

University of Nevada, Reno

**Gender Differences in Superhero Characters' Roles, Appearances, and Violence as
Portrayed in Superhero Movies**

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Criminal Justice

By

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Abstract

Because many members of society have seen movies involving one or more superheroes, individuals begin, possibly unknowingly, to create stereotypes of what people should look or act like. These stereotypes help establish what gender roles, appearances, and images of violence are deemed acceptable in society. Thus, it is important to understand the content in such movies. In this study, data from a content analysis of superhero movies was analyzed to examine the differences of gender images portrayed within the movies. Males were more likely to appear as the main character, be more muscular and powerful, have more special abilities, and use more weapons. Females were more likely to be portrayed as attractive, sexy, thin, and wear more revealing clothing. The messages portrayed through superhero movies are discussed.

Keywords: media, gender, gender differences, superhero, gender roles, appearance, violence

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Gender Differences in Superhero Characters' Roles, Appearances, and Attire as Portrayed in Superhero Movies

Movie heroes promote a sense of usefulness in movie viewers, thereby allowing viewers to believe that they can control the events in their own lives (Calvert, Kondla, Ertel, & Meisel, 2001). Role models such as athletes, successful business people, or superheroes are common in today's society. These role models possess qualities desired by most people and can make them want to be better people (Bonneville, Kozar, Hussey, & Patrick, 2006). The qualities role models exhibit can include personality attributes, goals, behavior (Bonneville et al., 2006,) and body images (Bessenoff, 2006).

The media's gender role portrayals offer behavioral norms for both males and females (Paek, Nelson, & Vilela, 2011). Thus, the media can affect behaviors and attitudes. For instance, individuals who watch high levels of television typically have more stereotypical views of gender than those people who watch less television (Signorielli, 1989) and both adults and children mimic and imitate actions of characters (Potter, 2002). Media viewing increases physical behavior and verbal aggressiveness, bullying, desensitization to violence, and depression (American Academy of Pediatrics, 2009; Anderson et al., 2003) and these effects can be long-lasting if they are continuously portrayed and reinforced over time (Potter, 2002). Thus, studying content of movies is a necessary step to understanding the effects media may have on behavior and attitudes.

The purpose of this content analysis is to analyze superhero movies and identify emerging themes in gender roles, appearance, and violence. Movies were selected from a list of comic book and superhero movies on the Blockbuster website. Researchers viewed full-length movies in order to examine the differences between male and female

superheroes. It was expected that there would be gender differences in roles, appearance, and level/type of violence, as portrayed in the content of these movies.

The Importance of Studying Superhero Movies

Children idolize superheroes and view them as role models (Bonneville, 2006). These role models contribute to expectations and perceptions of gender roles and acceptability within society (Jaffe & Berger, 1994). Therefore, it is important to examine the messages presented in movies. Messages about gender can be communicated in both the quantity and qualities of male and female characters. For instance, male characters are much more common than females because of the choices made by those in the movie industry. Media produces programs (e.g., movies and cartoons) because they appeal to society (Thompson and Zerbinos, 1997) and the type of heroes promoted reveals society's values and desires (Anderson & Cavallero, 2002).

Executives might choose to feature male characters in cartoons because boy viewers outnumber girls (Thompson and Zerbinos, 1997) and because boys are less likely to watch programs that have females as lead characters than those that have male leads (Carter, 1991; Thompson and Zerbinos, 1997). In addition, girls are more willing to watch programs with male lead characters than boys are willing to watching shows with female leads (Carter, 1991). Not only are male characters more common than females, they are portrayed differently as well. Male heroes are highly aggressive (Milkie, 1994) while female hero characters are compassionate, nurturing, and understanding (Calvert et al., 2001).

Children imitate the actions (Aubrey & Harrison, 2004; Bonneville et al., 2006; Dietz, 1998; LaVoie & Adams, 1978) and try to achieve the characteristics (Anderson &

Cavallaro, 2002; Calvert et al., 2001) of media characters. For example, children often choose media characters as a role model because of traits (e.g., appearance) or skills (e.g., weapons, and violence) the characters possess (Anderson & Cavallaro, 2002; Bonneville et al., 2006). Even adults may compare characters to themselves and then use extreme measures to be similar (Agliata & Tantleff-Dunn; 2004; Dittmar, 2009; Olivardia, Pope Jr., Borowiecki III, & Cohane, 2004). As discussed below, media messages can have a profound effect on behavior, perceptions, and attitudes. Thus, it is important to study these messages.

Previous studies have evaluated gender roles in video games (Dietz, 1998; Ivory, 2006; Miller & Summers, 2007), cartoons (Baker & Raney, 2007; Calvert et al., 2001), and TV advertising (Paek et al., 2011), but have not specifically focused on superhero characters. This study expands on previous studies by analyzing superhero genre movies.

This study investigated superheroes, rather than villains, primarily because superheroes are more likely to be imitated than villains. Thus, studying superheroes is important because viewers are more likely to imitate someone that is physically attractive, friendly, personable, and prestigious rather than someone that is portrayed as cold, distant, unfriendly, or physically unattractive (LaVoie & Adams, 1978). Further, characters who display power and nurturance are likely to be admired and imitated because they encourage a sense of self-efficacy, thereby allowing viewers to believe they can control their lives (Calvert et al., 2001). Thus, superheroes are more likely to be imitated than villains because of the superhero's caring ways and powerful status, as opposed to the less attractive qualities and physical characteristics of the villain

(assuming that in most movies, the villains are ultimately defeated and thus less powerful).

The current content analysis will reveal how superhero movies portray men and women in terms of their roles, appearance, and type/quantity of violence they commit. This is the first step in understanding media messages that might be influencing some viewers.

How Media Affects Viewers

The media is a major part of many children's lives. Children under two years of age watch television or movies for an average of 2 hours each day (American Academy of Pediatrics, 2009), while children between eight and eighteen spend over 6 hours each day using entertainment media (e.g., movies, television, video games, and computers). This figure can be increased by one hour if children have a TV in their bedroom (American Academy of Pediatrics, 2009).

Children's understanding of television may be influenced by their level of comprehension about the characters. Young children may not be able to distinguish between real persons and fictional characters. Rather, children may feel in some way that they might be able to socially interact with the character (Babrow et al., 1988). The characters may become role models and influence a person's perception of gender and behavior roles (Miller & Summers, 2007).

Media provide consumers with characters they can use to make social comparisons (Festinger, 1954). These observations create a beliefs and expectations of how people should appear and act. The media initiate a stereotype of an "ideal" male or female through depiction of characters' roles (Milkie, 1994), physical appearances

(Agliata & Tantleff-Dunn, 2004; Bessonoff, 2006), and personality attributes (Anderson & Cavallaro, 2002). As they compare themselves to these characters, viewers may have lowered self-esteem and self-perceptions if they do not meet these standards (e.g., muscularity, physical appearance, and attitude; Agliata & Tantleff-Dunn, 2004; Bartlett, Harris, Smith, & Bonds-Raacke, 2005).

Thus, it is important to understand how the media influences three important areas: roles, appearance, and behavior (especially violence). These are the three foci of the current study.

Media Influence in Gender Roles

Gender role socialization usually starts as soon as a parent knows the gender of the baby and continues throughout the life of the child (Dietz, 1998): Girls are given pink colored items, frilly dresses, dolls, and soft cuddly stuffed animals. Boys are given blue colored items, clothes that can handle aggressive behavior, and tough toys such as cars and trucks. Through socialization, children learn roles that encourage a development of certain personality traits, typically masculine or feminine (Dietz, 1998). When playing role games, girls take on the part of a mother or nurse while boys take the parts of father or doctor (Dietz, 1998). These are gender stereotypes and societal expectations that are reinforced from the time of birth throughout the individual's life. Society passes these norms from generation to generation. These personality traits often impact the roles that individuals assume in society, including employment.

Despite the progress made by women in the workforce, society has preconceptions of which occupations are related to gender. Men are more often than women chosen for management positions within companies (Powell, 2011) and men

typically earn a higher salary than women who are in similar positions (Powell, 2011; US Dept. of Labor, 2010). Traditionally, women typically have lower status occupations and are depicted as being unable to maintain both a family and a career (Milkie, 1994).

However, in the past few decades, women have been achieving success through jobs that were once thought of as only for men (Powell, 2011). The jobs usually are executive positions that require leadership and power (US Dept. of Labor, 2010).

In sum, society has defined roles and behaviors that are acceptable for each gender. The media helps perpetuate these roles and behaviors in several ways. First, the media communicates the relative importance of men and women by the quantity of men and women that appear in games. Second, the media communicates proper gender roles by generating stereotypes and behavioral standards for males and females (Paek, Nelson, & Vilela, 2010).

In general, media may communicate that women are less important—and less likely to be a hero—than men (e.g., Miller & Summers, 2007). Male characters often outnumber female characters (Anderson & Cavallaro, 2002; Scharrer, 2004) and are shown in fewer roles than men (Tuchman, 1978), and children take note (Thompson & Zerbinos, 1997). Specifically, children watching cartoons acknowledged that there were significantly more male than female lead characters and the males tended to have larger talking roles. The underrepresentation of female characters might lead viewers to believe that women are less important or interesting (Miller & Summers, 2007).

In addition to the quantity of females, the qualities of female characters are distinctly different than the qualities of male characters. For example, females are often shown as sex objects. Rather than being shown as a powerful hero, females often wear

little clothing and are extremely feminine (Dietz, 1998; Scharrer, 2004). Rarely can a female heroine be seen as a girl or woman with outstanding courage, nobility, or of heroic achievement. More commonly, a typical heroine is associated as a female having a relationship with a male hero, and her heroic actions are dismissed as out of the ordinary. Further, females' victories are achieved through wit, nurturing, compassion, and persuasion rather than relying on weapons, physical strength and aggression of their male counterparts (Calvert et al., 2001). This reinforces the gender stereotypes that women are often less powerful or important than men (Dietz, 1998; Ivory, 2006; Miller & Summers, 2007; Scharrer, 2004).

These media portrayals have important implications for viewers' behaviors. As per social learning theory, some behavior results from observing and imitating media portrayals of gender stereotypes (Aubrey & Harrison, 2004). Individuals will associate with characters if they feel the characters possess certain skills or attributes (Anderson & Cavallaro, 2002) and children are more prone to deem the characters as valid role models (Anderson & Cavallaro, 2002; Aubrey & Harrison, 2004; Baker & Raney, 2007). According to Calvert et al. (2001), children imitate and admire characters that portray power and strength. For children who idolize these characters, beliefs are formed about ideal behavior (Aubrey & Harrison, 2004). For instance, the media's gender bias might lead children to believe that men are strong and women are weak. If women feel less significant than men, they might not seek out high status careers typically reserved for men. They may make choices based on gender stereotypes portrayed in the media. For example, girls may choose to become mothers and housewives while boys may decide to continue schooling and obtain careers (Jaffe & Berger, 1994). In sum, media messages

might lead children to view women as less significant than men (Dietz, 1998). By means of imitation, children may consider the lack of female appearances in the media as an indication that they are not as significant as males, or that their roles in life are merely to be a sexy sidekick to a male (Miller & Summers, 2007). Negative media portrayals of women may affect children in their development of gender-related “identities” and expectations for their role within society (Dietz, 1998). Similarly, as discussed next, media may influence how people believe they “should” look; this has important implications for body image and self esteem.

Media Influence in Appearance

Negative body image is a serious problem that is growing in today’s society (Barlett et al., 2005). Body dissatisfaction is the experience of negative thoughts and esteem about one’s body (Dittmar, 2009) and can lead to a variety of physical and mental health concerns which can include eating disorders (Bohne, Keuthen, Wilhelm, Deckersback, & Jenike, 2002; Polivy & Herman, 2002), depression (Agliata & Tantleff-Dunn, 2004; Olivardia, et al., 2004; Polivy & Herman, 2002) and low self-esteem (Olivardia et al., 2004; Polivy & Herman, 2002). Other potential risk factors are increased usage of cosmetic surgery (Cafri et al., 2005) or steroid usage (Blovin & Goldfield, 1995; Cafri et al., 2005; Olivardia et al., 2004).

In general, society has standards for attractiveness and weight. People that are considered attractive are thought to have happier and more successful lives (LaVoie & Adams, 1978; Mishkind et al., 1986). Similarly, many people in society believe obese individuals do not meet the norms for appearance (DeJong, 1980). Obese people are

believed to have negative personality traits are regarded as leading less happy lives than lean and attractive people (Hiller, 1981).

In addition to the generalities for attractiveness and weight, men and women have specific norms established by society. Men often have concerns with obtaining more muscle mass (Leit, Gray, & Pope Jr., 1999; Olivardia et al., 2004). A way to achieve this goal is the usage of anabolic steroids, which allow an individual to increase muscle mass quickly through gym activities and sports (Olivardia et al., 2004). Men often seek a muscular and leaner body. Many men use steroids because of their perception of what women would prefer; however, this is actually a misconception (Olivardia et al., 2004, see also Collins, 1991; Pope Jr., Phillips, Olivardia, 2000; Thompson & Tantleff, 1992). In response to their mistaken beliefs, men force themselves into trying to achieve an unhealthy and sometimes unrealistically lean and muscular physique (Pope Jr. et al., 2000). Further, men may feel threatened by a loss of power and feel that the way to distinguish their masculinity is through their body (Leit et al., 1999). Such studies suggest that the cultural norm for an ideal male body is muscular, and many men take great strides to accomplish this norm.

There are also norms established for women. The idea of everlasting youth has led many women to seek medical treatments, such as botox injections, liposuction, and other plastic surgery treatments, to keep the appearance of youth and attractiveness in an attempt to maintain acceptance in society. In addition to health issues, emotional problems can come from not having the acceptable body image or attractiveness (Agliata & Tantleff-Dunn, 2004). Depression (Agliata & Tantleff-Dunn, 2004; Olivardia et al., 2004) and addiction to steroids (Olivardia et al., 2004) are among the many problems that

a person can have by trying to shape themselves into society's acceptable stereotypes. In the long run, these issues may damage self-esteem and be taken to the extreme instances of trying to change oneself to be equal or better than the societal norm.

In sum, society sets standards for male and female body appearance. These images are shaped by the media. For instance, the main female characters in prime time television tend to be younger than the male characters, which may suggest that being a young female is more valued (Anderson & Cavallaro, 2002). Media characters also portray "ideal" body images; however, these body images may be unobtainable (Norton, Olds, Olive, & Dank, 1996). The body proportions of Mattel's Ken and Barbie dolls and other action toys such as GI Joe, Power Rangers, and Luke Skywalker are not realistic (Norton et al., 1996; Pope Jr. Olivardia, Gruber, & Borowiecki, 1998). If these action toys and dolls were inflated to life size, very few men achieve the measurements associated with the figure's muscularity. Similarly, very few women achieve the measurements associated with the figure's thinness. One out of every 50 men had the probability for the body shape of the Ken doll, however the chances of a woman being able to obtain a body shape similar to Barbie was closer to 1 in 100,000 (Norton et al., 1996). As for the other action figures, the physiques were those of advanced bodybuilders and some even displayed muscularity levels that far exceed the limits of actual human attainment (Pope Jr. et al., 1998). Characters are portrayed in ways that create stereotypes of "ideal" bodies which are then used to make social comparisons.

Tiggemann, Polivy, and Hargreaves (2009) propose that there are two types of psychological processes that can occur when viewing media characters. First, the comparison process is started by people evaluating themselves with respect to the model

and comparing their body image to that of the model in order to measure one's own successes. Second, identifying with "being" the model is the fantasy process meaning that they desire to become just like the model through a process of imitation. This process may have "self-enhancing effects" (Tiggemann et al., 2009) but may also create negative effects, such as lower self-esteem, higher anxiety levels, lower body satisfaction, and lower body esteem (Bartlett et al., 2005).

In sum, the media communicates that women should be thin (Bessenoff, 2006) and young (Anderson & Cavallaro, 2002), while men should be masculine (Olivardia et al., 2004; Pope Jr. et al., 1998). If individuals identify with media characters or subscribe to the stereotypes of "ideal" bodies portrayed in the media, they might develop a low self-esteem or adopt unhealthy behaviors (Agliata & Tantleff-Dunn, 2004; Bohne et al., 2002; Cafri et al., 2005; Olivardia et al., 2004; Polivy & Herman, 2002). Similarly, media portrayals may show that violence can be suitable for appearing tough and solving problems; however, imitation of these behaviors may possibly lead to unacceptable conduct in children.

Media Influence in Violence

Society has seen what appears to be an influx of violence (Dietz, 1998) within communities (e.g., school shootings; Sherry, 2001; Hauser, 2007; Lamb, 2008; Rothacker, 2011). Children may portray aggressive behavior and are more likely to provoke others into this same type of behavior if they are exposed to violence on a regular basis (Huesmann, Moise-Titus, Podolski, & Eron, 2003). Children observing violence extensively from family, peers, and citizens within their community (Huesmann et al., 2003; Webb, Jenkins, Browne, Afifi, & Kraus, 2007) may possibly create violent

behaviors and hostility towards others (Huesmann et al., 2003) in the future. These observations may create expectations and beliefs that violence and victimization are a normal part of everyday life (Dietz, 1998). For example, continued violence (e.g., domestic violence) may give the impression that violence is an effective means of problem-solving (Dietz, 1998).

Boys and men typically identify with male role models associated with power (Bonneville, 2006). These role models have an effect on moral development. If children choose role models that utilize their power in negative ways, they may choose to imitate this into a form of violence through wrestling, kicking (Anderson & Cavallaro, 2002), or bullying other children (Bonneville, 2006). Continued educational efforts (Bonneville, 2006; Webb et al., 2007) are made to impact the beliefs, behaviors, and attitudes of individuals that portray aggression and violence as an acceptable and justifiable means to cause pain and suffering (Webb et al., 2007).

Thus, violence is a social issue. Like the social issues of gender inequality and body image discussed above, violence is a social issue that can be perpetuated by the media. Violence has always played a role in entertainment dating back to the ancient Egyptians between 2000 B.C. and 44 A.D., who liked to re-enact the murder of their god Osiris. The Romans also liked violent entertainment through their gladiator games (Media Awareness Network, 2010). In current society, violence in media is common. For example, researchers at UCLA analyzed 77 PG-13 films and found that a total of 2,251 acts of violence were portrayed with approximately 47% being of lethal magnitude (Webb et al., 2007). In addition to the frequency of violence, the realism of violence can sometimes be intense. Gun violence, car chases, blood and gore, and sexual exploitation

are much more graphic and sadistic than those in past years (Media Awareness Network, 2010).

The media communicates that violence is the norm, and even sometimes expected. Over time, video games have increased significantly in evil themes, weapon usage, dead bodies, and blood or gore (Miller, 2010). The average child will have viewed approximately 200,000 acts of violence on television prior to their 18th birthday (American Academy of Pediatrics, 2009). In Saturday morning cartoons, 59% of “bad guys” are punished for their violence while only 18% of the “good guys” acts are punished for their violence (Anderson & Cavalero, 2002), suggesting that violence is acceptable if it is done for “good”. The media messages may also communicate gender differences in violence; for example, male characters are represented as more dominant, powerful, and with more abilities and skills than women (Calvert et al., 2001).

Media images of violence are problematic for a variety of reasons. Children are highly influenced by media (Anderson & Cavallero, 2002) and learn through observing, imitating, and adopting behaviors (American Academy of Pediatrics, 2009). Boys, more often than girls, imitate television characters’ actions through play (Dietz, 1998) and children, in general, select fictional characters more often than real people as their role models because of the portrayed power, braveness, and strength (Josephson, 1995). Children have the tendency to imitate aggression and violence whether they are presented in a realistic manner or in a cartoon (Ledingham, Ledingham, & Richardson, 1993). Children may even use their perceptions of the aggression and violence seen in movies to resolve their own conflicts (Anderson & Cavallaro, 2002).

Recent studies link aggressive or uncooperative behavior to exposure to violence in video games (Anderson, Gentile, & Buckley, 2007; Bartholow & Anderson, 2002; Scharrer, 2004; Sherry, 2001). For instance, media-violence exposure at an early age is related to aggressive and violent behavior in young adulthood (Huesmann et al., 2003). A recent longitudinal study has linked aggression with violent video games; specifically finding that media-violence exposure at one point in time was positively related to aggressiveness at a later point in time (Slater, Henry, Swaim, & Anderson, 2003). Continued interaction with violence that appears in media may also promote hostility towards loved ones and acquaintances (Sherry, 2001). Imitating aggressive behavior may lead to other social issues, such as bullying (American Academy of Pediatrics, 2009).

In sum, gender roles, appearance and violence are social issues influenced by media portrayals, which may encourage viewers to desire or adopt attitudes, behaviors and characteristics that are dangerous or even unrealistic. Thus, it is important to discover the *content* of media to see what messages are being conveyed.

Content of Media Related to Roles, Appearance, and Violence

The purpose of the current content analysis is to understand the gender differences in roles, appearances, and violence portrayed in superhero genre movies. However, there is little significant research conducted on characters portrayed in superhero movies. Therefore, the current research is based on past research on similar media outlets that are most relevant to the current study (e.g., video games, cartoons, advertising, and toy dolls).

Gender Differences in Roles

Understanding the messages portrayed through media is important for both men and women. Both genders are heavily influenced by the media (e.g., Bessenoff, 2006). Female characters are less represented than male characters video games (Dietz, 1998; Ivory, 2006; Miller & Summers, 2007; Scharrer, 2004), television shows (including cartoons; Aubrey & Harrison, 2004; Babrow et al., 1988; Baker & Raney, 2007), and advertising (Paek et al., 2011).

When females are shown in media, especially video games, they are portrayed as non-essential or passive characters (Dietz, 1998; Haninger & Thompson, 2004; Ivory, 2006). Female characters were more likely than male characters to have a mentor that they consulted with before making decisions (Baker & Raney, 2007). And, the majority of female characters are involved in a team rather than working alone (Baker & Raney, 2007). These results indicate that women are less important, less interesting, less independent, and less knowledgeable than males (e.g., Miller & Summers, 2007; Signorielli, 1989; Thompson & Zerbinos, 1997). This body of research on other media suggests that there might be important gender differences in roles played by male and female superhero characters; the current research will help determine if this is so.

Gender Differences in Appearance

Previous content analyses of media characters have revealed that women are shown primarily as sex objects (Dietz, 1998; Ivory, 2006; Miller & Summers, 2007). Females are proportionally more likely than males to be portrayed in a sexualized fashion (Ivory, 2006) or as engaging in sexually suggestive behavior (Haninger & Thompson,

2004). In doing so, women typically wear less clothing (Scharrer, 2004) and dress more provocative than men (Dietz, 1998; Thompson & Haninger, 2001).

Females are typically portrayed as attractive, sexy, and feminine (Baker & Raney, 2007; Dietz, 1998; Ivory, 2006; Miller & Summers, 2007; Scharrer, 2004), while males are usually portrayed as rugged, tough, and masculine and muscular (Baker & Raney, 2007; Miller & Summers, 2007; Scharrer, 2004). Females are more often portrayed as helpless or as the victim than males (Aubrey & Harrison, 2004; Dietz, 1998; Miller & Summers, 2007; Thompson & Zerbinos, 1997). In addition, within cartoons, females are depicted as more emotional and superficial (Baker & Raney, 2007) or more likely to get overexcited in a crisis than males (Baker & Raney, 2007).

Such results indicate that men and women are portrayed very differently in terms of appearance and behaviors. Although none of these studies investigated superheroes specifically, the current study will determine whether superhero movies have similar portrayals.

Gender Differences in Violence

Male characters are frequently involved in violence (Scharrer, 2004) while female characters often resolve conflict through compassion and persuasion (Calvert et al., 2001). In addition, male characters, compared to female characters, use more weapons and have more special abilities as justified means to resolve conflict (Miller & Summers, 2007). Thompson and Zerbinos (1997) found that both male and female children perceived male cartoon characters as more violent than female characters. In contrast, Baker and Raney (2004) found no significant differences in aggression between male and female cartoon characters. These past studies indicate that, in some contexts, the media

portrays violence differently in men and women; the current study might also find similar differences.

Overview of Study

Prior research has examined gender differences in roles, appearances, and violent behavior, portrayed in video games (e.g., Dietz, 1998; Ivory, 2006; Miller & Summers, 2007; Scharrer, 2004), advertising (Paek et al., 2011); and television shows (Anderson & Cavallero, 2002; Calvert et al., 2001). However there are no studies of superhero characters in movies; the current study will help fill this gap.

The purpose of this study is to replicate and expand the findings of previous studies on video games and other media conducted by previous researchers such as Dietz (1998), Ivory (2006), Miller and Summers (2007), and Scharrer (2004). Full-length superhero movies will be studied to determine if there are gender differences in character roles, appearances and personality traits, and violence.

Research Questions and Hypothesis

A general research question and several hypotheses were developed based on past content analyses and the above literature review. The general research question investigates how characters are portrayed in superhero movies. More specifically, what roles do the superhero characters play (e.g., hero or supplemental character)? Are they portrayed as muscular, attractive, powerful, or sexy? Are they violent, have special powers, and use weapons? Analysis will present an overall idea of how the characters look and behave.

The goal of Hypothesis 1 was to determine if there are gender differences in the roles of the superheroes. Two related hypotheses are offered. Hypothesis 1a predicts that

males will have different general roles (e.g., main character) than females. Specifically, it is predicted males will be portrayed as heroes more often than females, while females will be the supporting character (e.g., sidekick or possibly the one in distress) more often than males. Hypothesis 1b predicts that males will have specific roles (e.g., soldier, detective) more often than females.

Hypothesis 2 predicts that there will be gender differences in the appearance and attire of the characters. Two specific hypotheses are made. Hypothesis 2a predicts that males will appear more muscular and powerful than females, while females will be more attractive, sexy, and thin than men. Hypothesis 2b predicts that female characters will wear more revealing clothing than male characters.

Hypothesis 3 predicts gender differences in violence, special abilities, and usage of weapons. Two separate hypotheses are presented. Hypothesis 3a predicts that males will have more special powers/abilities (e.g., super strength) than females. Hypothesis 3b predicts that males will use weapons (e.g., guns, swords) more often than females.

Methods

Sampling

Movies evaluated for this analysis were selected from a list provided on the website for Blockbuster that had been categorized as “comic book /superhero” movie genre. These movies were made by various media companies within the United States or in other countries between the years of 1966 and 2009. A list of approximately 120 movies was obtained for consideration. Movies evaluated were based on the criterion for inclusion in which the movies had to be full length motion pictures or cartoons, approximately 90-120 minutes. In addition, the movies needed to be available for

viewing and in the English language. Movies that did not meet these standards were excluded (e.g., television series or films in a foreign language). Ultimately, 80 movies were selected for analysis (See Appendix 1). Characters within each movie were selected based on role (e.g., main and supplemental superheroes). During evaluation of each movie, researchers were required to select the *two* male superhero characters (if two were available) and *all* female superhero characters. As a result, some characters were excluded based on the number of superhero characters in the movie. All female characters were included in the evaluation in order to get an approximate equal number of males and females.

Coding

A codebook was developed based on past content analysis studies and a literature review. To finalize the codebook, researchers watched one movie in order to operationalize the definitions of the terms (e.g., societal standards of thin, sexy, violence) and for coders to practice coding. Questions were created primarily based on intuition and the principles of face validity. Finally, changes to the codebook were made based on the discussion and agreement of the researchers.

Researchers first determined which characters would be evaluated. Researchers rated characters based on the pre-determined variables in the codebook which included gender, appearance, and the amount of special abilities and weapon usage. The variables pertaining to appearance and attire were rated using a Likert scale of 0 (not at all) – 4 (extreme). The variables pertaining to special abilities and weapon usage were selected based on a variety of choices that had been pre-determined based on past content analyses, *all* applicable choices were selected. In addition, several ‘yes’ or ‘no’ questions

were asked in order to evaluate gender roles (e.g., Does the hero work in a group of heroes? If the character is a woman, is her role a “supplemental character”?). See Appendix 2 for full codebook.

Inter-rater reliability

Inter-rater reliability was required in order to ensure that the researchers had a common understanding of the questions in the codebook. Two researchers watched the same movie and completed their codebooks individually. The researchers then compared responses and through discussion settled disagreements. This process allowed for researchers to determine a universal understanding of each variable in the codebook.

Sixteen movies were included in the inter-rater reliability analysis. As shown in Table 1, Holsti’s coefficient revealed an overall inter-rater reliability rate of .90, which is quite high, indicating that coders interpreted the codebook variables similarly. It is important to note that there are a few Holsti coefficients pertaining to appearance traits which appear low (e.g., sexy or seductive, thin, violent). Although these coefficients were low in inter-rater reliability, these variables were analyzed and found to have significant findings in appearance traits between males and females. The coefficients ranged from 0.66 for the sexy or seductive variable to 0.97 on other variables.

Once inter-rater reliability was determined, the remaining 64 movies were watched and coding surveys were entered into an online database (SurveyMonkey); the results were then downloaded, reviewed, and analyzed.

[Insert Table 1 about HERE]

Measurements

MiniTab was used to conduct two separate tests types: Differences of proportions and Difference of means (t-test). The following procedures were deemed appropriate based on the data that was collected and the answers that researchers sought.

The first tests administered were difference of proportions tests to determine the variation between male and female superheroes in regards to roles, weapon usage, and special abilities. Completion of the tests revealed the percentage difference between males and females in various categories. The codebook offered several specific character role types (e.g., soldier, detective) for researchers to evaluate and based on the data collected, the results from the difference of proportions test determined if there were any significant disparities as per Hypothesis 1b.

The same test was conducted to determine variations as predicted in Hypothesis 3a and 3b in relation to differences in special powers/abilities and usage of weapons (respectively) between the male and female superheroes. In addition to the difference of proportions test for each individual variable pertaining to special abilities and weapons, a separate analysis of each character was completed to determine if the characters portrayed or utilized more than one special ability or weapon in order to determine if there were any significant inequalities between genders.

Secondly, difference of means tests (t-test) were conducted to determine whether there were significant differences between male versus female superheroes based on the 0-4 Likert scale comparing appearance characteristics, as predicted in Hypothesis 2a. In addition, for Hypothesis 2b, the same test determined the mean differences in males

versus females in non-costume and costume attire to determine if either gender of superheroes were more likely to wear more revealing clothing.

Results

The first set of analysis was designed to evaluate the general research question: How are characters portrayed overall in superhero movies? The second set of analysis concentrated on Hypothesis 1, which involved gender differences in the roles and abilities of the characters. A third set of analysis addresses Hypothesis 2, which made predictions regarding gender differences in appearance and attire of the characters. Finally, a fourth set of analysis deals with Hypothesis 3, which predicted gender differences in violence levels, availability of special abilities, and usage of weapons.

Research Question: General Portrayal of Characters

The research question asks how characters are portrayed overall in superhero movies. For example, what abilities do they have? What roles do they play (e.g., hero or supplemental character)? Are they muscular, attractive, powerful, or sexy? In answer to these questions, the first set of analysis provides a general picture of how characters are portrayed in superhero movies. Of the 80 movies included in the analysis, a total of 152 hero characters were evaluated. Based on the criteria discussed above, 5 characters were removed because gender could not be determined. Of the remaining characters, 47 female heroes and 100 male heroes appeared, indicating 1 female for every 2.13 male characters. Absolute values of scores, in addition to gender differences, provide information as to the overall portrayal of males and females in the movies. Results indicated that males were rated an average of 2.83 (out of 4) on the powerful scale, with 84% of the characters scoring above the midpoint on the scale. Similarly, males scored

2.42 (out of 4) on muscular, with 77% scoring above the scale's midpoint. Females averaged 2.36 (out of 4) as being sexy or seductive, with 74.5% of the characters scoring above the midpoint on the scale. Similarly, females scored 2.66 (out of 4) as being thin, with 78.8% scoring above the scale's midpoint. They also averaged 3.15 (out of 5) in attractiveness, with 100% of the character's scoring above the scale's midpoint. These findings indicate that the majority of male characters are portrayed as powerful and muscular, while the majority of females were portrayed as sexy, thin, and attractive.

Most (79.6%) of the characters had at least one special ability, such as resistance to injury or super strength, and 64.6% had more than one special ability. Of the characters, 20 out of the 47 (42.6%) female characters and 75 out of the 100 (75%) male characters appeared to have more than one special ability, indicating 1 female for every 3.75 male characters. A similar pattern occurred during the evaluation of weapon usage. Most (81.6%) of the characters used at least one weapon, such as a gun or extreme fighting skills, and 47.6% used more than one weapon. Of the characters, 12 out of the 47 female characters (25.5%) and 58 out of the 100 male characters (58%) appeared to have more than one weapon, indicating 1 female for every 4.83 male characters. These findings indicate that although characters of both genders are likely to have special abilities and use weapons, male characters are more likely than female characters to have more than one special ability and use more than one weapon.

Hypothesis 1: Gender Differences in Roles and Abilities

The purpose of Hypothesis 1 was to look at gender differences in the roles and abilities of superhero characters. Hypothesis 1a and 1b were both partially supported.

Hypothesis 1a

This hypothesis expected that male characters would have different roles (e.g., main character) in the movies than females. In general, hypothesis 1a was partially supported. Male characters were more likely to be a hero not working in a group (71.9%) than females. The majority of female characters (66%) were viewed as working with a group of characters and 46.8% were considered to be a supplemental character.

Hypothesis 1b

This hypothesis predicted that males and females would have different specific roles (e.g., males would more often be soldier than females). Analysis of the data found that the only significant difference was in the role of detective or secret agent. As shown in Table 2, men were more likely to embody this role than females. All of the other roles revealed no significant differences in the roles of the characters. These results could be because of the low occurrence of these roles (for either gender) portrayed in the movies.

[Insert Table 2 about HERE]

Hypothesis 2: Differences in Appearance and Attire

The purpose of Hypothesis 2 was to determine whether there are gender differences in the appearance and attire of the characters. Both Hypothesis 2a and 2b were mostly supported.

Hypothesis 2a

This hypothesis expected that there would be differences in appearance of the characters. For example, males would be more muscular, powerful, and evil while females would be more attractive, thin, sexy, and innocent. There were significant gender differences in appearance based on the means of the five-point Likert scales (0 =

“not at all” to 4 = “extreme”). As shown in Table 3, the means for males were significantly higher than the means for females on the items measuring the appearance traits powerful, muscular, violent, and evil. In comparison, the means for females were significantly higher than the means for males on the variables measuring the appearance traits of attractive, thin, sexy or seductive, and innocent. Female characters were also significantly more likely to be portrayed as afraid and helpless compared to males. Other differences in appearance (e.g., carefree, happy, angry, and helpful) were not significantly different between males and females.

[Insert Table 3 about HERE]

Hypothesis 2b

This hypothesis predicted that female characters would wear more sexy and revealing clothing than men. The results mostly supported hypothesis 2b. The variables were measured on a five-point Likert scales (0 = “not at all” to 4 = “extreme”). As shown in Table 4, the means for the female characters were significantly higher than the means for male characters on variables measuring the revealing nature of non-costume clothing (e.g., clothes the character wore when not acting as the superhero) and costume clothing (e.g., the superhero costume). This result held for both the revealing nature non-costume clothing *and* costume clothing on both the upper body *and* the lower body. Similarly, females’ non-costume clothing was significantly tighter than for males’. The only category not significant was the overall tightness of the costume clothing; this might be because many of the heroes—both male and female—had costumes that included tights, which by definition are “tight”.

[Insert Table 4 about HERE]

Hypothesis 3: Differences in Violence: Special Abilities and Weapon Usage

The purpose of Hypothesis 3 was to determine whether there are gender differences in characters' special abilities and weapon usage. Both Hypothesis 3a and 3b were partially supported.

Hypothesis 3a

This hypothesis expected that there would be significant differences in the special abilities of male and female characters. As shown in Table 5, males have significantly more special abilities than females. Males had significant differences in super strength and resistance to injury than females. In addition, female characters were significantly able to manipulate elements (e.g., fire, water, ice, and wind) more than males. Other variables considered (e.g., magic, flying, super speed, invisibility) did not differ by gender, possibly due to the infrequencies of these abilities in the movies. Additionally, the analysis of each individual character revealed that male characters were more likely than females to have more than one special ability.

[Insert Table 5 about HERE]

Hypothesis 3b

This hypothesis predicted that male characters would have more weapon usage than female characters. As shown in Table 6, significantly more males used weapons than females. Males were significantly more likely to use fighting skills, fire or flame weapons, and guns than females. Other categories considered (e.g., poison, rope, knives or swords) did not differ by gender. In addition, the analysis of each individual character showed that male characters were more likely than females to use more than one weapon.

[Insert Table 6 about HERE]

Discussion

Superhero movies are one of the most stable genres and their popularity appears to be on the rise in the 21st century (Gray & Kaklamanidou, 2011). This increasingly popular form of media may play a key role in influencing youth and other members of society (Anderson & Cavallero, 2002; Paek et al., 2011; Thompson & Zerbinos, 1997; Wood, 1994) if viewers adopt the attitudes and behaviors portrayed by the media (American Academy of Pediatrics, 2009). Therefore, it is important to study the messages that superhero movies portray pertaining to gender roles, appearance, and violence.

The media has become one of the most influential and persuasive forces in shaping stereotypes (Agliata & Tantleff-Dunn, 2004; Dittmar, 2009). These stereotypes can be understood by young children as they watch various forms of media (e.g., movies, cartoons, television ads). Children who frequently watch programs that portray certain behaviors or physical attributes will be more likely to imitate and be affected by the stereotypes than those children who watch less television (Aubrey & Harrison, 2004). Analyzing superhero movies provided more detail and support to the results found in previous studies related to other media outlets, such as video games (Dietz, 1998; Miller & Summers, 2007) and advertising (Paek et al., 2011).

This content analysis revealed significant gender differences in the portrayal of superhero characters' roles, appearance, and violence. Supporting earlier findings of video game characters (Dietz, 1998; Miller & Summers, 2007), male characters outnumber female characters. During this content analysis, researchers only selected and analyzed *two* male heroes and *all* female heroes per movie, resulting in 2.13 male heroes

for every 1 female. Thus, the ratio of males to females, if *all* heroes in each movie were analyzed, would likely be higher. Males were portrayed more often as a hero not working in a group while female characters were more likely to work in a group with other heroes. Supporting previous content analysis of video games (Dietz, 1998; Ivory, 2006; Miller & Summers, 2007; Scharrer, 2004), television shows (including cartoons; Aubrey & Harrison, 2004; Babrow et al., 1988; Baker & Raney, 2007), and advertising (Paek et al., 2011), female characters are less represented than male characters. In addition, female characters were more likely to be considered a supplemental character than male characters.

The results also confirmed that there were significant gender differences pertaining to appearance and attire. There was supporting evidence that replicated previous research studies which found males were portrayed as more powerful and muscular than females (Baker & Raney, 2007; Dietz, 1998; Miller & Summers, 2007; Scharrer, 2004) and females were portrayed as sexy and more attractive (Baker & Raney, 2007; Dietz, 1998; Ivory, 2006; Miller & Summers, 2007; Scharrer, 2004) as compared to males. This content analysis also confirmed previous studies that found females are more often portrayed as helpless than males (Aubrey & Harrison, 2004; Dietz, 1998; Miller & Summers, 2007; Thompson & Zerbinos, 1997). In comparison with previous content analysis, this study found that female characters were significantly more likely to wear more revealing and tight clothing, in both non-costume and costume, than males (Miller & Summers, 2007; Scharrer, 2004).

Evaluating gender differences in violence have found both male and female characters typically had special abilities and used weapons. In addition, this study found

male characters were more likely than females to have more than one special ability and use more than one weapon. These results support earlier findings by Miller and Summers (2007) in which male characters often use more special abilities and weapons.

If media frequently and consistently under-represent female characters and portray them as supplemental characters, then viewers may believe that these depictions apply to women in general (Aubrey & Harrison, 2004; Signorielli, 1989). This might have implications for shaping attitudes of viewers. Differences in gender role portrayals within the media are influential in society because these portrayals can be responsible for creating stereotypes which possibly generate behavioral norms for males and females (Paek et al., 2011). For example, when media portrays females as helpless and sexual objects, males may develop negative attitudes toward females because of perceived stereotypes. Similarly, females may be influenced by these stereotypes to act in certain ways (Miller & Summers, 2007). For instance, they may feel the need to be rescued by males because females are perceived as helpless or inadequate of taking care of themselves. In addition, due to the lack of female characters portrayed in the media, females in society may interpret this depiction to mean that they cannot be successful in a work environment.

The findings of this content analysis may also have implications on movie viewers in terms of appearance and behavior. Results of this study correspond with previous research (Dietz, 1998; Ivory, 2006; Miller & Summers, 2007) in which the media's representations of men as powerful and muscular and women as attractive, sexy, and thin has effects on self-esteem and body image (Bessenoff, 2006; Miller & Summers, 2007) in both males and females. In response, females within society may feel compelled

to participate in more sexualized behavior by wearing more revealing and tight clothing in order to gain acceptance from males. Other behavior implications may be that females feel the necessity to be thin which may contribute to eating disorders. On the other hand, men may consider themselves inferior after comparing themselves to the unrealistically muscular and powerful male superhero characters illustrated by the media. This could result in negative self-esteem which may increase the likelihood of steroid usage or other drastic measures that may create a muscular physique (Miller & Summers, 2007).

According to Dittmar (2009), body image has emerged as a main feature of mental and physical well-being. Depression and social anxiety can result from dissatisfaction with one's physical appearance when comparisons are made to other people, whether fictional or real. Movie viewers may also feel low self-esteem when they compare their own abilities to those of superhero characters. Viewers who compare themselves to the superhero characters may see themselves as less talented and may feel it necessary to obtain an unrealistic body type.

Finally, the study has implications for parents who allow their children to watch various forms of media containing violence. Children, who watch cartoons, identify male characters as being more violent than female characters (Thompson & Zerbinos, 1997). This content analysis revealed that male heroes are typically associated to violence to resolve conflict (e.g., more use of abilities or weapons) differently than females (e.g., portrayed significantly more helpless or afraid). These media portrayals may lead to aggressive or uncooperative behavior (Anderson et al., 2007; Bartholow & Anderson, 2002; Huesmann et al., 2003; Sherry, 2001; Slater, 2003) or bullying (American Academy of Pediatrics, 2009). Viewers may perceive that because there is so much

violence (e.g., usage of weapons) shown in the media that violence in real life may be an acceptable solution to resolving conflict. Because movies have the potential to influence the behaviors and attitudes of children, it is important to recognize the messages media present. These findings may have implications on society's attitudes and behaviors in regards to gender roles, appearance, and violence.

Limitations

This study had a few limitations that are worth noting. First, some movies presented more than two main male superhero characters, however only two were coded. Therefore, in some cases, not all of the male superheroes were analyzed. As a result, leaving the discretion to the researcher may present some bias, in which, favorite superheroes may have been chosen while others (e.g., supplemental characters) were not considered or analyzed. There was no set guideline in determining which main male superheroes to evaluate, only that a maximum of two could be analyzed along with *all* female superheroes. To prevent possibility of bias, all characters from the movies would need to be evaluated.

Another limitation is that not all movies on the list were watched due to time restraints and the inability to obtain some of the movies. If all of the superhero movies from the time period of 1966 – 2009 were evaluated, there would be a larger sample size. This content analysis examined approximately 66% of the movies provided on the list from Blockbuster. Due to the lack of availability or because of a foreign language, researchers were unable to determine if there may be systematic differences in gender roles, appearance, and violence presented those movies that were excluded. Evaluating a higher majority of the movies provided in the list would provide a larger sample size

which would allow for more data to be collected and analyzed in order to determine if the results gathered were significant on a larger scale.

Future Research

Future research needs to continue determine gender differences in media through evaluation of the characters' roles, appearance, and violence. For example, superhero movies can be analyzed over time to determine whether media's portrayals of superhero characters are changing through each decade. A longitudinal study would reveal whether content in movies has changed in regards to characters roles, appearance, and violence.

Further evaluation of superhero movies can be completed to determine the differences between heroes and villains. This assessment may reveal the underlying messages that the media presents in regards to good versus evil and the attributes associated within. A content analysis similar to this one could analyze villains to determine if the significant gender differences in roles, appearance, and violence that were found with superheroes are also found within villains. In addition, male heroes could be compared to the male villains and female heroes to the female villains in order to determine if there are significant differences between the role of good and evil characters, their appearance, and violence levels.

While much research is still needed, this study provides evidence that male and female superhero characters are portrayed very differently in superhero movies. Future research should identify the impacts of these gender differences in roles, appearance, and violence on movie viewers. Also, more research needs to be conducted in order to determine the impact the media, specifically superhero movies, has regarding gender role expectations, sexual stereotypes (e.g., body image and attitudes), and behaviors.

Conclusion

The current study revealed significant gender differences in the portrayal of superhero characters in movies. In general, male superheroes outnumbered females and be a character that did not appear to work in a group with other superheroes. At the same time, females were more likely to work in groups and be supplemental characters. Overall, females also wore more revealing non-costume and costume clothing on both the upper and lower body, in addition to the overall attire. Comparisons indicate that male characters were more muscular and powerful while female characters were more attractive, sexy, and thin. In addition, female characters were portrayed as more afraid and helpless than males. Lastly, males used special abilities and weapons more often than females. In addition, males typically had more special abilities and weapons than females.

Media plays an important part in influencing gender roles (Signorielli, 1989; Wood, 1994), appearances (Agliaia & Tantleff-Dunn, 2004; Anderson & Cavallaro, 2002), and violence (American Academy of Pediatrics, 2009; Anderson et al., 2003). Gender inequality may be harmful to both genders because it limits socially accepted roles (Milkie, 1994; Paek et al., 2011). Children may learn gender roles from the media, which reinforce stereotypes within a society. People have a tendency to rely on information from the media to form judgment and justify their actions and opinions as to how they should act and what they should see in the mirror. Also, these stereotypes possibly impact how people examine and treat others (Paek et al., 2011; Thompson & Zerbinos, 1997). For example, Thompson & Zerbinos' (1997) study showed that children are perceptible to these stereotypes and both genders viewed females as

domestic (e.g., specific example was completing chores around the house). In addition, females were referred to for their appearance (e.g., dressing up, wearing jewelry), and were seen as polite and following what the males say.

Society looks to the media to guide and reinforce gender roles. It is in human nature to look up to role models and want to be like them (Bonneville, 2006). Society has adapted to the illusion that having bigger muscles and being thin are better than the alternative. These perceptions come at the expense of the media having the power to influence society norms of self-esteem and self-perception of body image along with the associated gender roles (Agliata & Tantleff-Dunn, 2004; Bartlett et al., 2005). The rule for having the “ideal” body (Milkie, 1994; Norton et al., 1996) comes at an early age when boys are introduced to action toys (Noton et al., 1996; Pope Jr. et al., 1998).

Individuals begin at an early age to see the male superhero as a strong-willed, muscular (Olivardia et al., 2004; Pope Jr. 1998) and powerful leader (Thompson & Zerbinos, 1997). This causes most children the need to be cautious of their weight and the desire to be strong as they grow older. Failure to comply with these descriptions may lead to the rejection within society. The underlying messages of gender roles, appearance, and violence need to be analyzed further to determine how these movies relate to self-esteem and self-perceptions.

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Appendix 1

Blockbuster Movie List

Release Date:	Movie:	Release Date:	Movie:
1966	Batman	2003	The League of Extraordinary Gentlemen
1975	Wonder Woman	2003	X-Men 2: United
1980	Flash Gordon	2004	Blade Trinity
1980	Popeye	2004	Catwoman
1989	Batman	2004	Hellboy
1989	The Punisher	2004	Spider-man 2
1990	Dick Tracy	2004	The Incredibles
1991	Teenage Mutant Ninja Turtles II: The Secret of the Ooze	2004	The Punisher
1992	Batman Returns	2005	Batman Begins
1992	The Heroic Trio	2005	Fantastic Four
1993	Meteor Man	2005	Sidekick
1993	The Ninja Turtles 3	2005	Sky High
1994	Blankman	2005	The Crow: Wicked Prayer
1994	Darkman	2006	My Super Ex-Girlfriend
1994	The Crow	2006	Power Rangers Mystic Force Dark Wish
1994	The Shadow	2006	Ultimate Avengers 2
1995	Batman Forever	2006	X-Men: The Last Stand
1995	Darkman II: The Return of Durant	2006	Zoom
1995	Judge Dreed	2007	Fantastic Four Rise of the Silver Surfer
1996	Barb Wire	2007	Ghost Rider
1996	Darkman III: Die Darkman Die	2007	Spider-Man 3
1996	The Crow: City of Angels	2007	The Fantastic Four
1996	The Phantom	2007	The Invincible Iron man
1997	Batman and Robin	2007	TMNT
1997	Spawn	2007	Underdog
1998	Batman & Mr. Freeze Subzero	2007	Zorro: Return to the Future
1998	Blade	2008	Hancock
1998	The Mask of Zorro	2008	Hell Boy II
1999	Blackmask	2008	Ironman
1999	Mystery Men	2008	Justice League: The New Frontier
2000	The Crow: Salvation	2008	Super Capers
2000	Unbreakable	2008	Superhero Movie
2000	X-men	2008	The Dark Knight
2001	Red Shadow	2008	The Incredible Hulk
2002	Batman Beyond: Return of the Joker	2008	The Spirit
2002	Blade II	2009	Green lantern: First Flight
2002	Spider-man	2009	Hulk Vs
2003	Daredevil	2009	Superman/Batman: Public Enemies
2003	The Hulk	2009	Watchmen
2003	The Incredible Hulk	2009	X-Men, Origins

Appendix 2

Codebook: Content analysis of superhero movies

Identify and describe heroes:

Name of hero: _____

Gender: ___ Male ___ Female ___ unknown/other

Does the hero work in a group of heroes? ___yes ___ no ___ sometimes/used to

If the character is a woman, is her role a “supplemental character” (e.g., not a main character)?
___yes ___ no ___not applicable

What type of character (Circle all that apply)

1=looks like real man/woman

2= human that can transform into something else

3 = soldier, warrior, ninja

4= detective, secret agent

5=non-human cartoon

6= monster/alien

7= robot

8= zombie or other “undead”

9= police officer or security official

other: _____

What does character look/act like (overall in the movie, e.g., if the character is powerful most of the time but helpless once in the movie, give it a high score on ‘powerful’ and low on ‘helpless’):

0= not at all; 1= only a little; 2= moderate amount; 3= quite a bit; 4= extreme

muscular 0 - 1 - 2 - 3 - 4

sexy or seductive (e.g. revealing clothes) 0 - 1 - 2 - 3 - 4

attractive (socially acceptable attractiveness) 0 - 1 - 2 - 3 - 4

thin (not overweight) 0 - 1 - 2 - 3 - 4

powerful (e.g., a fighter) 0 - 1 - 2 - 3 - 4

helpless (e.g., must be rescued) 0 - 1 - 2 - 3 - 4

helpful (providing tips for main character, rescuing other people) 0 - 1 - 2 - 3 - 4

Evil (like the devil) 0 - 1 - 2 - 3 - 4

Happy 0 - 1 - 2 - 3 - 4

Angry 0 - 1 - 2 - 3 - 4

Carefree 0 - 1 - 2 - 3 - 4

Innocent, sweet 0 - 1 - 2 - 3 - 4

Afraid 0 - 1 - 2 - 3 - 4

Violent 0 - 1 - 2 - 3 - 4

Does the character wear a costume? ___yes___no

If yes, Rate the character’s costume (overall; all the costumes they wear throughout the entire movie). Use the scale: **0= not at all; 1= only a little; 2= moderate amount; 3= quite a bit; 4= extreme**

How revealing is the costume *overall*? 0 - 1 - 2 - 3 - 4

How revealing is the upper body? 0 - 1 - 2 - 3 - 4

How revealing is the lower body? 0 - 1 - 2 - 3 - 4

How tight is the costume overall? 0 - 1 - 2 - 3 - 4

Rate the character's *non-costume* clothing (overall; all the clothes they wear throughout the entire movie). Use the scale: **0= not at all; 1= only a little; 2= moderate amount; 3= quite a bit; 4= extreme**

How revealing is the clothing *overall*? 0 - 1 - 2 - 3 - 4

How revealing is the upper body? 0 - 1 - 2 - 3 - 4

How revealing is the lower body? 0 - 1 - 2 - 3 - 4

How tight is the clothing overall? 0 - 1 - 2 - 3 - 4

Does character have special powers/abilities? (circle all that apply)

1=become invisible

2=super speed

3= martial arts

4= skateboarding/snowboarding/bike riding

5= special senses (seeing, hearing)

6= flying

7= magic

8=using weapons

9= swim

10= super strength

11= resistance to injury

12= manipulate elements (fire, water, ice, wind, etc)

other: _____

Does character use a weapon to injure others? (circle **all** that apply)

1=gun

2=knife or sword/spear

3= fire/flame thrower

4= grenades

5= fighting (e.g. karate)

6= ice or freezing device

7= tank or other vehicle weapon

8= bow and arrow

9=magic spells

10= poison

11= rope

other: _____

Table 1: Holsti's coefficient of reliability for all factors

Variable	Holsti	Variable	Holsti
Gender of main character	0.97	Role of character	0.97
Character's looks: muscular	0.84	Character's looks: sexy or seductive	0.66
Character's looks: attractive	0.78	Character's looks: thin	0.69
Character's looks: powerful	0.84	Character's looks: helpless	0.88
Character's looks: helpful	0.81	Character's looks: evil	0.91
Character's looks: happy	0.72	Character's looks: mad	0.78
Character's looks: carefree	0.84	Character's looks: innocent	0.84
Character's looks: afraid	0.81	Character's looks: violent	0.69
Character's ability: invisible	0.97	Character's ability: super speed	0.94
Character's ability: martial arts	0.94	Character's ability: skate/board/bike	0.97
Character's ability: special senses	0.97	Character's ability: flying	0.97
Character's ability: magic	0.97	Character's ability: using weapons	0.97
Character's ability: swim	0.97	Character's ability: super strength	0.94
Character's ability: resistance to injury	0.97	Character's ability: manipulates elements	0.97
Character's weapon: gun	0.97	Character's ability: other	0.97
Character's weapon: fire	0.97	Character's weapon: knife/sword	0.91
Character's weapon: fighting	0.94	Character's weapon: grenades	0.97
Character's weapon: tank	0.97	Character's weapon: ice	0.97
Character's weapon: magic spells	0.97	Character's weapon: bow and arrow	0.97
Character's weapon: rope	0.97	Character's weapon: poison	0.97
Character wears costume	0.94	Character's weapon: other	0.97
Costume: overall	0.84	Costume: overall tightness	0.84
Costume: revealing lower body	0.94	Costume: revealing upper body	0.91
Non-costume clothes: overall	0.88	Non-costume clothes: overall tightness	0.84
Non-costume clothes: revealing lower body	0.91	Non-costume clothes: revealing upper body	0.88
<i>Overall Holsti coefficient</i>	0.90		

Table 2: Difference of proportions: Gender differences of character roles

	Female (n=47)	Male (n=100)	95% CI	P- Value	Z- Score
Looks like real man/woman	93.6%	83.0%	[0.47%, 20.77%]	0.04	2.05
Detective, secret agent	0.0%	7.0%	[-12.00%, -2.00%]	0.006	-2.74
Robot	0.0%	2.0%	[-4.74%, 0.74%]	0.153	-1.43
Zombie or other “undead”	0.0%	6.0%	[-10.65%, -1.35%]	0.012	-2.53
Non-human cartoon	2.1%	14.0%	[-19.83%, -3.93%]	0.003	-2.93
Police officer or security official	2.1%	7.0%	[-11.36%, 1.61%]	0.141	-1.47
Soldier, warrior, ninja	10.6%	19.0%	[-20.06%, 3.34%]	0.161	-1.4
Human that can transform into something else	12.8%	22.0%	[-21.76%, 3.29%]	0.149	-1.44
Other	8.5%	16.0%	[-18.23%, 3.25%]	0.172	-1.37

Table 3: Difference of means: Gender differences in character appearance

	Female M (n = 47)	Male M (n = 100)	95% CI	P-Value	T-Score
Evil	0.128	0.33	[-0.4, -0.004]	0.045	-2.02
Afraid	1.32	0.704	[0.236, 0.994]	0.002	3.23
Helpless	1.3	0.81	[0.155, 0.821]	0.005	2.92
Innocent, Sweet	1.85	0.96	[0.48, 1.303]	0.000	4.3
Sexy or Seductive	2.36	0.97	[0.954, 1.829]	0.000	6.33
Carefree	0.81	0.97	[-0.528, 0.205]	0.383	-0.88
Happy	1.85	1.69	[-0.212, 0.534]	0.394	0.86
Angry	1.36	1.78	[-0.843, 0.006]	0.053	-1.96
Attractive	3.149	1.8	[1.01, 1.688]	0.000	7.87
Thin	2.66	2.14	[0.092, 0.945]	0.018	2.42
Violent	1.37	2.23	[-1.296, -.0425]	0.000	-3.92
Muscular	0.872	2.42	[-1.929, -1.166]	0.000	-8.03
Helpful	2.4	2.58	[-0.548, 0.197]	0.352	-0.94
Powerful	1.66	2.83	[-1.663, -0.678]	0.000	-4.74

Table 4: Difference of means: Gender differences of character attire

	Female M (n = 44)	Male M (n = 89)	95% CI	P- Value	T- Score
Non-costume Clothing Revealing Overall	0.86	0.34	[0.163, 0.891]	0.005	2.88
Non-costume Clothing Upper Body Revealing	1.16	0.52	[0.256, 1.029]	0.001	3.31
Non-costume Clothing Lower Body Revealing	1.23	0.66	[0.153, 0.976]	0.008	2.73
Non-costume Clothing Tightness	1.36	0.76	[0.158, 1.041]	0.008	2.71
	(n = 32)	(n = 70)			
Costume Revealing Overall	1.50	0.59	[0.386, 1.442]	0.001	3.48
Costume Lower Body Revealing	1.13	0.53	[0.096, 1.097]	0.020	2.39
Costume Upper Body Revealing	1.44	0.69	[0.183, 1.321]	0.011	2.65
Costume Overall Tightness	2.65	2.09	[-0.063, 1.182]	0.077	1.80

Table 5: Difference of proportions: Gender differences of character special abilities

	Female (n=47)	Male (n=100)	95% CI	P- Value	Z- Score
Special Abilities Overall	68.1%	85.0%	[-31.97%, -1.86%]	0.028	-2.20
Become invisible	2.1%	1.0%	[-3.44%, 5.59%]	0.628	0.48
Swim	0.0%	2.0%	[-4.74%, 0.74%]	0.153	-1.43
Skateboarding/snowboarding/ bike riding	0.0%	2.0%	[-4.74%, 0.74%]	0.153	-1.43
Manipulate elements (fire, water, ice, wind, etc)	21.3%	7.0%	[1.55%, 27.00%]	0.028	2.20
Magic	4.3%	7.0%	[-10.38%, 4.89%]	0.481	-0.70
Flying	17.0%	20.0%	[-16.28%, 10.32%]	0.661	-0.44
Special senses (seeing, hearing)	12.8%	22.0%	[-21.76%, 3.29%]	0.149	-1.44
Super speed	17.0%	23.0%	[-19.52%, 7.57%]	0.387	-0.87
Resistance to injury	10.6%	32.0%	[-34.06%, -8.66%]	0.001	-3.3
Martial arts	29.8%	40.0%	[-26.43%, 6.01%]	0.217	-1.23
Super strength	17.0%	44.0%	[-41.47%, -12.48%]	<0.005	-3.65
Using weapons	36.2%	52.0%	[-32.70%, 1.04%]	0.066	-1.84
Other	14.9%	8.0%	[-4.59, 18.38%]	0.239	1.18

Table 6: Difference of proportions: Gender differences of character weapon usage

	Female (n=47)	Male (n=100)	95% CI	P-Value	Z-Score
Were weapons used	70.2%	87.0%	[-31.43%, -2.15%]	0.025	-2.25
Ice / Freezing Device	4.3%	0.0%	[-1.52%, 10.03%]	0.148	1.45
Rope	0.0%	1.0%	[-2.95, 0.95%]	0.315	-1.01
Bow & Arrow	4.3%	1.0%	[-2.84%, 9.35%]	0.295	1.05
Tank or other vehicle	0.0%	2.0%	[-4.74%, 0.74%]	0.153	-1.43
Magic Spells	2.1%	2.0%	[-4.83%, 5.08%]	0.96	0.05
Grenades	2.1%	9.0%	[-13.84%, 0.09%]	0.053	-1.93
Fire / Flame	2.1%	13.0%	[-18.65%, -3.10%]	0.006	-2.74
Knife / Sword	21.3%	32.0%	[-25.57%, 4.13%]	0.157	-1.42
Guns	23.4%	40.0%	[-32.05%, -1.15%]	0.035	-2.11
Fighting	34.0%	62.0%	[-44.51%, -11.40%]	0.001	-3.31
Other	31.9%	28.0%	[-12.06%, 19.89%]	0.631	0.48