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*Journal of Adolescent Research* 2008; 23; 55

DOI: 10.1177/0743558407310713

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# The Role of Violent Video Game Content in Adolescent Development

## Boys' Perspectives

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Numerous policies have been proposed at the local, state, and national level to restrict youth access to violent video and computer games. Although studies are cited to support policies, there is no published research on how children perceive the uses and influence of violent interactive games. The authors conduct focus groups with 42 boys ages 12 to 14. Boys use games to experience fantasies of power and fame, to explore and master what they perceive as exciting and realistic environments (but distinct from real life), to work through angry feelings or relieve stress, and as social tools. Boys did not believe they had been harmed by violent games but were concerned that younger children might imitate game behavior (especially swearing).

**Keywords:** *video games; focus groups; media violence; adolescence; gender; anger*

Young adolescents have increasing access to electronic interactive games on game consoles, handheld players, computers, the Internet, and cellular phones. National surveys of American youth ages 8 to 18 by the Kaiser Family Foundation (Roberts, Foehr, & Rideout, 2005) found that in 2005, 49% of children had a game console in their bedroom (up from

**Authors' Note:** This research was supported by Grant No. 2003-JN-FX-0078 awarded by the Office of Juvenile Justice and Delinquency Prevention, Office of Justice Programs, U.S. Department of Justice. We thank Molly R. Butterworth, Catherine C. Garth, and George C. Nitzburg for their assistance with data collection; Sarah M. Hertzog for her role in data review; and Danielle DeLuca for her assistance with manuscript preparation. Please address correspondence to Cheryl K. Olson, Center for Mental Health and Media, Massachusetts General Hospital Department of Psychiatry, Wang 812, Parkman Street, Boston, MA 02114; e-mail: [ckolson@partners.org](mailto:ckolson@partners.org).

45% in 1999), 31% had a computer (up from 21% in 1999), and 20% had Internet access (up from 10% in 1999). European surveys also show that new media, including electronic games, are part of children's everyday life (Roe, 2000).

The widespread prevalence of this type of play across most industrialized nations makes it normative (Warner & Raiter, 2005). However, many parents, clinicians, researchers, and policy makers are concerned that electronic games, especially those featuring violent content, may be harmful to youth. Researchers have fiercely debated the applicability of the literature on effects of violent video game content to real-world behaviors (Vastag, 2004). To further our understanding of the ways in which video game play, risky behavior, and healthy development may be related, it is useful to consider the perspectives of adolescents themselves.

## Prevalence of Video Game Play

Almost all boys and most girls play video and computer games, including games with violent content. A Kaiser Family Foundation survey (Roberts et al., 2005) found that 77% of boys in Grades 7 to 12 had played a game in the *Grand Theft Auto* series (Rockstar Entertainment), and nearly half (49%) had played a game in the popular *Madden NFL* series (Electronic Arts). In a recent study of middle school students' media habits (Olson et al., 2007), 94% reported having played computer or video games during the preceding 6 months. Of those who played electronic games, one third of boys and 11% of girls said they played nearly every day; 49% had played at least one Mature-rated title (intended for players age 17 and older) "a lot" in the previous 6 months. Data collected in the late 1990s in 10 European countries and Israel found that children ages 6 to 16 averaged more than a half hour per day on electronic video and computer games (Beentjes, Koolstra, Marseille, & van der Voort, 2001).

## Concerns About Effects of Violent Game Content

Researchers, clinicians, and policy makers have expressed concern that the violence children see in video and computer games could carry over into the real world as aggressive behavior or thoughts, desensitization to violence, and decreased empathy (Funk, 2005). They fear that the greater immersion and interactivity of video games, compared to passive media

such as television, could blur players' perceptions of the boundaries between fantasy and reality (American Psychological Association, 2005; Calvert & Tan, 1994). Furthermore, repeated acting out of "aggressive scripts" within violent game scenarios might lead to automatic aggressive responses to perceived provocations in the real world (Funk, 2005). Some reviews of research assert that existing data support a large and consistent effect of violent games on aggressive thoughts, feelings, and behaviors (Anderson, 2004). Other reviews conclude that any harmful effects of interactive games are small or evidence is mixed and that more study is needed (Bensley & van Eenwyk, 2001; Browne & Hamilton-Giachritsis, 2005; Sherry, 2001).

Academics and policy makers in the United States (Anderson, 2004) and, most recently, in Germany (Dobson, 2006) have cited anecdotal reports linking violent video games to highly publicized violent crimes such as school shootings. However, these reports often neglect other known contributors to violence. For example, the attorney for Lee Malvo, the adolescent charged with a series of fatal sniper shootings in the Washington, D.C., area in 2002, cited his exposure to violent video games in his defense. Yet the young man had a history of parental abandonment, poverty, animal torture, and violent attacks with weapons (Liptak, 2003; Miller, 2003).

After the Columbine High School murders, the U.S. Secret Service reviewed a quarter century of school-based attacks. The report did not single out violent media use as a contributor to school shootings (Vossekuil, Fein, Reddy, Borum, & Modzeleski, 2002). Furthermore, although the majority of adolescent boys now play violent video games, juvenile violent crime (including murder) has steadily declined in the United States; arrest rates are down 49% from their 1994 peak, reaching their lowest level since at least 1980 (Snyder, 2006).

More study is needed on the possibility that video games and other media with violent content could have less visible but still significant harmful effects on children's behavior. For example, certain types or amounts of video game play could affect emotions, cognition, perceptions, and behaviors in ways that promote bullying and victimization (Olson, 2004).

The many well-established risk factors for aggressive or violent behavior include individual characteristics, such as neurological damage, insecure attachment, and parental neglect or abuse, as well as exposure to social problems, such as poverty and neighborhood violence. These risk factors are complicated and interwoven over time such that it is impossible to identify one specific cause of aggressive or violent behavior. Evidence of harm from media with violent content is less clear cut (U.S. Department of Health and Human Services, 2001).

However, even if effects are small, exposure to violence through electronic media is one risk factor that could potentially be modified. It is therefore important to understand which types of media content, including various video game genres, have potential to negatively affect arousal, cognition, emotions, and behavior. Equally important, we must look for differing effects among subgroups of children, such as those who have aggressive temperaments or exposure to family or neighborhood violence (Browne & Hamilton-Giachritsis, 2005), and consider factors related to play patterns and settings, including game preferences and time spent playing, which might serve as markers for behavioral or emotional problems.

## **Electronic Game Play and Healthy Development**

Although most research on video games has emphasized harm, some surveys of adolescents have found links between interactive game play and social and emotional well-being (Colwell & Kato, 2003; Durkin & Barber, 2002). Researchers have theorized that video games—perhaps including those with violent content—may have benefits for adolescents (Gelfond & Salonijs-Pasternak, 2005; Goldstein, 2000; Griffiths, 2003; Kirsh, 2003; McNamee, 2000; Sherry, 2001). As adolescents explore different roles and social situations, including the inevitable conflicts with peers and parents, they create, break, and negotiate rules. By providing adolescents with situations not typically experienced in the real world, video game play may facilitate exploration of rules and consequences (Scarlett, Naudeau, Salonijs-Pasternak, & Ponte, 2004). Violent games are also a safe place to experiment with emotions and roles that may be unacceptable in daily life (Jansz, 2005). Interviews with adolescents and young adults suggest that many view violent video games as incorporating realistic situations and consequences (Malliet, 2006).

Some researchers posit that older children and adolescents understand that violent video game play is simply a form of play; they distinguish fantasy aggression and violence from real-world behavior that includes intent to harm a real victim (Goldstein, 2001; Malliet, 2006). According to catharsis theory, playing violent video games could provide a safe outlet for aggressive and angry feelings (Griffiths, 2000). Others have criticized this idea, citing a lack of empirical support in television studies (Dill & Dill, 1998; Huesmann & Taylor, 2003). Research on elementary-age boys found that aggressive motoric activity (e.g., throwing a ball at a drawing of a frowning face) could reduce levels of fantasy aggression (Murray & Feshbach, 1978). Unlike television, video games allow player-directed acting out of aggressive fantasies, and

new game controllers allow an increasing amount of physical interaction. The potential link between violent video games and catharsis merits further exploration.

Video game play may serve particular needs of adolescent boys with regard to aggression and socialization. In this period of development, boys use rough-and-tumble play to explore aggression, establishing peer status by focusing on dominance rather than causing physical harm to participants (Pellegrini, 2003; Pellegrini & Smith, 1998). It is possible that adolescent boys achieve some of these goals through their video game play. Rather than encouraging aggressive or violent behavior, video game play may help adolescent boys consider issues of war, violence, and death (Gelfond & Saloni-Pasternak, 2005). As with physical activity play, some adolescents may engage with video games in a dysfunctional manner.

## Adolescents' Perspectives on Video Game Play

Our understanding of these complex relations, as well as any policy or legislation that may be implemented, should be informed by adolescents' own perspectives on their video game play. This includes recognizing the personal, social, and emotional goals boys have for game play; their perceptions of game characters and actions; and the context of game play (Sherry, 2001; Williams, 2005). To date, no published studies have examined young adolescents' descriptions of why they play video games, what leads them to choose games with violent content, and how they perceive the influence of games on themselves and their peers. To begin addressing this gap, we conducted focus groups with young adolescent boys.

We chose to focus on young adolescents for several reasons. They may be more vulnerable to the influence of violent content during this stage of cognitive, emotional, social, and neurological development (Kirsh, 2003). They are more likely to engage in risky behavior, especially with peers, and less able to assess the consequences of those behaviors (Gardner & Steinberg, 2005). The potential effects of game violence on aggressive behavior is a central concern, and the prevalence of externalizing problems tends to peak in midadolescence (Steinberg & Morris, 2001). Finally, on a practical level, their activities are less subject to adult oversight than those of younger children.

The current study was limited to boys. Boys are more likely than girls to play video games in general and action or combat games in particular; they are also far more likely to play games in the presence of multiple peers (Olson et al., 2007). Physically aggressive behavior is more common among boys

than girls (Loeber & Hay, 1997). Also, research has shown considerable gender differences in the perception and expression of aggression (Galen & Underwood, 1997).

We addressed the following research questions:

1. What do boys identify as the reasons they play violent video games? What attracts boys to particular games, or game characters? Can electronic games be fun without violent content?
2. How do boys view the role of video games in social relationships?
3. What influence do boys believe violent video games have on their thoughts, feelings, and behaviors and those of their peers? How do they believe violent games might affect younger children?

Because these issues have been little explored, we also paid close attention to unanticipated themes that arose spontaneously in boys' discussions.

## Method

### Participants

We recruited 42 seventh- and eighth-grade boys ages 12 to 14. Two sets of focus groups were conducted using similar protocols: concurrent groups (in separate rooms) of 21 parents and sons, held in a suburban office building, and boys-only groups with 21 additional participants, held at three Boston-area clubs serving disadvantaged urban youth. For the parent/son groups, participants were recruited via an e-mail broadcast to more than 2,500 employees of the Partners HealthCare System, as well as flyers posted in local businesses and near schools. For the boys-only groups, the youth clubs posted flyers for groups to be held at their facilities. (Additional findings from the parent/son groups are presented in a companion article titled "Parents' and Sons' Perspectives on Video Game Play: A Qualitative Study.")

Respondents were screened by telephone. To qualify, boys had to report playing video or computer games at least 2 hours per week. We also required experience with two or more games from a list of eight bestselling violent games rated either "Teen" (ages 13 and older) or "Mature" (m; ages 17 and older) by the Entertainment Software Rating Board. Games were selected based on three criteria: availability on the industry-leading PlayStation 2 console (at minimum), the popularity of the game (based on sales data), and the presence of violent content (shooting, fighting, and/or blood). The Teen-rated titles used were *Def Jam Vendetta*, *Soul Caliber II*, and *Tekken Tag Tournament*. The Mature-rated games were *Mortal Kombat*:

*Deadly Alliance, Grand Theft Auto 3, Grand Theft Auto: Vice City, Metal Gear Solid 2: Sons of Liberty, and Resident Evil: Code Veronica X.*

Potential participants were told that the groups would discuss adolescent video game play but were not informed of the specific emphasis. Video games were defined as games played on game consoles, computers, or handheld devices. The Partners HealthCare System/Massachusetts General Hospital human research committee approved the protocol and procedures.

Participants came from 15 communities in the greater Boston area and represented a diverse mix of socioeconomic and racial/ethnic backgrounds. Each boy received \$50 for his participation.

## Procedure

We held eight focus groups with 42 boys, half concurrent with parent groups (conducted in a separate room) and half with boys only. Groups averaged four to five participants and lasted 75 to 90 minutes. Boys gave written assent to participate, and a parent or guardian gave written consent. We made audio recordings of all focus groups with the permission of the participants.

A senior researcher and a research assistant moderated each group, working from a written list of research questions recast in open-ended, conversational language; standardized probe questions were used to elicit details (Stewart & Shamdasani, 1990). Moderators also asked follow-up questions about themes introduced by participants. To stimulate conversation and provide a visual reference, printed color images from the eight video games were displayed on the table. Although all of the games contain violence, only nonviolent screenshots were presented so that boys were not exposed to additional or novel violent content. To start the group discussion, each boy was asked to select a game screenshot from the table and to describe what he liked about his chosen game. After each boy had shared his opinions, this process was repeated; the group then moved on to a broader discussion of issues related to video games.

Boys were asked the following:

- What do you like about (name of video game)? What is your favorite part? What do you like to do?
- Are there any characters in this game that you especially like? What is it about this character that you like?
- What makes a video game good enough to play more than once? What makes a game exciting for you?
- Notice that all of the games we have talked about have violence in them: fighting or shooting or blood. Do you think these make a game more fun?

- Can a game be fun without violence? [*If yes*] What game do you have in mind? [*If no, or not sure*] Can you think of any fun game that does not have violence?
- Some people think that games with fighting, shooting, or blood can affect the way kids behave. Do you think games like these can make kids act or think any different? Do you think you would be different if you had never played any violent games?
- How do you feel while you are playing a violent game, and how do you feel afterward? Give me an example (e.g., a game played yesterday). How did you feel before versus after?
- Some kids play video games by themselves, some kids play video games with other people, and there are some kids who do both. What do you do? What do you like about playing alone versus playing with other people? Do you ever play with other people on the Web?
- Have you ever made a new friend playing video games? Do you ever feel that playing video games keeps you from being with other people/gets in the way of friendships? [Groups held at youth clubs spent more time on social questions.]
- If you have a little brother or sister, are there games you would not want him or her to play? Why? Are there games that you think kids your age should not play?

## Data Analysis

The principal investigator and coinvestigator (who were the primary group moderators), the research coordinator, and another researcher reviewed full print transcripts of group audio recordings prepared by a research assistant. We identified and coded responses to the research questions and made marginal notes on recurring themes in these responses as well as issues that emerged independently. We periodically conducted reliability checks during this process to ensure consistency in interpretation and coding terminology among reviewers (Krueger, 1998; Miles & Huberman, 1994). After completing the initial analyses, reviewers discussed their findings and compiled a document that included each other's notes, so that data analyses were both independent and collaborative. This process incorporated the recommendations suggested by Marshall and Rossman (1998) to establish and maintain credibility, transferability, dependability, and confirmability via discussions with other researchers.

## Results

The following results and illustrative comments are organized by research question, concluding with unexpected themes or topics that were not related to our a priori questions.

## The Appeal of Violent Video Games

Our analyses suggest that boys are attracted to video and computer game play, and especially to violent games, for five clusters of reasons: (a) fantasies of power and fame; (b) challenge, exploration, and mastery; (c) emotional regulation, especially coping with anger and stress; (d) sociability (cooperation, competition, and status seeking); and (e) learning new skills (particularly in the case of sports games).

*Games and fantasies of power.* Boys talked about playing games with violent content as a way to express their fantasies of power and glory. Some boys described aspects of main characters' skills, personalities, or appearance as something with which they identify outside of the game. For example:

What I like about [*Grand Theft Auto*] *Vice City* is, I like Tommy Vercetti because he never gives up and he never quits or anything. And it's played by Ray Liotta; he's one of my favorite actors. (Boy 8)

Boys also imagined what they would do if suddenly blessed with the abilities of a favorite game character. These descriptions included references to conflicts or problems they encountered in their lives:

If I could be powerful like Jin, when somebody's getting bullied or something, and they can't defend themselves, I'd go help them out. (Boy 33)

I wish I could be stronger, so if someone's afraid of me—not that I want them to be afraid of me—but they won't try to start something with me. And I want to be famous. (Boy 39)

If I were Sub-Zero, I would go to school, I would freeze my teacher and the principal, and all the other teachers. So the students could do whatever they want. They could run in the hallways! (Boy 33)

However, boys were also aware that game actions would have very different consequences in the real world. When asked what he would do if he woke up tomorrow as Mitsurugi from *Tekken*, one participant (Boy 4) said, "I don't know, because if I took the sword out in public, then I'd get arrested!" Other boys made similar comments about *Grand Theft Auto* games:

I'm kind of scared to do that stuff. If I shoot somebody and they die, then I'll go to jail for a long time, so I don't want to do that. (Boy 34)

The whole thug thing seems kind of cool, but in real life, I wouldn't really want to have that life. In here, you don't mind just getting out of your car and killing somebody, because you're not going to get in trouble for it. You can just turn off the game system and you're done. (Boy 10)

Some boys mentioned special powers or weapons that they enjoyed using in the game; for example, Boy 14 said, "The swords in *Mortal Kombat* are fun to use; they look cool." These references did not include an indication of identification or imitation outside of the game.

*Games and exploration, challenge and mastery.* To lead into the topic of violent games, boys were asked what made a game fun to play more than once. Many mentioned challenge, action, excitement, and the more in-depth development of characters:

I like adventure games because you don't only play for 20 minutes and then beat it. I like a game that takes time and focus-ness [*sic*] to do it. (Boy 23)

And then you can do a whole different storyline and beat it again. Also, you could go exploring. (Boy 27)

When asked whether violence makes a game more fun, many boys agreed:

It's stuff that you can't do in real life, like kill people. So you could just, like, go crazy with the games. (Boy 34)

Others described games with violent content as having more action or challenges:

I like sports games a lot, and when I do play a violent game, it's fun too, because I like the action and stuff. I think there's a little more action in violence games [*sic*] than there is in nonviolence games. (Boy 24)

I think a game could have no violence at all and still be really good, because I like the realism and the challenge and stuff. (Boy 26)

Most boys felt that some types of games could be fun without violence. They cited sports games, racing games, or older games such as *Pac-Man*, pinball, or online checkers. They especially liked games with realistic sounds or actions, such as choosing draft picks as a coach in *Madden NFL*.

*Games and anger.* Many boys described using violent games to cope with feelings of anger or frustration. This type of play served as an outlet for emotional expression or as a form of distraction. For example:

Getting wrapped up in a violent game, it's good. 'Cause if you mad, when you come home, you can take your anger out on the people in the game. (Boy 32)

If I had a bad day at school, I'll play a violent video game and it just relieves all my stress. (Boy 12)

Last week, I missed one homework and my teacher yelled at me. . . . When I went home, I started playing *Vice City* and I did a cheat code to get a tank and I ran over everybody. And I smashed a lot of cars and blew them up. . . . I was mad, and I turned happy afterwards. (Boy 34)

One boy described coping with a real-life conflict by role-playing it in the game:

Say some kid wants to fight you, and he talks trash about you. When you go home and play, you're like, "This is the kid that I hate," and you beat him up and stuff. (Boy 39)

When asked if playing the game might help him avoid a fight, the boy said:

Maybe. 'Cause if I don't play a game or if I don't do nothing, it gets me even angrier, real mad. If I play a game, it's, "All right, I beat him." Then, it feels like I really did something and I'm done, man. (Boy 39)

*Games as social tools.* For many boys, video games are a focus of social activities and discussions:

Usually me and my friends, when we're over at each others' houses, and they have a good game [we'll play it]. They're like, "Oh, I'll kill you in *Madden 2005*." It's fun to beat them. (Boy 15)

If I didn't play video games—it's kind of a topic of conversation, and so I don't know what I'd talk about. 'Cause I talk about video games a lot. (Boy 4)

Several boys noted that talking about video game play helped them structure initial conversations with potential or new friends:

You say, "Do you own a system, a game system?" If he says yes, then, "What kind? PS2, Gamecube, Xbox?" Like that. (Boy 28)

A number of boys mentioned playing games over the Internet, sometimes teaming up with players from different cities or countries to play against other virtual teams:

[Playing games over the Web] makes me friends, like that you don't even know; all I know is by computer. Never met them. . . . You talk to them [on the headset] as you play, like "Oh, go this way and I'll go that way." (Boy 30)

## Boys' Perceptions of the Influence of Video Games

When asked about the influence of electronic games, boys mentioned potential positive and negative effects. Positive effects were organized around game genres, whereas negative effects were organized around specific types of content.

*Role-playing and realistic sports games.* Boys' references to video games' positive influences focused on two game genres: role-playing and sports:

With role-playing games, you have to think of every possibility. Like, "That chest over there . . . walk over there and maybe there is something over there." It helps you think, what would you want to do, how would you get further. So it also helps you in life [in the future], by thinking, "Okay, what could help the business?" (Boy 20)

Many boys said they were inspired by games to take up new sports or learn new moves. They tried to imitate physical activities they saw in the games they played. Some said that playing sports games could improve their real-life coordination and timing:

You see them do amazing plays, and then if you were to go outside and try them, and keep practicing that, you could get better so sometime later on in life, you could possibly do that. (Boy 9)

Like in basketball, if you see them do a fancy crossover, whatever, you want to learn how to do the same thing. . . . With this game I have called *Street Hoops*, I figured out how to do some of the moves. Still working on it. (Boy 18)

I play *Aggressive Inline*, a roller-blading game. [My little brother and I] get in trouble 'cause we start jumping on the couches, imitating the people in the game. Then, my mom tells us to go outside and roller-blade, and we try to imitate the tricks. I think that's how we get better and better, 'cause we actually want to be one of the people in the game. (Boy 21)

*Games with violent content.* Only a few boys said that playing video games with violent content could affect their peers' or their own behavior.

When pressed, they could not offer examples from their lives; the risk was theoretical. For example:

[Moderator: Do you think that playing a lot of games like this makes kids think, act, or talk differently?]

Yeah, definitely. 'Cause you might not want to fight a lot, and then when you play one of these games, you might want to fight more, so you might get in trouble a lot more. (Boy 19)

[Has that ever happened to you?]

No, not really. (Boy 19)

[Has anybody you know gotten into trouble because they play a lot of violent games?]

No, not really. (Boy 19)

[But you just figure it's logical, or . . . ?]

Yeah, it could happen. (Boy 19)

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[Moderator: Do you think playing violent games makes you any more violent?]

Depends, if you're like really, really into games. (Boy 40)

[What about you personally?]

Me? No, I'm not. I have no urge to pick up guns and shoot people. (Boy 40)

Boys repeatedly made distinctions between the game world and real life. Their distinctions focused less on the realism of visual images, and more on whether actions or situations were realistic:

I think the really violent games like *Vice City* where you can just go around killing anybody, that's pretty much less realistic. The environment, the people are real, but not the actions. (Boy 26)

I like the gore [in *Mortal Kombar*]. . . . The special moves that kill them, and how they finish the moves. They made the graphics good. (Boy 35)

[Moderator: Good like realistic, fun?]

It's not realistic; it's fancy and fun. (Boy 35)

Several boys thought violent games could actually increase understanding of the real world and of consequences to actions. For example:

If you've never seen someone get hurt or something, like you see in a video game, then you probably wouldn't know that that could happen. (Boy 1)

Many boys felt that the influence of a game with violent content would depend on the cognitive maturity of the player. They focused on the ways

in which violent content could harm others and seemed to consider themselves immune. They expressed a great deal of concern about exposing younger siblings to inappropriate content:

Before people start playing the [violent] game, they need to know what happens if you ever did something illegal that you're not supposed to do. Because if you don't know the consequences of your actions, you can just go out, start shooting people and you'll go to jail for life, and that's not a good thing. (Boy 17)

In M [rated games], there's a lot of swearing, a lot of killing, and a lot of things that I don't want [my younger brother] knowing. (Boy 41)

Boys were not worried about exposure to gore but about salient behaviors that could be easily imitated in the real world, especially swearing:

Little kids, they don't know the basic meanings of life. So once they see that [bad behavior in games], they're going to think, "Oh, that's how life goes. You can swear and go around hitting people and stuff." (Boy 23)

I don't like my little brother or sisters to watch me play *Vice City* because they might swear at other people 'cause of the attitude, how they do in *Vice City*. They always give people attitude and take swears at other people. That could make my family look bad, like my mom isn't raising us regular. (Boy 24)

Well, if he was younger than 8, then I wouldn't let him play. But maybe 8, I'd probably let him play, but I'd probably lower down the volume so he wouldn't hear the swears. (Boy 38)

*Games with sexual content.* Boys also had concerns about protecting younger children from sexual content in games:

In *Grand Theft Auto*, when you're driving around, you could see girls that you could pick up, like hookers. So I think children under 13 or 14 should not be buying it. (Boy 28)

[Moderator: So why do you think it's more okay for someone your age to play that?] 'Cause I'm mature, and I already know what that [sex] is, and I learned it in class. (Boy 28)

Interestingly, there was one game that several boys felt that they were too young to play, perhaps because of its salience to key issues in their stage of development:

[Moderator: Is there anything you think you shouldn't be allowed to play at your age?]

Well . . . sort of like *The Sims*. (Boy 34)

Yeah, *Sims*, because they go to, like . . . (Boy 31)

They go to, like, people and like . . . (Boy 34)

Kiss. (Boy 31)

These two boys agreed with a third that seeing kissing in a game was okay at age 15.

## Discussion

Much of the current debate on youth and media has focused, perhaps excessively, on potential harms and limiting use (Christakis & Zimmerman, 2006). This study adds balance by highlighting some developmentally appropriate uses of electronic games.

The boys we spoke with were articulate about their attitudes and behavior regarding video games. Boys from a range of racial/ethnic and socioeconomic backgrounds used games in similar ways and raised similar themes. Boys use violent games specifically (a) as a means to express fantasies of power and glory, (b) to explore and master what they perceived as exciting and realistic environments, and (c) as a tool to work out their feelings of anger and stress. Games—especially violent or sports games—are also social tools that allow boys to compete with and/or work cooperatively with peers. Boys gain status among peers by owning or mastering these popular games. This supports the idea that video game play with violent content may serve a function similar to rough-and-tumble play for young adolescent boys.

Most boys did not believe that they were negatively influenced by violent games. All boys believed that they knew the difference between behaviors that are rewarded in games and behaviors in real life. They clearly distinguished between antisocial or violent behaviors that were unlikely to occur in their lives (e.g., using powerful weapons and stealing cars) and those that were likely to occur (e.g., swearing and intimidation). In distinguishing between real life and the game world, they focused on actions rather than realism of graphic depictions. These results are consistent with Malliet's (2006) study of perceptions of video game realism among 32 Belgian older teens and young adults; he found that players made nuanced distinctions between the context of the game world and the context of reality.

Our findings are also consistent with a “third person effect”: the common belief that other people are more susceptible to the influence of media messages. In a telephone survey, sixth- and seventh-grade youth felt that same-age peers and younger children were more likely to be affected by violent video games (Scharer & Leone, 2006).

Boys thought that violent video games might have a negative effect on younger siblings, who might be less able to distinguish between fantasy and reality and might inappropriately carry over attitudes or behaviors (especially swearing) from the game into daily life. This concern aligns with research showing that children under 9 may indeed confuse media images with reality (Villani, Olson, & Jellinek, 2005).

One unexpected finding was that for some boys, playing realistic sports games influenced the amount and variety of their physical activity. The use of electronic games to encourage exercise merits further study. A British study of college undergraduates found a relationship between sports video game play and knowledge of and interest in particular sports, though this was far more likely among men than women (Crawford, 2005).

Given the role of video game play in starting and maintaining friendships, there is potential for games to help socially awkward children gain acceptance and self-esteem. A number of boys, including those from less advantaged neighborhoods, enjoyed playing games with friends and strangers over the Internet. Industry surveys suggest that game play among adolescents is a social activity (Boyer, 2006). Studies of adults and older adolescents have found that social interaction is a primary motivator for video game play, especially for men (Jansz & Tanis, 2007; Lucas & Sherry, 2004). Given that most new game consoles as well as computers allow Web-based play, socializing over the Internet will continue to increase.

Another positive influence of video games reported by boys, particularly for role-playing games, was the motivation and encouragement to think creatively to solve problems. This use of games may be reassuring for parents and clinicians.

Boys' use of violent games to regulate their emotions, and perhaps to substitute fantasy fights for real-life ones, is a particularly interesting finding. In a survey of 1,254 children ages 12 to 14 (Olson et al., 2007), 45% of boys who played video games agreed that one reason they did so was “it helps me get my anger out”; one in four boys strongly agreed. Also, 62% of boys agreed (23% strongly) that electronic game play “helps me relax.” Boys and girls who regularly played Mature-rated games were significantly more likely to use games to cope with anger.

Boys' use of games to channel anger and to relieve stress may lend support to catharsis theory. Other qualitative data suggest that adolescents may

use violent media content, such as heavy metal music, to purge anger and calm themselves (Arnett, 1996). There are also research reports from Europe suggesting that adolescents use computer games and music to cope with negative moods (Flammer & Schaffner, 2003). Further study is needed to determine whether using violent games for emotional regulation is healthy or potentially harmful, including effects on subgroups of children, such as those with depression or other psychosocial problems.

A qualitative study comparing 17 elementary-school students to 51 college students (Funk, Chan, Brouwer, & Curtiss, 2006), focusing on perceived gains and losses from video game play, had some findings consistent with the current study. The authors concluded that younger children experienced psychological gains such as enjoyable immersion in game characters, excitement, and pride in game mastery and successful competition with peers. (However, these children also reported finding in-game dangers overly intense at times.) By contrast, young adults focused on use of games to manage moods, including relief of stress and boredom, and adding pleasurable excitement to life. Our young adolescent sample appears to fall between these two groups, experiencing some psychological benefits in common with both younger children and adults.

Results of a qualitative study such as this cannot be generalized to all boys and should not be overinterpreted. However, they do suggest areas for further exploration through more targeted qualitative studies, large surveys, or observational studies, as well as content for pilot educational or behavioral interventions to promote game benefits and reduce potential harms. Studies of children at different ages could also help to inform our understanding of the ways in which video game play may influence—or be influenced by—aspects of social, emotional, and cognitive development.

This study could also serve as a useful comparison for future qualitative research with young adolescent girls. It is not known how girls may perceive game violence differently from boys, whether girls use violent games for similar social and emotional purposes, or whether encouraging play of sports or dance games might promote physical activity among girls. A survey of college students found that women did not share men's social and competitive motivations for game play (Lucas & Sherry, 2004).

We do know that violent game play is not the sole province of boys. The survey by Olson et al. (2007) noted above found that 20% of female game players reported frequent use of at least one title in the Mature-rated *Grand Theft Auto* series; it was second only to *The Sims* in popularity among girls. A substantial number of girls also used games to cope with anger (29%) and other emotions. Recent studies of massively multiplayer online role-playing games challenge the assumption that women are not interested in

violent games (Yee, 2008). Female players reported that the male-oriented culture of game players, not the death-dealing content, deters women from greater participation. The situation may be different for today's young girls, as they grow up with access to a proliferation of game genres and technologies.

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