al., 1958), developed in the 1970s, flourished in the 1980s, and waned in the early 1990s. With the exception of the works of Dorothy and Jerome Singer, the study of the relationship between television and imagination is characterized by an ephemeral research interest. Researchers contributed with at most one or two studies, after which they disappeared again. This could be the reason that empirical research in this field has usually not been guided by explicit theoretical models. Most studies have examined the relation between television viewing and imagination as an input-output measure, without attempting to explore the mechanisms that might be responsible for television’s reductive or stimulating effect. Therefore, the existing research does not allow us to single out which of the hypotheses discussed in this chapter is the most plausible. Future research should derive from more sophisticated theoretical models, and should pay closer attention to the question as to how television or computer games may affect imaginative play and creativity.

Further research should also determine whether the content of television or computer games moderates the relation between television viewing and imagination. As argued earlier, most previous research in this field has treated television viewing as a one-dimensional construct. However, including total viewing time as an independent variable only makes sense if the displacement hypothesis is tested. Tests of all other hypotheses demand a differentiation in types of content, at least in terms of violent and educational content.
Finally, new research should pay more attention to child characteristics. A basic assumption in modern theories of media effects is that children are active and motivated explorers of what they see on television (Valkenburg & Cantor, 1999). Another assumption is that any effect of television on children is enhanced, channeled, or mitigated by what the child viewer makes of it. In order to understand media effects on children then it is crucial to gain insight into the different antecedents of children’s selective exposure to media (e.g., Valkenburg & Janssen, 1999). In the literature to date too few attempts have been undertaken to explore the dynamic elements of child variables in the television-imagination relationship. There is a strong need for more elaborated theoretical models, in which child factors (e.g., developmental level, intelligence) and different environmental agents (e.g., media exposure, family influences) all operate as interacting determinants of children’s developing creativity.
REFERENCES


