Journal of Experimental Social Psychology 49 (2013) 173–177

Contents lists available at SciVerse ScienceDirect

Journal of Experimental Social Psychology

journal homepage: www.elsevier.com/locate/jesp

FlashReport

Batman to the rescue! The protective effects of parasocial relationships with muscular superheroes on men's body image

Ariana F. Young *, Shira Gabriel, Jordan L. Hollar

University at Buffalo, The State University of New York, Department of Psychology, 206 Park Hall, Buffalo, NY 14260, USA

HIGHLIGHTS

- This study examined the effects of superheroes on men's body image, with PSR status as a moderator.
- Exposure to a muscular non-PSR superhero made men feel bad about their bodies.
- Exposure to a muscular PSR superhero was not harmful and increased men's strength.
- Thus, the effects of muscular superheroes on men's body image depend on PSR status.

ARTICLE INFO

Article history:
Received 19 June 2012
Revised 27 July 2012
Available online 14 August 2012

Keywords:
Men's body image
Parasocial relationships
Superheroes
Muscular media figures
Social comparison
Social cognition

ABSTRACT

Superheroes have a considerable presence in our society and dominate popular media for boys and men, while often representing unattainable muscular ideals. The present research is the first to examine the effects of superheroes on men's body image and the moderating role of parasocial relationship status (PSR; a one-sided psychological bond) on those effects. Men who had vs. did not have a PSR with a superhero were exposed to a muscular vs. non-muscular image of that superhero. As predicted, exposure to a muscular superhero with whom a PSR did not exist made men feel bad about their bodies (Hypothesis 1). However, having a PSR with a muscular superhero not only eliminated the negative effects of exposure on body satisfaction, but also increased men's physical strength (Hypothesis 2). This research suggests that muscular superheroes change men's body image and that the direction of that change is determined by PSR status.

Introduction

From childhood to adulthood, superheroes play an important part in men's lives. Boys grow up watching superhero cartoons, reading comic books, and playing with superhero action figures. In some cases, boys even pretend to *be* superheroes (Parsons & Howe, 2006). As adults, men reconnect with their favorite superheroes through the world of cinema. Movies featuring superheroes are among the most popular films made, grossing over $10 billion in box office sales worldwide (Box office mojo, n.d.). Despite the pervasiveness of superheroes in male lives, very little is known about their psychological effects, especially in the area of body image. This area is of particular importance because over the last few decades, superheroes' bodies have become extremely muscular with body dimensions that are impossible for most men to attain (Baghurst, Hollander, Nardella, & Haff, 2006; Pope, Olivardia, Gruber, & Borowiecki, 1999). The goal of the current research was to examine the effects of muscular superheroes on men's body image.

Body dissatisfaction is a growing problem among men and is associated with a wide array of negative outcomes, including low self-esteem, depression, eating disorders, steroid use, and muscle dysmorphia—a pathological preoccupation with one's muscularity (Cafri, Olivardia, & Thompson, 2008; Olivardia, Pope, Borowiecki, & Cohane, 2004). An abundance of correlational and experimental research shows that exposure to muscular media figures contributes to men's body dissatisfaction (see Barlett, Vowels, & Saucier, 2008; Blond, 2008 for meta-analytic reviews). These findings are consistent with research demonstrating that comparison with a target who is not close to the self leads to contrastive effects, such that the self becomes dissimilar to that target (Brown, Novick, Lord, & Richards, 1992; Dijksterhuis et al., 1998; Mussweiler, 2003). In other words, muscular figures make men feel bad, because by comparison, their own bodies seem small. Although the effects of muscular superheroes on men's body image have yet to be directly examined, it seems reasonable to assume that they would lead to body dissatisfaction as well. In support of this idea, one study found that handling muscular action figures (some of whom were superheroes) led to decreases in body esteem (Barlett, Harris, Smith, & Bonds-Raacke, 2005).

However, the interest and attachment that many men have with superheroes not only makes examining them important, it also suggests

* Corresponding author. Fax: +1 716 645 3801.
E-mail address: afyoung@buffalo.edu (A.F. Young).

0022-1031/$ – see front matter © 2012 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.jesp.2012.08.003

that superheroes' effects on body image may not be simple. Psychological connections with media figures, referred to as parasocial relationships (PSRs; Horton & Wohl, 1956), are a common and normal part of identity-development (Boon & Lomore, 2001; Giles & Maltby, 2004). Much research suggests that the psychological bond with a PSR is very similar to a bond with a real relationship partner (Derrick, Gabriel, & Hugenberg, 2009; Derrick, Gabriel, & Tippin, 2008; Gardner & Knowles, 2008).

Research on PSRs has found that instead of comparing themselves and feeling bad when they do not measure up to PSRs, people tend to assimilate their characteristics, and thus feel better when PSRs have traits to which they aspire (Derrick et al., 2008). For example, PSR status moderates the effects of thin media figures on women's body image, such that having a PSR with a thin media figure no longer has harmful effects and may even lead women to feel better about their bodies (Young, Gabriel, & Sechrist, 2012). This is because having a close relationship with a target leads to a heightened sense of similarity to that target, which results in assimilation of the target's attributes to the self (Brown et al., 1992; Mussweiler, 2003); thus, thin PSRs lead women to perceive their own bodies as thinner. Research has yet to examine the moderating role of PSR status with muscular media figures on men's body image. The current research examines this in a fashion that is familiar and pervasive to many men: through images of superheroes.

Overview of the present research

The present research was designed to investigate the effects of exposure to muscular superheroes on men's body image and the moderating role of PSR status. We conducted two versions of the study, a Batman version and a Spider-Man version, so we could rule out potential confounds associated with a particular superhero. For each version, participants who had vs. did not have a PSR with the superhero were exposed to a muscular vs. non-muscular (i.e., control) image of the superhero. Following, we assessed participants' feelings of muscularity (which would reflect assimilative or contrastive processes) with measures of body satisfaction and physical strength. Consistent with previous work demonstrating the harmful effects of muscular media figures (Barlett et al., 2008; Blond, 2008), we predicted that exposure to muscular non-PSR superheroes would have a negative impact on body image (Hypothesis 1). However, consistent with previous work on the moderating role of PSRs (Young et al., 2012), we expected that the negative effects of exposure to muscular ideals on feelings of muscularity would be eliminated, and perhaps even flipped, when a PSR exists (Hypothesis 2).

Method

Participants

Ninety-eight male undergraduates (65% White; $M_{age} = 19$, $SD_{age} = 1.27$) participated in exchange for course credit.

Procedure and materials

During a mass testing session, we assessed participants' PSR status with Batman and Spider-Man (separately). Based on previous research (Derrick et al., 2008; Young et al., 2012), participants' responses to the items "How much do you like Batman (Spider-Man)?" and "How familiar are you with Batman (Spider-Man)?" using 1 (*not at all*) to 5 (*extremely*) scales were averaged ($\alpha_{Batman} = .88$; $\alpha_{Spider\text{-}Man} = .83$); participants with high (4 and above) and low (2.5 and below) scores for each superhero were recruited for the corresponding version of the study. We also assessed participants' muscularity using a scale we developed called the Male Muscularity Scale (see Appendix A) that asked them to select which of five images, ranging from non-muscular to very muscular, best represented their bodies. This measure was included so we could control for muscularity, which we assumed might be related to our dependent variables of body satisfaction and physical strength (Muth & Cash, 1997).

During the lab portion of the study, participants viewed a profile of Batman or Spider-Man (depending on the version of the study), ostensibly as part of a memory task. The profile contained a general bio and a full-body picture of the superhero. We manipulated the images such that the superhero was portrayed as muscular or non-muscular (see Appendix B). Participants were given 1 min to look over the profile. Following, participants indicated their current mood on the Positive and Negative Affective Schedule ($\alpha_{pos} = .91$; $\alpha_{neg} = .87$; Watson, Clark, & Tellegen, 1988) and current self-esteem on the State Self-Esteem Scale ($\alpha = .93$; Heatherton & Polivy, 1991). Participants then completed the Body Esteem Scale (Franzoi & Shields, 1984) by rating their satisfaction with various body parts or functions using a 1 (*have strong negative feelings*) to 7 (*have strong positive feelings*) scale. The measure included items such as "muscular strength," "biceps," "chest," and "physical condition" (33 items, $\alpha = .94$).[1]

Next, we assessed participants' physical strength. Participants were individually escorted into a separate room and given a hand-held dynamometer (Camry Electronic Handgrip Dynamometer©). They squeezed the device as hard as possible with their dominant hand, keeping their arm at their side. The dynamometer provided a digital reading of the maximum achieved grip power (in pounds). Finally, participants provided some general demographic information and then were debriefed, thanked, and dismissed.

Results

We predicted that PSR status would moderate the effects of exposure to muscular superheroes on men's body image. Specifically, we hypothesized that exposure to muscular non-PSR superheroes would make men feel bad about their bodies (Hypothesis 1), but that PSR status would moderate that effect, attenuating and perhaps even flipping the effects (Hypothesis 2). To test these predictions, we conducted a series of PSR Status (PSR vs. non-PSR) × Superhero Muscularity (muscular vs. non-muscular) between-subjects ANCOVAs, with participants' muscularity as a covariate.[2] There were no differences based on the superhero version of the study (Batman vs. Spider-Man), so we collapsed across this variable for all analyses.

Analyses revealed a significant PSR Status × Superhero Muscularity interaction for body esteem, $F(1,81) = 6.01$, $p = .02$, $\eta_p^2 = .07$ (see Fig. 1). As predicted, PSR status moderated the effect of muscular superheroes: participants exposed to a muscular PSR superhero experienced higher body esteem than those exposed to a muscular non-PSR superhero, $t(81) = 2.58$, $p = .01$, $\eta_p^2 = .12$. Furthermore, and also as predicted, when a PSR did not exist, participants exposed to a muscular superhero experienced lower body esteem than those exposed to a non-muscular superhero, $t(81) = 1.96$, $p = .05$, $\eta_p^2 = .09$. This negative effect did not occur when a PSR existed, $t(81) = .93$, $p = .36$, $\eta_p^2 = .01$.

Results also revealed a significant PSR Status × Superhero Muscularity interaction for hand-grip strength, $F(1,80) = 4.93$, $p = .03$, $\eta_p^2 = .06$ (see Fig. 2). As predicted, PSR status moderated the effect of muscular superheroes: participants exposed to a muscular PSR superhero were stronger than those exposed to a muscular non-PSR superhero, $t(80) = 3.21$, $p = .002$, $\eta_p^2 = .25$. In addition, when a PSR existed, participants exposed to a muscular superhero demonstrated greater strength than those exposed to a non-muscular superhero, $t(80) = 2.88$, $p = .005$, $\eta_p^2 = .18$.

One possible alternative explanation is that these findings could be attributed to changes in mood or self-esteem. However, results

[1] The Body Esteem Scale consists of three subscales (Upper Body Strength, Physical Condition, and Physical Attractiveness) which were highly correlated, $r(96) \geq .60$, $p < .001$, and the results looked very similar when analyzed separately. Thus, we report the results using the overall scale average.

[2] The covariate did not interact with the main independent variables to predict either dependent variable and the same, albeit weaker, pattern of results emerged when the covariate was not included.

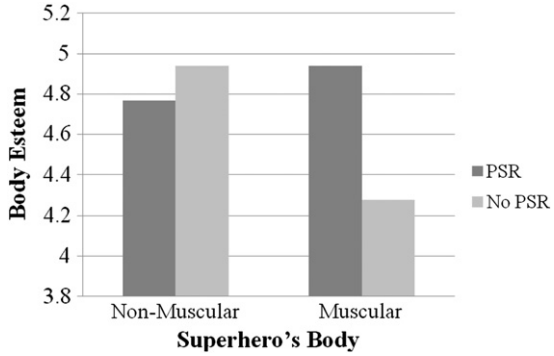


Fig. 1. Body esteem as a function of PSR status and superhero muscularity.

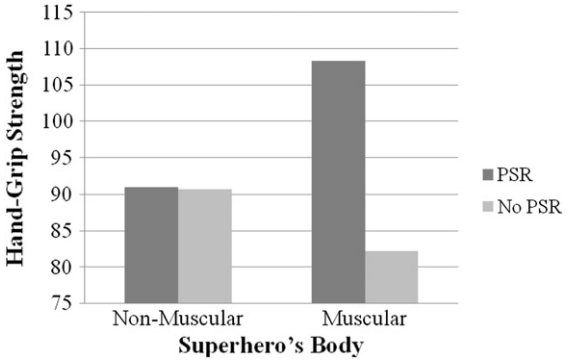


Fig. 2. Hand-grip strength (in pounds) as a function of PSR status and superhero muscularity.

revealed no significant interactions for positive affect ($p = .81$), negative affect ($p = .45$), or self-esteem ($p = .65$). In addition, the same pattern of results emerged when controlling for mood and/or self-esteem in the original analyses. Thus, the findings do not appear to be caused by mood or self-esteem.

Finally, because we measured PSR status rather than manipulated it, it is possible that it was not the PSR with the superhero that led to the assimilation, but instead some idiosyncrasy of those with PSRs that leads them to assimilate *any* muscular body. To examine that hypothesis, we looked at participants who did not have a PSR with the exposed superhero (e.g., Spider-Man), but *did* have a PSR with the non-exposed superhero (e.g., Batman). If people with PSRs assimilate any muscular body, then those participants should demonstrate assimilation. However, if we are correct and it is the PSR with the exposed superhero that leads to assimilation, then those participants should not show assimilation.

To examine those possibilities, we selected only participants who were exposed to a non-PSR superhero and conducted a PSR Status with the Non-Exposed Superhero (PSR with other superhero vs. No PSR with other superhero) × Exposed Superhero Muscularity (muscular vs. non-muscular) ANCOVA for each dependent variable, with participants' muscularity as a covariate. For body esteem, the interaction was not significant ($p = .25$) and only a main effect of exposed superhero muscularity emerged, $F(1,33) = 5.2$, $p = .03$, $\eta_p^2 = .14$ (see Fig. 3). In other words, it did not matter if participants had a PSR with the other superhero; those who viewed a muscular non-PSR superhero still demonstrated contrast effects and felt worse about their bodies. For hand-grip strength, there was a marginal interaction, $F(1,32) = 3.49$, $p = .07$, $\eta_p^2 = .10$ (see Fig. 4). However, this interaction was not caused by participants with PSRs assimilating the exposed superhero. Instead, when viewing a non-muscular superhero, participants who had a PSR with the other superhero tended to demonstrate greater strength than those without a PSR (i.e., a contrast effect), $t(32) = 1.90$, $p = .07$, $\eta p^2 = .16$. In summary, these results strongly support our hypothesis that it is a PSR with the exposed superhero that leads to assimilation, and not just being the kind of person who has PSRs. Participants with a PSR with the non-exposed superhero did not demonstrate assimilation and instead tended to show contrast effects.

In summary, these results demonstrate that PSR status moderates the effects of muscular superheroes on body image. When a PSR did not exist, men exposed to a muscular superhero had lower body esteem than those exposed to a non-muscular superhero (i.e., a contrast effect). However, when a PSR existed, men exposed to a muscular superhero not only suffered no harmful effects to body esteem, but also displayed greater strength on the dynamometer than those exposed to a non-muscular superhero (i.e., an assimilation effect). These results emerged regardless of the specific superhero (Batman vs. Spider-Man). Further, the alternative explanation that our results could be attributed to changes in mood or self-esteem or an individual difference associated with having PSRs was not supported.

Discussion

Young boys and grown men alike have long experienced a fascination with superheroes, who more and more represent unattainable muscular ideals (Baghurst et al., 2006). The current research suggests that although muscular superheroes can have negative effects on body image, PSR status moderates those effects and may even lead to some favorable outcomes. Thus, one possible explanation for the overwhelming popularity of superheroes in our society is that, for some men, they may fulfill an important psychological function, making them feel better about their bodies.

The current research is the first to directly examine the effects of superheroes on men's body image. Moreover, it is the first to establish a link between PSRs and body image among men. Although the relationship between PSRs and women's body image has received considerable attention (e.g., Greenwood, 2009; Harrison, 1997), this association among men has been largely ignored. Yet, it is important to examine this because men often encounter, and may even seek out, favored muscular media figures.

Additionally, this research adds to the small handful of studies that have been conducted examining the effects of superheroes on the self. For example, previous research shows that superheroes contribute to children's moral development (McCrary, 1999) and prosocial attitudes (Martin, 2007). Indeed, these outcomes may be a product of the assimilative processes, as demonstrated in the current work, that occur with PSR superheroes. It would be interesting to investigate other potential consequences, such as increased helping behavior.

This work also expands what is known about the nature of PSRs and provides additional evidence that PSRs function like real close relationships. Moreover, the present research provides further empirical support for the PSR-moderation hypothesis (Young et al., 2012) and is

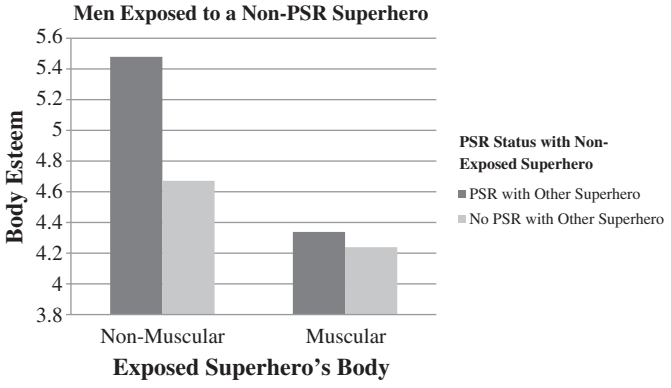


Fig. 3. Among men exposed to a non-PSR superhero: body esteem as a function of PSR status with the non-exposed superhero and the exposed superhero's muscularity.

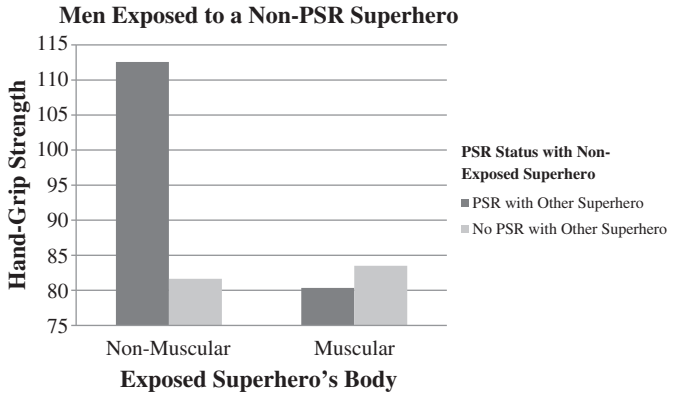


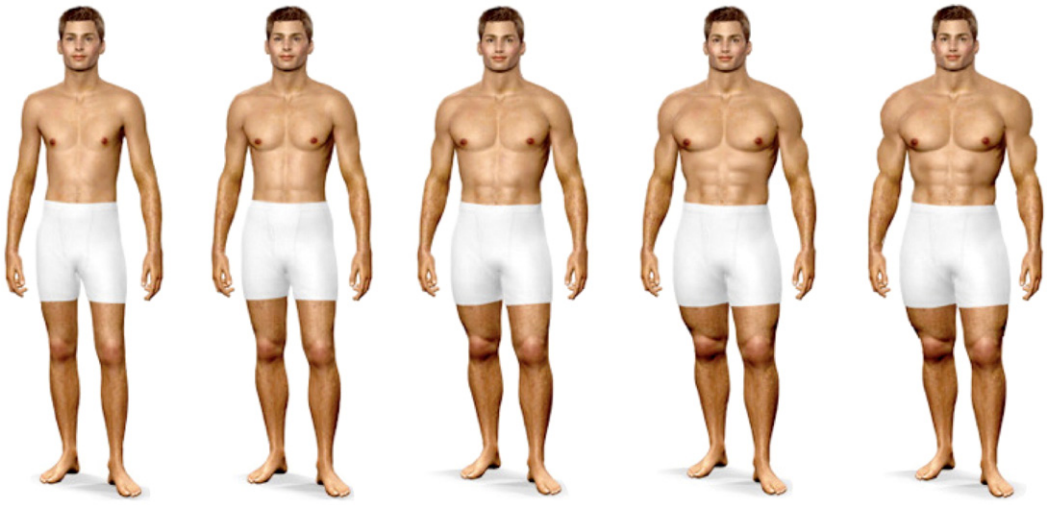
Fig. 4. Among men exposed to a non-PSR superhero: hand-grip strength (in pounds) as a function of PSR status with the non-exposed superhero and the exposed superhero's muscularity.

the first to directly validate the full model by showing evidence for both assimilative and contrastive processes as a function of PSR status.

Conclusion

It would be easy to assume that the enjoyable acts of watching movies, reading comic books, and playing with videogames and action figures of muscular superheroes inevitably (and ironically) lead men and boys to the unenjoyable effect of poor body image. However, the current research suggests that this is not always the case and that the popularity of superheroes may come in part from men who identify with them, and thus experience psychological benefits from exposure. Indeed, the awesome power of Batman may come not only from his ability to defeat the likes of Mr. Freeze and the Joker, but also from his ability to make his devoted viewers feel strong and physically fit.

Appendix A: Male Muscularity Scale.



Appendix B: Muscular and Non-Muscular Superhero Images.

References

Baghurst, T., Hollander, D. B., Nardella, B., & Haff, G. (2006). Change in sociocultural ideal male physique: An examination of past and present action figures. *Body Image*, *3*, 87–91, http://dx.doi.org/10.1016/j.bodyim.2005.11.001.

Barlett, C., Harris, R., Smith, S., & Bonds-Raacke, J. (2005). Action figures and men. *Sex Roles*, *53*, 877–885, http://dx.doi.org/10.1007/s11199-005-8304-4.

Barlett, C. P., Vowels, C. L., & Saucier, D. A. (2008). Meta-analyses of the effects of media images on men's body-image concerns. *Journal of Social and Clinical Psychology*, *27*, 279–310, http://dx.doi.org/10.1521/jscp. 2008.27.3.279.

Blond, A. (2008). Impacts of exposure to images of ideal bodies on male body dissatisfaction: A review. *Body Image*, *5*, 244–250, http://dx.doi.org/10.1016/j.bodyim.2008.02.003.

Boon, S. D., & Lomore, C. D. (2001). Admirer–celebrity relationships among young adults: Explaining perceptions of celebrity influence on identity. *Human Communication Research*, *27*, 432–465, http://dx.doi.org/10.1093/hcr/27.3.432.

Box office mojo: Total lifetime grosses worldwide (for selected superhero films). (n.d.). Retrieved June, 8, 2012, from Box Office Mojo, http://www.boxofficemojo.com/.

Brown, J. D., Novick, N. J., Lord, K. A., & Richards, J. M. (1992). When Gulliver travels: Social context, psychological closeness, and self-appraisals. *Journal of Personality and Social Psychology*, *62*, 717–727, http://dx.doi.org/10.1037/0022-3514.62.5.717.

Cafri, G., Olivardia, R., & Thompson, J. (2008). Symptom characteristics and psychiatric comorbidity among males with muscle dysmorphia. *Comprehensive Psychiatry*, *49*, 374–379, http://dx.doi.org/10.1016/j.comppsych.2008.01.003.

Derrick, J. L., Gabriel, S., & Hugenberg, K. (2009). Social surrogacy: How favored television programs provide the experience of belonging. *Journal of Experimental Social Psychology*, *45*, 352–362, http://dx.doi.org/10.1016/j.jesp. 2008.12.003.

Derrick, J. L., Gabriel, S., & Tippin, B. (2008). Parasocial relationships and self-discrepancies: Faux relationships have benefits for low self-esteem individuals. *Personal Relationships*, *15*, 261–280, http://dx.doi.org/10.1111/j.1475-6811.2008.00197.x.

Dijksterhuis, A., Spears, R., Postmes, T., Stapel, D., Koomen, W., Knippenberg, A. V., et al. (1998). Seeing one thing and doing another: Contrast effects in automatic behavior. *Journal of Personality and Social Psychology*, *75*, 862–871, http://dx.doi.org/10.1037/0022-3514.75.4.862.

Franzoi, S. L., & Shields, S. A. (1984). The body esteem scale: Multidimensional structure and sex differences in a college population. *Journal of Personality Assessment*, *48*, 173–178, http://dx.doi.org/10.1207/s15327752jpa4802_12.

Gardner, W. L., & Knowles, M. L. (2008). Love makes you real: Favorite television characters are perceived as "real" in a social facilitation paradigm. *Social Cognition*, *26*, 156–168, http://dx.doi.org/10.1521/soco.2008.26.2.156.

Giles, D. C., & Maltby, J. (2004). The role of media figures in adolescent development: Relations between autonomy, attachment, and interest in celebrities. *Personality and Individual Differences*, *36*, 813–822, http://dx.doi.org/10.1016/S0191-8869(03)00154-5.

Greenwood, D. N. (2009). Idealized TV friends and young women's body concerns. *Body Image*, *6*, 97–104.

Harrison, K. (1997). Does interpersonal attraction to thin media personalities promote eating disorders? *Journal of Broadcasting and Electronic Media*, *41*, 478–500.

Heatherton, T. F., & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality and Social Psychology*, *60*, 895–910, http://dx.doi.org/10.1037/0022-3514.60.6.895.

Horton, D., & Wohl, R. R. (1956). Mass communication and para-social interaction: Observations of intimacy at a distance. *Psychiatry*, *19*, 215–229.

Martin, J. F. (2007). Children's attitudes toward superheroes as a potential indicator of their moral understanding. *Journal of Moral Education*, *36*, 239–250, http://dx.doi.org/10.1080/03057240701325381.

McCrary, J. H. (1999). Children's heroes and heroines: Developing values manifested through artwork. *Paper presented at the Annual meeting of the Mid-South Educational Research Association, Point Clear, AL, November 17–19*.

Mussweiler, T. (2003). Comparison processes in social judgment: Mechanisms and consequences. *Psychological Review*, *110*, 472–489, http://dx.doi.org/10.1037/0033-295X.110.3.472.

Muth, J. L., & Cash, T. F. (1997). Body-image attitudes: What difference does gender make? *Journal of Applied Social Psychology*, *27*, 1438–1452, http://dx.doi.org/10.1111/j.1559-1816.1997.tb01607.x.

Olivardia, R., Pope, H. R., Borowiecki, J., & Cohane, G. H. (2004). Biceps and body image: The relationship between muscularity and self-esteem, depression, and eating disorder symptoms. *Psychology of Men and Masculinity*, *5*, 112–120, http://dx.doi.org/10.1037/1524-9220.5.2.112.

Parsons, A., & Howe, N. (2006). Superhero toys and boys' physically active and imaginative play. *Journal of Research in Childhood Education*, *20*, 287–300.

Pope, H. R., Olivardia, R., Gruber, A., & Borowiecki, J. (1999). Evolving ideals of male body image as seen through action toys. *International Journal of Eating Disorders*, *26*, 65–72, http://dx.doi.org/10.1002/(SICI)1098-108X(199907)26:1<65::AID-EAT8>3.0.CO;2-D.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scale. *Journal of Personality and Social Psychology*, *54*, 1063–1070, http://dx.doi.org/10.1037/0022-3514.54.6.1063.

Young, A. F., Gabriel, S., & Sechrist, G. B. (2012). The skinny on celebrities: Parasocial relationships moderate the effects of thin media figures on women's body image. *Social Psychological and Personality Science*, http://dx.doi.org/10.1177/1948550611434785 (Advance online publication).