

Pow! Boom! Kablam! Effects of Viewing Superhero Programs on Aggressive, Prosocial, and Defending Behaviors in Preschool Children

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Abstract Many schools and parents try to motivate children to become defenders of victimized peers. Defending behavior is common in the media (particularly in superhero programs); however, no study has examined the effect of media on defending behavior. The aim of the study was to examine longitudinal associations between superhero engagement and a variety of aggressive, prosocial, and defending behaviors in preschool children. Participants consisted of 240 preschoolers (49% male) and their parents who reported on child media use and outcomes at 2 different time points. Preschooler's engagement with superheroes was related to increased physical and relational aggression 1 year later. Engagement with superheroes was not related to prosocial or defending behaviors. Implications of the results are discussed.

Keywords Media · Superheroes · Physical aggression · Relational aggression · Prosocial behavior · Defending behaviors · Bullying

Decades of research on media effects have consistently shown that media can influence attitudes and behavior. For example, playing violent video games has been related to increased aggressive behavior (Anderson et al. 2010), decreased helping behaviors (Bushman and Anderson 2009), and decreased empathy (Fraser et al. 2012). Similarly, viewing relationally

aggressive behavior in the media, or actions intended to damage the social power and relationships of others, has been related to increased relationally aggressive behavior (Coyne 2016; Coyne et al. 2008). Conversely, viewing prosocial and helping content in the media has been related to increased prosocial behavior in children, adolescents, and adults (Coyne et al. 2016; Greitemeyer 2011; Prot et al. 2013). Clearly, the content of the media is vital when trying to assess the effect of media on behavior. While a significant amount of research has been conducted examining the effect of aggression and prosocial content in the media on behavior, no known research has examined the effects of media on defending behavior, which includes a variety of behaviors intended to support or comfort a victim of bullying. This behavior is of interest because it can be considered a type of prosocial behavior when nonaggressive behaviors are used to defend a victim, whereas other types of defending behaviors may utilize aggressive means. We examine the effect of media (and in particular superhero media) on defending and other behaviors during preschool. Multiple types of aggressive behavior are common during this developmental period, giving preschoolers many opportunities to defend others if they choose (e.g., Ostrov and Keating 2004).

Defending Victims of Bullying

Salmivalli et al. (1996) proposed that bullying, defined as repeated aggression towards those who are disadvantaged or less powerful in their interactions with aggressors, is inherently a social phenomenon with specific social hierarchy and social roles, one of which is defenders. Defenders are individuals who witness bullying behavior and seek to support and protect the victim (Salmivalli et al. 1996). Rubinstein (2004) has described two types of defenders: (1) aggressive or

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antisocial defenders (most often males) who use aggression towards bullies to hinder further offenses and (2) nonaggressive or prosocial defenders (most often females) who befriend and verbally defend the victim as well as call upon adult aid (e.g., teacher, parent). Existing research has focused almost exclusively on nonaggressive defending and has shown that nonaggressive defending behaviors can decrease bullying in the classroom (Kärnä et al. 2010; Salmivalli et al. 2011). As a result, experts have called for more efforts to increase the frequency of defending behaviors as an intervention to decrease bullying (Pozzoli and Gini 2010).

Defending behavior has predominately been studied in late childhood and adolescence and in these developmental stages has been linked to a variety of traits, including moral sensitivity (Caravita et al. 2012; Thornberg and Jungert 2013), moral engagement (Caravita et al. 2012; Pöyhönen et al. 2012; Thornberg and Jungert 2013), a strong sense of self-efficacy (Thornberg and Jungert 2013), coping strategies that are focused on problem solving, and perceived pressure from peers to intervene (Kristensen and Smith 2003; Pozzoli and Gini 2010; Pozzoli et al. 2012). Defenders also tend to be more empathetic (Barchia and Bussey 2011; Nickerson and Mele-Taylor 2014; Rubinstein 2004; van Noorden et al. 2014) and have more advanced cognitive skills (Caravita et al. 2010). Defenders are most often the same gender and age as those they are defending (Huitsing et al. 2014) and associate with friends who have similar beliefs and behaviors of defending (Sijtsema et al. 2014). Defenders are the most likely to intervene when they see bullying if the person being victimized is a friend or if they have been defended when being bullied (Pronk et al. 2013), however almost all of this research has focused on nonaggressive forms of defending behaviors.

Research regarding defending behaviors has been dominated by the developmental periods of late childhood, early adolescence, and adolescence, however researchers have shown that defending behavior is present as early as the preschool years (Camodeca and Coppola 2015; Monks et al. 2011, 2003). With U.S. preschool age children, females are more likely to be identified by their peers, teachers, and self-reports as defenders than male children (Monks et al. 2003); however, there were no reported gender differences in defending behaviors in Spain, suggesting that cultural and parental factors may influence the development of defending behaviors (Monks et al. 2011). Preschool children who have a better understanding of emotions are more likely to be defenders than children low in emotional understanding (Camodeca and Coppola 2015). Preschool defenders are significantly more likely to still be defenders 1 year later, suggesting some stability in this role during the early childhood years (Monks et al. 2003). However, no known research in the preschool years has been conducted examining differences in aggressive and nonaggressive defending behaviors or the impact of media on defending behavior.

Superheroes, Violence, and Defending Behaviors

One particular genre of media that is of interest to researchers of defending behavior are superhero movies and programs, as these programs prominently feature defending behavior. Superhero movies and television programs have become increasingly popular worldwide (Worldwide Grosses 2015) and are especially attractive to young children (Brown et al. 2009). For example, since the year 2000, the United States has produced 70 live action and 41 animated superhero movies, more than twice the amount produced in the previous 50 years (List of American Superhero Films 2014). Television superhero series targeted specifically at children include *Ultimate Spider-Man*, *Young Justice*, and *Green Lantern*. These superhero programs are popular with preschool children, and in particular preschool-aged boys, even though they are not targeted towards a preschool audience (Brown et al. 2009).

Superhero programs contain high amounts of aggression and prosocial behavior and have been shown to be related to increased aggression (Rosenkoetter et al. 2009) and heightened weapon play (Coyne et al. 2014) in children. For example, content analyses of popular superhero cartoons have shown that male and female superheroes engage in high levels of physical aggression, while female superheroes also engage in high levels of relational and verbal aggression (Luther and Legg 2010). This aggression is often interlinked with the defending role of superheroes (Martin 2007). For example, researchers have shown that superheroes use a great deal of aggression (including physical and verbal) and stop villains from hurting others (Martin 2007), but their aggression very rarely leads to killing (Morrison 2011). In fact, there is a correlation between the moral reasoning and strategies of children's favorite superheroes and their own moral reasoning, including their views towards aggressive defending (Johansson and Hannula 2012). Despite the aggressive style of defending common with superheroes, researchers have proposed that superheroes may be an effective way to teach young children the importance of defending others when they witness bullying (Johansson and Hannula 2012) and have suggested professors use superheroes when teaching young adults about ethical behavior (Gerde and Foster 2008).

Theory

According to both the general aggression model (GAM; Anderson and Bushman 2002) and its extension, the general learning model (GLM; Buckley and Anderson 2006), superhero engagement (operationalized in the current study as exposure to superhero media and identification with superhero characters) is likely to influence child behavior, including defending behavior. The GAM would suggest that superhero engagement might be associated with aggressive behavior, both in the short

and the long term. Though superheroes represent a force for good, their methods are highly aggressive. Indeed, Mares and Woodard (2005) found that exposure to prosocial aggression (where aggression is enacted to help others) tended to have the strongest effects on aggressive behavior. Children may learn from superheroes that aggressive behavior is justified and acceptable when there is cause. Media effects research has shown that identifying with an aggressive or prosocial character leads to greater replication of the behavior (Konijn et al. 2007). Research has confirmed that superhero engagement is related to physical aggression in elementary-age children (grades 1–4; Rosenkoetter et al. 2009). We extend this research in the present study by examining a preschool-age sample and multiple types of aggressive behavior (physical, relational, and verbal).

Additionally, exposure to aggressive behavior (even when done in a prosocial manner) tends to be related to decreased prosocial behavior (Mares and Woodard 2005). According to the GAM, exposure to aggressive models may result in decreased prosocial behavior as viewers are not only more aggressive but feel less sympathy for others. This association with general prosocial behavior is also assessed in the present study. However, associations with defending behavior, as a unique form of prosocial behavior, is likely to be more complex. To our knowledge, research has not yet examined the impact of media or identification with media characters on defending behavior. However, media (and superheroes in particular) represent powerful models for defending behavior. Given the high amount of aggression used by superheroes, these characters are especially likely to demonstrate aggressive defending behavior. According to the GLM, it is possible that children will create and then strengthen cognitive scripts on how to defend others when they are in need. When children witness others being bullied, these defending scripts may be activated, increasing the likelihood that children may intervene to help victims. Additionally, early exposure to superheroes may impact the development of defending behavior over time as children rehearse and strengthen these scripts. We examine both aggressive and nonaggressive defending in the current study. According to the GLM, we would expect that superhero engagement would have a greater effect on aggressive defending as opposed to nonaggressive defending, as this is the type of behavior that is more regularly portrayed in superhero programs.

Aims of the Study

The goals of the current study are threefold: (1) to examine parent and child perceptions of superheroes, with a particular focus on aggression, prosocial or defending behaviors, (2) to understand the relationship between preschool children's engagement with superheroes (consisting of viewing superhero media and identification with superhero characters) and the children's physical, relational, and verbal aggression across

time and (3) to understand the relationship between preschoolers' engagement with superheroes and the children's general prosocial behavior and defending behavior across time. We predict that engagement with superheroes will be associated with higher levels of physical, relational, and verbal aggression and lower levels of general prosocial behavior over time. Additionally, we also predict that superhero engagement will be associated with higher levels of defending behavior over time, particularly aggressive defending. We examine these questions using two techniques. First, using qualitative responses to examine parent's and children's general perceptions of superheroes and specifically to see if they mention defending or aggressive behavior as their reasons for liking (or disliking) superheroes. Given the lack of research on media and defending in particular, we felt this was an important first step. Second, we use longitudinal methods over a one-year time period (utilizing a cross-lagged panel design) to examine the relationships between superhero engagement and child behavior over time.

In our analyses, we explore gender as a moderator. According to the social cognitive theory of gender development (Bussey and Bandura 1999), media effects will be stronger when characters are the same gender as the viewer and when the viewer closely identifies with the character. Although there are female superheroes (e.g., Wonder Woman) and these female superheroes tend to use physical, relational, and verbal forms of aggression (Luther and Legg 2010), the majority of superheroes are male, and superheroes of both genders demonstrate more traditionally masculine traits and behaviors (Baker and Raney 2007). Accordingly, we predict that effects of superhero engagement will be stronger among boys.

Methods

Participants

Participants consisted of 240 children (49% male, M age = 57.81 months, SD = 7.52 at Time 1, age range 36 months–78 months) and their parents (97.5% were maternal report, M age = 33.50 years, SD = 5.39 years) who all took part in a larger study on children and media. Children were recruited from preschools and kindergartens at four different sites. Two were in a midsize city in the Western United States (one University classroom, one Head Start classroom). The other two were from a smaller city in the Pacific Northwestern United States (one University classroom, one community classroom). Participation rates at all schools exceeded 70%. Time 2 assessments took place approximately one year after the initial data collection, with a retention rate of 82.5% from Time 1 (n = 240) to Time 2 (n = 198). Maximum likelihood estimation was used to handle any missing data in the analyses.

For ethnicity, approximately 86% of participants were white, 10% were Hispanic, and 4% were another ethnicity. In terms of relationship status, 86% of parents were married, 5% divorced, and 8% in other family circumstances. Parental education ranged fairly substantively, with 38% not holding a college degree, 41% holding a Bachelor's degree, and 21% holding a higher degree (e.g., MSc or PhD). Approximately 36% of the reporting parent worked outside the home. For income, 29% of families earned an annual income less than \$30,000, 13% earned between \$30,000 and \$50,000, 26% earned between \$50,000 and \$80,000, and 33% earned more than \$80,000.

Measures

Parents completed a number of questionnaires at Time 1 and Time 2, approximately one year apart. Parents were able to participate in the survey online or were given a paper version. Written surveys were sent home in children's bags and later were mailed to their home in order to increase the response rate. Children also took part in a lab session during normal school hours. One question from this session is included in the current paper and is described below.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Superhero Engagement This variable consisted of two different items asking about child superhero viewing and identification with superheroes. Parents were shown a number of pictures depicting common superheroes (e.g., Spiderman, Batman, Captain America, X-men) and were asked to choose the superhero that their child most identified with and then to rate how much their child identified with that superhero on a 7-point Likert-type scale (1 = *not at all* to 7 = *highly identifies with*). Then, for the media exposure item parents were asked, "How often does your child watch television shows or movies (including DVDs) portraying superheroes (like the ones depicted above)?" Responses for this item were measured on a 7-point Likert scale (0 = *never*, 6 = *2–3 times a week*). Reliability for this measure was acceptable at Time 1 ($\alpha = 0.70$) though only moderate at Time 2 ($\alpha = 0.64$). Parents were also asked an open-ended question, "In general, how do you feel about superheroes? Explain."

Children were also individually interviewed during school hours. Each child was given a poster with 10 popular male and female superheroes (e.g., Spiderman, Ironman, Captain America, Thor, Superman, Storm) and were asked to identify their favorite superhero. They were then asked to explain *why* they liked this particular superhero the best. Children could also identify a superhero not on the poster if they liked.

Aggression Three types of aggressive behavior were measured, using the Parent Adaptation of the Preschool Social Behavior Survey (PSBS; Crick et al. 1997, 1999). Parents were asked to report how frequently their child engages in a series of aggressive behaviors, all measured on a 5-point Likert scale with options (1 = *never or almost never true*, 5 = *always or almost always true*). *Physical aggression* consisted of seven items (e.g., "your child kicks or hits others"), *relational aggression* with ten items (e.g., "your child ignores a peer or refuses to listen [e.g., may cover his/her ears] if he/she is mad at that peer"), and *verbal aggression* with three items (e.g., "your child calls others mean names"). Each scale showed good internal consistency across the two waves (physical aggression: Time 1 $\alpha = 0.80$, Time 2 $\alpha = 0.81$; relational aggression: Time 1 $\alpha = 0.73$, Time 2 $\alpha = 0.78$; verbal aggression: Time 1 $\alpha = 0.80$, Time 2 $\alpha = 0.81$).

General Prosocial Behavior General prosocial social behavior was measured using four items (e.g., "your child is helpful to peers") from the PSBS, and using the rating scale as described above. Internal consistency was adequate at both time points (Time 1 $\alpha = 0.80$; Time 2 $\alpha = 0.76$).

Defending Behavior The extent to which children defended victimized peers was examined using two subscales, using the same response scale as the scale described above. Nonaggressive defending was measured using three items (e.g., "Your child assertively, but not aggressively, defends those who are being physically bullied by other classmates. For example, he/she may tell the bully to stop"). Aggressive defending was measured with three items and measured defending that utilized aggression as a means of defending victimized peers (e.g., "Your child aggressively defends those who are being physically bullied by other classmates. For example, he/she will not hesitate to push or hit the bully to put an end to the bullying"). Internal consistency was moderate for both scales at both time points (nonaggressive defending: Time 1 $\alpha = 0.69$, Time 2 $\alpha = 0.74$; aggressive defending: Time 1 $\alpha = 0.65$, Time 2 $\alpha = 0.62$).

Television Violence and Time Superhero programs have been criticized for portraying high levels of violence, which have been associated with subsequent aggressive behavior (Brown et al. 2009). Accordingly, to ensure that our findings were not simply a reflection of the programs being violent, we used television violence exposure (assessed at Time 1) as a control measure throughout the study. Parents were asked to indicate their children's three favorite television programs (several of which included superhero programs). Across the two years, there were 268 programs listed. Each program was given a violence score by using the violence ratings suggested by commonsensemedia.org, a parenting and family media website. This website gives a detailed listing of all the

violence in a given program and then gives each program a violence rating from 1 (*no violence*) to 5 (*extreme violence*). The vast majority of programs (86%) were in this database and could be included in the study. The programs not coded were often vague (e.g., “cartoons”, “watching shows on the ipad”) and were not included in the analyses. According to Busching et al. (2013), these types of “expert ratings” shows high convergent validity and correlates highly with both formal ratings of the programs and self-reports by the media consumers. An average of media violence across the three programs were computed, with higher scores representing higher levels of media violence exposure on television.

As an additional form of measurement, we asked parents to also rate each program for levels of violence. For each, they were given a detailed definition of physical violence and examples (e.g., punching, kicking, shooting) and were asked to rate how violent each program was on a 7-point Likert scale (1 = *none at all* to 7 = *very high amount*). Violence ratings by parents and the expert ratings were highly correlated, $r = 0.68$, $p < 0.001$, for wave 1; $r = 0.69$, $p < 0.001$, for wave 1. We use the expert ratings in the analysis below, although using the parental ratings results in very similar outcomes overall.

Finally, we included overall time spent viewing television as a control variable in the model. This was assessed by asking parents to rate how much time their child spent viewing television on an average day using a 6-point Likert scale (1 = *none* to 6 = *more than 3 h*).

Measurement Model A confirmatory CFA was conducted using on the items for superhero engagement, all three types of aggressive behavior, general prosocial behavior, and defending behavior. The analysis was conducted on items at Wave 1 only (though the measurement model for items measured at wave 2 can be obtained by contacting the primary author). Though we do not have the statistical power to use latent modeling in the final analyses, this measurement model will provide information on how well the items are performing in the measurement of the intended constructs. This is particularly important for the items created for the purposes of the current study (i.e. superhero engagement and defending behaviors). The measurement model showed adequate model fit, $\chi^2(423) = 570.93$, $p < 0.001$; CFI = 0.92, RMSEA = 0.04, with all factor loadings being above 0.30. Table 1 shows a list of all factor loadings and items for each individual construct.

Results

Qualitative Results

A grounded theory approach (Lofland et al. 2006) was used to analyze the open-ended questions about perceptions of superheroes (for both parents and children), where coders derive

conceptual constructs and models from the data as opposed to the coders’ preexisting conceptions. Two undergraduate coders (one male, one female) coded all responses and were required to reach 100% consensus on all codes described below.

Parents

Approximately 28% of parents surveyed felt that superheroes had a positive influence on their children, with 75% of those parents commenting on how superheroes were *positive role models* for their children, many specifically mentioning defending behavior. For example, one mother stated, “They can be good role models because they are defending the right and the defenseless” (32-year-old, white mother). Another said, “They represent the best of humanity, defending and protecting the weak, using talents to help others, and fighting for a cause that’s bigger than self” (33-year-old, white mother).

Only 12% of parents reported feeling that superheroes were a negative influence on their children, with 66% of these parents specifying *violence* as their primary issue with superheroes. One parent stated,

“I am not a fan of superheroes because although they are supposed to support and defend ‘good,’ they tend to promote fighting and violence . . . I don’t want to promote superhero or superhero play at home because it tends to lead my children to violence. I don’t want them to act out violence and aggression as a way to entertain themselves” (38-year-old, white mother).

The remaining parents (60%) appeared to have a mixed or indifferent response (e.g., “I like the positive aspects of superheroes, helping people, etc., but think they are depicted too violently for children” (43-year-old, white mother), with many of them overtly mentioning defending behavior or violence in their response.

Children Children were also asked to identify their favorite superhero and then to describe why they liked this particular character. Various responses included *superhero merchandise* (26%), *image* (20%), and *interpersonal characteristics* (21%). Given the focus of the current study, we used a subcode to examine any defending or violent themes. Of those who specified characteristics in superheroes, 10% noted some *defending ability* of the superheroes: “Because he shoots webs and he saves people” (5-year-old, white boy). Twenty percent of these children associated their favorite superhero with some type of *violent skills*. For example, “He’s big and can punch” (5-year-old, Hispanic boy) and “He smashes and gets angry” (4-year-old, white boy). Some were milder, while others suggested blatant aggression. “Because he can smash and destroy everything, and he doesn’t care because he’s a big bully” (5-

Table 1 Measurement model of major variables

CONSTRUCT AND ITEMS	Factor loading
Superhero engagement	
How much does your child identify with this superhero? In other words, how much do they want to be like them, in terms of appearances, personality, characteristics, etc.?	0.83
How often does your child watch television shows or movies (including DVDs) portraying superheroes?	0.67
Physical aggression	
Your child kicks or hits others.	0.59
Your child verbally threatens to hit or beat up other children.	0.64
Your child pushes or shoves other children.	0.73
Your child verbally threatens to physically harm another peer in order to get what he/she wants.	0.60
Your child throws things at others when he/she doesn't get his/her own way.	0.59
Your child verbally threatens to push a peer off a toy (e.g., tricycle) or ruin what the peer is working on (e.g., building blocks) unless the peer shares.	0.67
Your child hurts other children by pinching them.	0.45
Relational aggression	
Your child ignores a peer or refuses to listen (e.g., may cover his/her ears) if he/she is mad at that peer.	0.34
Your child tells other kids that he/she won't play with them unless they do what the child wants.	0.45
Your child gives mean looks to others to make them feel bad.	0.53
Your child tells others not to play with or be a peer's friend.	0.44
When mad at a peer, your child keeps that peer from being in the play group.	0.54
Your child tries to embarrass peers by making fun of them in front of other kids.	0.51
Your child tells a peer they won't be invited to his/her birthday party unless he/she does what the child wants.	0.47
Your child walks away or turns his/her back when he/she is mad at another peer.	0.36
Your child tries to get others to dislike a peer (e.g., by whispering mean things about the child behind his/her back).	0.72
Your child verbally threatens to keep a peer out of the play group if the peer doesn't do what the child says.	0.55
Verbal aggression	
Your child calls others mean names.	0.45
Your child makes fun of peers' possessions (e.g., clothes, art projects)	0.55
Your child puts other kids down by insulting them.	0.63
Non-aggressive defending	
Your child assertively, but not aggressively, defends those who are being physically bullied by other classmates. For example, he/she may tell the bully to stop.	0.64
Your child assertively, but not aggressively, stands up for other kids when someone is putting them down or making fun of them. For example, they may counter with positive comments about the victim or seek to change the subject.	0.72
Your child assertively, but not aggressively, responds to the relational bullying or exclusion of others. He/she may play with kids whom other children purposefully ignore or exclude, even when told not to	0.60
Aggressive defending	
Your child aggressively responds to relational bullying or exclusion of others. For example, if told that he/she cannot play with an excluded child, he/she may seek to turn the peer group against the bully until the bully stops excluding others.	0.64
Your child aggressively defends those who are being physically bullied by other classmates. For example, he/she will not hesitate to push or hit the bully to put an end to the bullying.	0.59
Your child aggressively stands up for other kids when someone is putting them down or making fun of them. For example, they may make fun of the bullies or put them down.	0.62
Prosocial behavior	
Your child is good at sharing and taking turns.	0.70
Your child is helpful to peers.	0.68
Your child is kind to peers.	0.85
Your child says or does nice things for other kids.	0.57

year-old, white boy). Another child stated that Captain America was his favorite superhero “because he can kill” (4-year-old, white boy). The remaining 70% of skills-related

comments by children were benign in nature: “Because he is big and strong” (4-year-old, white boy) and “Because he is cool and can fly” (5-year-old, white boy).

Collectively, these reports suggest that both parents and children are aware of the defending and aggressive themes contained in superhero programs, with children in particular mentioning them as a primary reason for liking this genre.

Preliminary Analyses

In our data, nearly 84% of preschool boys (and 82% of preschool girls) had viewed either television programs or films portraying superheroes, with almost 20% of boys (and 6% of girls) viewing these programs weekly. A multivariate analysis of variance (MANOVA) revealed an overall sex difference for superhero engagement, media variables, and behavioral outcome variables at Time 1, $F(9, 197) = 12.20, p < 0.001$, partial $\eta^2 = 0.36$ (see Table 2 for means and standard deviations). Compared to girls, boys showed significantly higher levels of superhero engagement, $F(1, 205) = 57.85, p < 0.001$, partial $\eta^2 = 0.22$, exposure to television violence, $F(1, 205) = 8.64, p < 0.01$, partial $\eta^2 = 0.04$, and physical aggression, $F(1, 205) = 7.09, p < 0.01$, partial $\eta^2 = 0.03$, than girls. Conversely, girls showed significantly higher levels of relational aggression, $F(1, 205) = 6.32, p < 0.05$, partial $\eta^2 = 0.03$; prosocial behavior, $F(1, 205) = 13.98, p < 0.01$, partial $\eta^2 = 0.06$; and nonaggressive defending behavior, $F(1, 205) = 5.89, p < 0.05$, partial $\eta^2 = 0.03$, than boys. There was no sex difference for time spent watching television, verbal aggression or for aggressive defending. The pattern of results was similar for sex differences at Time 2; these results are not presented here but may be obtained by contacting the primary author. The only notable differences were the absence of sex differences for relational aggression or general prosocial behavior at Time 2.

A series of bivariate correlations (see Table 3) revealed that for boys, superhero engagement at Time 1 was positively

associated with television violence, physical, relational, and verbal aggression, and negatively associated with concurrent levels of general prosocial behavior. Additionally, superhero engagement at Time 1 was also positively associated with superhero engagement and physical and relational aggression at Time 2. There were fewer significant findings for girls. Indeed, at Time 1, girls' superhero engagement was only marginally associated with concurrent TV violence and significantly associated with superhero engagement and physical aggression at Time 2. Notably, superhero engagement was not associated with either type of defending behavior at either time point for either boys or girls.

Main Analyses

A cross-lag panel model was constructed modeling superhero engagement and all behavioral outcomes (physical, verbal, and relational aggression, general prosocial behavior, nonaggressive and aggressive defending) at Time 1 with these same variables at Time 2 (using MPlus v. 7.11). The data was modeled using a robust maximum likelihood method in Mplus, which compensates for skewness in the data. Note that, beyond assessments of stability, the Time 1 behavioral variables were modeled in their prediction of superhero engagement at Time 2. In contrast, superhero engagement at Time 1 was modeled in its prediction of all behavioral variables at Time 2. To better isolate the specific effect of superhero engagement, exposure to television violence and time spent viewing television at Time 1 were used as covariates in the analysis. All variables consisted of manifest variables given the number of variables contained in the analyses and the power of the sample. To test for group differences as a function of gender of the child, multigroup models were estimated and compared using χ^2 difference tests. Path coefficients were examined by comparing a model in which path coefficients were constrained to be equal across gender to a model in which paths were free to vary across gender. No path was significantly different by child gender, suggesting that gender did not moderate the results. Accordingly, the unconstrained model is reported below and gender is included a control variable as opposed to a moderator. The final model resulted in adequate fit ($\chi^2(42) = 80.71, p < 0.001$; CFI = 0.95, RMSEA = 0.06). Figure 1 shows the model.

Superhero engagement at Time 1 was associated with significantly higher levels of physical ($\beta = 0.26, p < 0.01$) and relational aggression ($\beta = 0.18, p < 0.05$) 1 year later, even after controlling for these behaviors at Time 1. Stability paths across time were highly significant for superhero engagement ($p < 0.001$), television violence and time (both $p < 0.001$), and all behavioral outcomes (all paths $p < 0.001$). No behavioral outcome at Time 1 predicted superhero engagement at Time 2.

Table 2 Sex Differences for Superhero Engagement, Media Variables, and Behavioral Outcomes at Time 1

	Boys		Girls	
	M	SD	M	SD
Superhero engagement***	3.82	1.70	2.30	1.10
Physical aggression**	1.57	0.54	1.39	0.42
Relational aggression*	1.61	0.36	1.76	0.45
Verbal aggression	1.41	0.39	1.41	0.45
General prosocial behavior**	3.81	0.55	4.08	0.48
Nonaggressive defending*	2.49	0.76	2.75	0.77
Aggressive defending	1.52	0.56	1.51	0.50
Television violence***	0.81	0.76	0.52	0.61
Television time	3.37	1.38	3.42	1.30

M Mean, SD Standard Deviation;

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

Table 3 Bivariate Correlations for Superhero Engagement and Behavioral Outcome Variables at Both Time Points

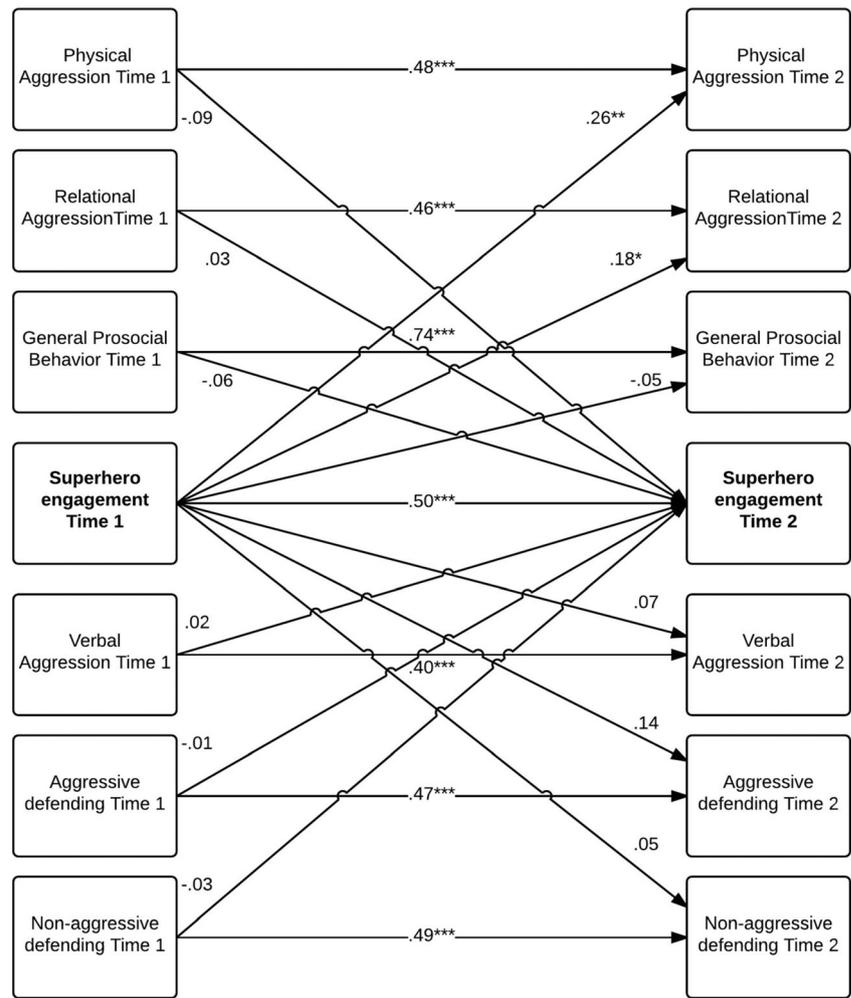
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Superhero engagement (T1)	--	0.19*	0.21*	0.20*	-0.24**	0.09	0.04	0.40***	0.62***	0.27*	0.24*	0.05	-0.09	0.05	0.05
2. Physical aggression (T1)	-0.03	--	0.42***	0.42***	-0.30***	0.01	0.09	0.10	-0.02	0.60***	0.28*	0.29**	-0.28*	0.01	0.17
3. Relational aggression (T1)	0.09	0.55***	--	0.55***	-0.22*	0.14	0.36***	0.06	0.10	0.46***	0.51***	0.30**	-0.28*	0.18	0.37***
4. Verbal aggression (T1)	0.13	0.59***	0.53***	--	-0.26**	-0.01	0.17†	0.07	0.15	0.28*	0.31**	0.37***	-0.34**	-0.07	0.15
5. General prosocial behavior (T1)	0.09	-0.22*	-0.03	-0.13	--	0.38***	0.09	-0.12	-0.20†	-0.35**	-0.31**	-0.23*	0.74***	0.36***	-0.10
6. Nonaggressive defending (T1)	0.05	0.04	0.10	0.03	0.40***	--	0.57***	0.04	-0.04	-0.16	0.10	-0.08	0.37***	0.67***	0.38***
7. Aggressive defending (T1)	0.03	0.39***	0.42***	0.25**	-0.10	0.25**	--	0.03	-0.04	-0.08	0.17	0.02	0.17	0.57***	0.54***
8. TV violence (T1)	0.21*	0.12	0.16†	0.11	-0.05	0.13	0.23**	--	0.28**	-0.07	-0.07	-0.03	0.07	-0.09	0.02
9. Superhero engagement (T2)	0.45***	0.07	0.15	0.11	-0.05	-0.01	-0.01	0.25*	--	0.02	0.04	-0.10	-0.18	-0.05	0.05
10. Physical aggression (T2)	0.21*	0.57***	0.44***	0.39***	-0.20*	0.08	0.29***	0.24*	0.23*	--	0.51***	0.55***	-0.33**	-0.11	0.24*
11. Relational aggression (T2)	0.16	0.39***	0.68***	0.38***	-0.06	0.06	0.30**	0.11	0.22*	0.57***	--	0.60***	-0.40***	0.09	0.47***
12. Verbal aggression (T2)	0.09	0.65***	0.51***	0.54***	-0.18	-0.01	0.30**	0.08	0.12	0.61***	0.65***	--	-0.32***	-0.12	0.29*
13. General prosocial behavior (T2)	-0.03	-0.28**	-0.21*	-0.16	0.69***	0.22*	-0.14	0.06	-0.10	-0.33**	-0.14	-0.21*	--	0.43***	-0.03
14. Nonaggressive defending (T2)	-0.03	0.01	0.01	-0.01	0.30***	0.40***	0.10	0.16	0.01	0.05	-0.07	0.01	0.39***	--	0.32**
15. Aggressive defending (T2)	0.12	0.43***	0.56***	0.32***	-0.12	0.09	0.43***	0.13	0.29**	0.54***	0.50***	0.44***	-0.30**	0.15	--

Boys represented in the upper diagonal, girls in the lower diagonal

T1 Time 1, T2 Time 2

† $p < 0.10$. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

Fig. 1 Associations between superhero engagement and behavioral outcomes over time. *Note.* Standardized values are shown. For model simplicity, covariates (television violence, television time, and gender) are not shown in the figure. Additionally, correlations are not shown between exogenous variables, nor are covariances between endogenous variables or error terms. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$



Discussion

Parents cited aggression and defending in superhero media as reasons they supported or discouraged this type of media for their children. Some parents reported encouraging engagement with superheroes because they defend others and stand for good and justice. Others reported limiting children’s superhero exposure because of the mixed messages regarding physical aggression and violence and defending behaviors. It would seem that parents are struggling to understand the potential effects of superhero engagement on their young children’s aggressive and defending behaviors. Results from the current study suggest that engagement with superheroes is related longitudinally to preschool children’s aggression but not to prosocial or defending behavior. In particular, preschoolers who were highly engaged with superheroes were more likely to be physically and relationally aggressive 1 year later, even after controlling for initial levels of physical and relational aggression and their exposure to other aggressive media. Although superhero programs contain high amounts of prosocial behavior and defending behaviors, preschool

boys’ and girls’ engagement with superheroes was not related to increased frequency of these behaviors across time.

The current findings are consistent with past research, which has repeatedly shown that exposure to aggressive and violent media can result in increased aggressive behavior (Anderson et al. 2010). These effects have been shown in the short-term (Bushman and Anderson 2001) and longitudinally (Bushman and Huesmann 2006). Notably, the current findings extend existing research to show the unique, longitudinal effects of superhero media on the development of children’s aggression. In particular, engagement with superhero characters was related to increases in physical aggression even after controlling for other media violence. Conversely, child behaviors at Time 1 did not predict superhero engagement at Time 2, suggesting that the association between superhero engagement and aggression may be more media driven rather than viewer selection effects.

Although it is beyond the scope of the current study to fully explain this finding, it is likely that the characteristics of superhero media underlie this finding. Specifically, existing theories of media effects, such as the GAM and the GLM,

emphasize the role of aggressive cognitions in mediating links between media exposure and social behaviors and emphasize the types of media portrayals that are most likely to affect cognitions. According to these theories, behaviors that are rewarded, glamorized, justified, and enacted by attractive characters whom children admire will be most likely to be learned and adopted by viewers. In addition, implicit or explicit approval of media portrayals by adults has been shown to increase media effects on children (for a review, see Cantor and Wilson 2003). Superhero characters and programs may provide highly salient models of violent behavior which parents might normally be concerned with. Yet, at the same time, these programs include enough prosocial behavior and traits that parents endorse and support their children's exposure to these models. In fact, parents specifically cited these prosocial behaviors as reasons for allowing their children to engage with superhero media. The combination of high levels of aggression and parental approval of such aggression may explain the unique effects of superhero media above and beyond other forms of media aggression.

The age of the participants in the current study may also have made them vulnerable to the effects of superhero media on behavior. Young children in particular may be most at risk for negative effects of media violence exposure as they are still forming schemes and scripts regarding appropriate social behavior (Huesmann et al. 2003) and cannot consistently distinguish between fantasy and reality (Sharon and Woolley 2004). This immaturity in higher-order cognitive processes may make preschool children at particular risk for increased aggression after exposure to violence in the media, especially superhero violence, and the results from this study support these concerns.

It is important to note that superhero violence may be particularly salient to young children as compared to watching other potential models of aggression and prosocial behavior, such as law enforcement officers. In particular, police officers depicted in superhero media frequently appear *after* the physical altercations between the "bad guys" and the superheroes. After the battle is won, law enforcement officers appear to handcuff and punish the villains, without using aggressive behavior. In fact, previous researchers have shown that preschool children view law enforcement officers as punitive rather than aggressive (Powell et al. 2008) and this would appear to be supported in superhero media.

Superhero engagement was also associated with increased relational aggression over time. Previous research has shown that exposure to one type of aggressive behavior may be associated with increases in other types of aggression (Coyne et al. 2008), as all aggression-related scripts and schemes are strengthened. Young children may be at particular risk for this cross-over effect as they are still attempting to learn the rules of social behavior and do not have the benefit of a fully developed prefrontal cortex to inhibit behavior, especially in the

presence of emotionally salient information (Carlson and Wang 2007).

While superhero media contains high amounts of prosocial behavior and defending, engagement with superhero characters was not related to preschoolers' general prosocial behavior or defending. Previous research has shown that exposure to prosocial media is related to increased prosocial and helping behavior in preschool children (Ostrov et al. 2006). However, these previous studies focused exclusively on prosocial media and did not have media that mixed prosocial and aggressive content, like superhero characters. It is possible that the mixing of prosocial and aggressive behavior is too complicated for preschool children to disentangle. In fact, a few parents reported this mix of aggression and prosocial as a reason they did not allow their young children to engage with superhero media. Young children do not have the executive functioning necessary to hold multiple, competing ideas consistently in their working memory (Carlson and Wang 2007). Additionally, when evaluating the appropriateness of media depictions of aggression, children younger than age seven are more likely than older children to rely on more straightforward contextual factors such as the presence of punishment than to consider more complex factors such as provocation and motivation (Kremer and Cooke 2001). As a result, it is possible that preschool children will focus more on the aggression seen in superhero media, which is very salient, repeated, rewarded, justified, glamorized, and instantaneous, and less on the prosocial content, which is more subtle, delayed between cause and effect, less glamorized, and intertwined with aggressive behaviors.

An additional explanation for the lack of association between superhero engagement and defending behavior is that exposure to superhero media results in desensitization, which is the reduction in cognitive and emotional responses to stimuli (Funk et al. 2004). Desensitization has been shown to result from media violence exposure and is one of the key mechanisms accounting for media violence effects on behavior, in part because it has been shown to result in decreased empathy for victims of violence (for a review, see Brockmyer 2013). Given that defenders of bullying have been shown to rate higher on empathy than nondefenders (e.g., Barchia and Bussey 2011), it may be that the desensitization to the suffering of victims that results from superhero media exposure reduces empathy in preschoolers, thereby mitigating the imitation of superheroes' defending behavior by young viewers. Future research should explore this possibility by assessing empathy for victims of bullying in relation to preschoolers' superhero engagement.

An alternative explanation for the lack of associations found between superhero exposure and defending behavior may be that these associations are moderated by cognitions not measured in the current study. For example, Pronk et al. (2013) found that self-efficacy beliefs about intervening in bullying distinguished children identified as defenders from

other children who simply witnessed bullying. Therefore, it may be that preschoolers may not demonstrate defending behaviors that they have learned from superhero characters unless they also feel confident in their own abilities to enact such behaviors. Indeed, social cognitive theories of behavior stress the importance of self-efficacy in determining behavior decisions in interpersonal situations (Bandura 1991). Future research should explore this possibility by including measurement of cognitions such as self-efficacy regarding prosocial and defending behaviors in addition to behavioral outcomes.

Given our emphasis on both aggressive and nonaggressive defending behaviors, a few comments are in order about the descriptive statistics for these variables. Table 2 shows that aggressive defending is, in the minds of parents, rather uncommon (similar to parent reports of both physical and relational aggression). The means for nonaggressive defending were appreciably higher, by comparison, though not as high as the means for prosocial behavior. Yet Table 3 shows that, for boys, there is a moderately strong correlation between aggressive and nonaggressive defending behaviors, both concurrently and even over time. These trends are not as evident for girls. These correlations are a bit surprising, since nonaggressive defending may be considered a unique form of prosocial behavior. It may be that preschool boys who engage in aggressive defending behaviors are perceived by parents to operate on a spectrum of defending behaviors, varying their reaction according to the demands of the situation. Further research is needed to illuminate how boys, in particular, may initiate defending behavior. It is possible that many boys understand the need for nonaggressive defending behaviors, but escalate to aggressive defending if their efforts do not bring about the intended result.

Notably, for both boys and girls, nonaggressive defending does not correlate with physical or relational aggression, but aggressive defending does. Therefore, although aggressive and nonaggressive defending tend to correlate for boys, the latter is not considered by parents to go in tandem with aggressive behaviors with peers. The correlation between aggression and aggressive defending suggests that aggressive children may engage in certain forms of defending behavior. It may also reflect the desire of some parents to reframe some percentage of their child's behaviors as justifiable and even worthy of approbation. This gives some confidence that parents are being thoughtful about how they rate their children in regard to subtypes of aggression and defending behaviors. It is also clear that the intersection of aggression and defending behaviors is likely to be a complex matter to pursue in future research.

The current study adds to the existing literature examining associations between exposure to media content and aggressive and prosocial behaviors. However, it is not without limitations. The above study relied exclusively on parent reports of their children's behavior. Beyond shared method variance issues, it is also possible that parents are not unbiased or accurate reporters of their children's behaviors with peers.

Past research has shown that parents tend to underreport rather than overreport their children's aggressive behavior (Achenbach et al. 1987). This may reflect social desirability bias and/or limited exposure to the child's behaviors with peers. It should be noted that many well-established measures of physical and prosocial behavior in preschool children employ parent reports (Goodman and Scott 1999), and our approach is in keeping with such research. Nonetheless, future research will need to compare parent, teacher, and peer reports of these defending behaviors to understand how they may be perceived and whether one informant is perhaps the best.

Notably, the current study is a one-year longitudinal study. One year may not be developmentally enough time to capture the long-term effects of engagement with complicated characters such as superheroes on the development of aggressive and prosocial behaviors in preschool children. Future research should examine these relationships across multiple years, with multiple reporters, and add experimental manipulations to determine causation. It is possible that the effect of superhero media may be best detected in later developmental periods. Additionally, though we controlled for the amount of time and violence of watching general media, we did not control for identification with non-superhero violent characters. Future research may wish to adopt methods that provide parallel assessments of both superhero engagement and violent media engagement when considering control variables.

In spite of the above limitations, the current study addresses an important, understudied area in the field of media effects research. To our knowledge, this is the first study to examine the effect of any type of media on defending behavior in young children. This study would suggest that media (specifically engagement with superheroes) does not influence defending behavior concurrently or over a short developmental span. Future research should examine other types of media to examine whether media has any noticeable impact on any defending behavior. The current study also adds support for the assertion that exposure to violence and aggression in the media can lead to increased aggression in the long term. Children in early childhood may be particularly at risk for the negative effects of media violence exposure when the superhero medium is emphasized. It appears to be difficult for young children to disentangle aggression and prosocial behavior when they are combined, as is common in the superhero genre of media. Parents, teachers, and policy makers should use caution when allowing their young children to be exposed to media that contains high amounts of both aggression and prosocial behavior, as the results of the current study suggest that in the long-term children are more likely to enact the aggression than the prosocial and defending behaviors. Parents may need to help their children filter the messages arising from superhero media in order to minimize aggressive behavior outcomes and promote defending gestures on behalf of their most vulnerable peers.

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Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

References

- Achenbach, T. M., McConaughy, S. H., & Howell, C. T. (1987). Child/adolescent behavioral and emotional problems: implications of cross-informant correlations of situational specificity. *Psychological Bulletin*, *101*, 213–232.
- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, *53*, 27–51. doi:10.1146/annurev.psych.53.100901.135231.
- Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: a meta-analytic review. *Psychological Bulletin*, *136*, 151–173. doi:10.1037/a0018251.
- Baker, K., & Raney, A. A. (2007). Equally super?: gender-role stereotyping of superheroes in children's animated programs. *Mass Communication & Society*, *10*, 25–41. doi:10.1080/15205430709337003.
- Bandura, A. (1991). Social cognitive theory of moral thought and action. In W. M. Kurtines & J. L. Gewirtz (Eds.), *Handbook of moral behavior and development* (pp. 45–103). Hillsdale: Erlbaum.
- Barchia, K., & Bussey, K. (2011). Predictors of student defenders of peer aggression victims: empathy and social cognitive factors. *International Journal of Behavioral Development*, *35*, 289–297. doi:10.1177/0165025410396746.
- Brockmyer, J. F. (2013). Media violence, desensitization, and psychological engagement. In K. E. Dill (Ed.), *The Oxford handbook of media psychology* (pp. 212–222). New York: Oxford University Press.
- Brown, L. M., Lamb, S., & Tappan, M. (2009). *Packaging boyhood: saving our sons from superheroes, slackers, and other media stereotypes*. New York: St. Martin's Press.
- Buckley, K. E., & Anderson, C. A. (2006). A theoretical model of the effects and consequences of playing video games. In P. Vorderer & J. Bryant (Eds.), *Playing video games: motives, responses, and consequences* (pp. 363–378). Mahwah: Erlbaum.
- Busching, R., Gentile, D. A., Krahe, B., Möller, I., Khoo, A., Walsh, D. A., & Anderson, C. A. (2013). Testing the reliability and validity of different measures of violent video game use in the United States, Singapore, and Germany. *Psychology of Popular Media Culture*, *4*, 97–111. doi:10.1037/ppm0000004.
- Bushman, B. J., & Anderson, C. A. (2001). Media violence and the American public: scientific facts versus media misinformation. *American Psychologist*, *56*, 477–489. doi:10.1037/0003-066X.56.6-7.477.
- Bushman, B. J., & Anderson, C. A. (2009). Comfortably numb: desensitizing effects of violent media on helping others. *Psychological Science*, *20*, 273–277. doi:10.1111/j.1467-9280.2009.02287.x.
- Bushman, B. J., & Huesmann, L. R. (2006). Short-term and long-term effects of violent media on aggression in children and adults. *Pediatrics*, *160*, 348–352. doi:10.1001/archpedi.160.4.348.
- Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychological Review*, *106*, 676–713. doi:10.1037/0033-295X.106.4.676.
- Camodeca, M., & Coppola, G. (2015). Bullying, empathic concern, and internalization of rules among preschool children: the role of emotion understanding. *International Journal of Behavioral Development*, *10*, 5–17. doi:10.1177/0165025415607086.
- Cantor, J., & Wilson, B. J. (2003). Media and violence: intervention strategies for reducing aggression. *Media Psychology*, *5*, 363–403. doi:10.1207/S1532785XMEP0504_03.
- Caravita, S. C. S., Blasio, P. D., & Salmivalli, C. (2010). Early adolescents' participation in bullying: is ToM involved? *The Journal of Early Adolescence*, *30*, 138–170. doi:10.1177/0272431609342983.
- Caravita, S. C. S., Gini, G., & Pozzoli, T. (2012). Main and moderated effects of moral cognition and status on bullying and defending. *Aggressive Behavior*, *38*, 456–468. doi:10.1002/ab.21447.
- Carlson, S. M., & Wang, T. S. (2007). Inhibitory control and emotion regulation in preschool children. *Cognitive Development*, *22*, 489–510. doi:10.1016/j.cogdev.2007.08.002.
- Coyne, S. M. (2016). Effects of viewing relational aggression on television on aggressive behavior in adolescents: a three-year longitudinal study. *Developmental Psychology*, *52*, 284–295. doi:10.1037/dev0000068.
- Coyne, S. M., Nelson, D. A., Lawton, F., Haslam, S., Rooney, L., Titterton, L., et al. (2008). The effects of viewing physical and relational aggression in the media: evidence for a cross-over effect. *Journal of Experimental Social Psychology*, *44*, 1551–1554. doi:10.1016/j.jesp.2008.06.006.
- Coyne, S. M., Linder, J. R., Rasmussen, E. E., Nelson, D. A., & Collier, K. M. (2014). It's a bird! It's a plane! It's a gender stereotype!: longitudinal associations between superhero viewing and gender stereotype play. *Sex Roles*, *70*, 416–430. doi:10.1007/s11199-014-0374-8.
- Coyne, S. M., Padilla-Walker, L. M., Holmgren, H. G., Collier, K. M., Davis, E. J., Memmott-Elison, M. K. (2016). A meta-analysis of prosocial media on prosocial behavior, aggression, and empathic concern: a multidimensional approach. Under Review.
- Crick, N. R., Casas, J. F., & Mosher, M. (1997). Relational and overt aggression in preschool. *Developmental Psychology*, *33*, 579–588. doi:10.1037/0012-1649.33.4.579.
- Crick, N. R., Casas, J. F., & Ku, H. (1999). Relational and physical forms of peer victimization in preschool. *Developmental Psychology*, *35*, 376–385. doi:10.1037/0012-1649.35.2.376.
- Fraser, A. M., Padilla-Walker, L. M., Coyne, S. M., Nelson, L. J., & Stockdale, L. A. (2012). Associations between violent video gaming, empathic concern, and prosocial behavior toward strangers, friends, and family members. *Journal of Youth and Adolescence*, *41*, 636–649. doi:10.1007/s10964-012-9742-2.
- Funk, J. B., Baldacci, H. B., Pasold, T., & Baumgardner, J. (2004). Violence exposure in real-life, video games, television, movies, and the internet: is there desensitization? *Journal of Adolescence*, *27*, 23–39. doi:10.1016/j.adolescence.2003.10.005.
- Gerde, V. W., & Foster, R. S. (2008). X-men ethics: using comic books to teach business ethics. *Journal of Business Ethics*, *77*, 245–258. doi:10.1007/s10551-006-9347-3.
- Goodman, R., & Scott, S. (1999). Comparing the strengths and difficulties questionnaire and the child behavior checklist: is small beautiful? *Journal of Abnormal Child Psychology*, *27*, 17–24.
- Greitemeyer, T. (2011). Effects of prosocial media on social behavior: when and why does media exposure affect helping and aggression? *Current Directions in Psychological Science*, *20*, 251–255. doi:10.1177/0963721411415229.
- Huesmann, L. R., Moise-Titus, J., Podolski, C., & Eron, L. D. (2003). Longitudinal relations between children's exposure to TV violence and their aggressive and violent behavior in young adulthood: 1977–1992. *Developmental Psychology*, *39*, 201–221.

- Huitsing, G., Snijders, T. A. B., Van Duijn, M. A. J., & Veenstra, R. (2014). Victims, bullies, and their defenders: a longitudinal study of the co-evolution of positive and negative networks. *Development and Psychopathology*, *26*, 645–659. doi:10.1017/S0954579414000297.
- Johansson, J., & Hannula, M. S. (2012). Third graders' perceptions on moral behaviour on bullying if they had the infinite powers of superhero defenders. *Education Research International*, *2012*, 1–15. doi:10.1155/2012/258181.
- Kärnä, A., Voeten, M., Poskiparta, E., & Salmivalli, C. (2010). Vulnerable children in varying classroom contexts: bystanders' behaviors moderate the effects of risk factors on victimization. *Merrill-Palmer Quarterly*, *56*, 261–282. doi:10.1353/mpq.0.0052.
- Konijn, E. A., NijeBijvank, M., & Bushman, B. J. (2007). I wish I were a warrior: the role of wishful identification in the effects of violent video games on aggression in adolescent boys. *Developmental Psychology*, *43*, 1038–1044. doi:10.1037/0012-1649.43.4.1038.
- Krcmar, M., & Cooke, M. C. (2001). Children's moral reasoning and their perceptions of television violence. *Journal of Communication*, *51*, 300–316. doi:10.1111/j.1460-2466.2001.tb02882.x.
- Kristensen, S. M., & Smith, P. K. (2003). The use of coping strategies by Danish children classed as bullies, victims, bully/victims, and not involved, in response to different (hypothetical) types of bullying. *Scandinavian Journal of Psychology*, *44*, 479–488.
- List of American Superhero Films. (2014). In *Wikipedia*. http://en.wikipedia.org/wiki/List_of_American_superhero_films. Retrieved 14 March 2014.
- Lofland, J., Snow, D., Anderson, L., & Lofland, L. H. (2006). *Analyzing social settings: a guide to qualitative observation and analysis*. Toronto: Wadsworth.
- Luther, C. A., & Legg, J. R. (2010). Gender differences in depictions of social and physical aggression in children's television cartoons in the US. *Journal of Children and Media*, *4*, 191–205. doi:10.1080/17482791003629651.
- Mares, M., & Woodard, E. (2005). Positive effects of television on children's social interactions: a meta-analysis. *Media Psychology*, *7*, 301–322. doi:10.1207/S1532785XMEP0703_4.
- Martin, J. F. (2007). Children's attitudes toward superheroes as a potential indicator of their moral understanding. *Journal of Moral Education*, *36*, 239–250.
- Monks, C. P., Smith, P. K., & Swettenham, J. (2003). Aggressors, victims, and defenders in preschool: peer, self-, and teacher reports. *Merrill-Palmer Quarterly*, *49*, 453–469.
- Monks, C. P., Palermi, A., Ortega, R., & Costabile, A. (2011). A cross-national comparison of aggressors, victims and defenders in preschools in England, Spain, and Italy. *The Spanish Journal of Psychology*, *14*, 133–144. doi:10.5209/rev_SJOP.2011.v14.n1.11.
- Morrison, G. (2011). *Supergods: our world in the age of the superhero*. London: Random House.
- Nickerson, A. B., & Mele-Taylor, D. (2014). Empathetic responsiveness, group norms, and prosocial affiliations in bullying roles. *School Psychology Quarterly*, *29*, 99–109. doi:10.1037/spq0000052.
- Ostrov, J. M., & Keating, C. F. (2004). Gender differences in preschool aggression during free play and structured interactions: an observational study. *Social Development*, *13*, 255–277. doi:10.1111/j.1467-9507.2004.000266.x.
- Ostrov, J. M., Gentile, D. A., & Crick, N. R. (2006). Media exposure, aggression, and prosocial behavior during early childhood: a longitudinal study. *Social Development*, *15*, 612–627.
- Powell, M. B., Skouteris, H., & Murfett, R. (2008). Children's perceptions of the role of police: a qualitative study. *International Journal of Police Science and Management*, *10*, 464–473. doi:10.1350/ijps.2008.10.4.099.
- Pöyhönen, V., Juvonen, J., & Salmivalli, C. (2012). Standing up for the victim, siding with the bully or standing by? Bystander responses in bullying situations. *Social Development*, *21*, 722–741. doi:10.1111/j.1467-9507.2012.00662.x.
- Pozzoli, T., & Gini, G. (2010). Active defending and passive bystanding behavior in bullying: the role of personal characteristics and perceived peer pressure. *Journal of Abnormal Child Psychology*, *38*, 815–827. doi:10.1007/s10802-010-9399-9.
- Pozzoli, T., Gini, G., & Vieno, A. (2012). The role of individual correlates and class norms in defending and passive bystanding behavior in bullying: a multilevel analysis. *Child Development*, *83*, 1917–1931. doi:10.1111/j.1467-8624.2012.01831.x.
- Pronk, J., Goossens, F. A., Olthof, T., de Mey, L., & Willemen, A. M. (2013). Children's intervention strategies in situations of victimization by bullying: social cognitions of outsiders versus defenders. *Journal of School Psychology*, *51*, 669–682. doi:10.1016/j.jsp.2013.09.002.
- Prot, S., Gentile, D. A., Anderson, C. A., Suzuki, K., Swing, E., Lim, K. M., & Lam, B. C. P. (2013). Long-term relations among prosocial media use, empathy, and prosocial behavior. *Psychological Science*, *25*, 358–368. doi:10.1177/0956797613503854.
- Rosenkoetter, L. I., Rosenkoetter, S. E., & Acock, A. C. (2009). Television violence: an intervention to reduce its impact on children. *Journal of Applied Developmental Psychology*, *30*, 381–397. doi:10.1016/j.appdev.2008.12.019.
- Rubinstein, S. L. (2004). *Understanding adolescent participation in harassment: a social cognitive approach* (Doctoral dissertation, Queen's University, Canada). Retrieved from <http://search.proquest.com/docview/305095967/abstract?accountid=4488>.
- Salmivalli, C., Lagerspetz, K., Björkqvist, K., Österman, K., & Kaukiainen, A. (1996). Bullying as a group process: participant roles and their relations to social status within the group. *Aggressive Behavior*, *22*, 1–15. doi:10.1002/(SICI)1098-2337(1996)22:1<1::AID-AB1>3.0.CO;2-T.
- Salmivalli, C., Voeten, M., & Poskiparta, E. (2011). Bystanders matter: associations between reinforcing, defending, and the frequency of bullying behavior in classrooms. *Journal of Clinical Child and Adolescent Psychology*, *40*, 668–676. doi:10.1080/15374416.2011.597090.
- Sharon, T., & Woolley, J. D. (2004). Do monsters dream? Young children's understanding of the fantasy/reality distinction. *The British Journal of Developmental Psychology*, *22*, 293–310.
- Sijtsema, J. J., Rambaran, J. A., Caravita, S. C. S., & Gini, G. (2014). Friendship selection and influence in bullying and defending: effects of moral disengagement. *Developmental Psychology*, *50*, 2093–2104. doi:10.1037/a0037145.
- Thornberg, R., & Jungert, T. (2013). Bystander behavior in bullying situations: basic moral sensitivity, moral disengagement and defender self-efficacy. *Journal of Adolescence*, *36*, 475–483. doi:10.1016/j.adolescence.2013.02.003.
- van Noorden, T. H. J., Haselager, G. J. T., Cillessen, A. H. N., & Bukowski, W. M. (2014). Empathy and involvement in bullying in children and adolescents: a systematic review. *Journal of Youth and Adolescence*, *44*, 637–657. doi:10.1007/s10964-014-0135-6.
- Worldwide Grosses (2015). Retrieved from <http://www.boxofficemojo.com/alltime/>. Accessed 10 June 2015.