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# The Effect of Context on the Evaluation of Obese Vs. Average-Weight Children As a Function of Antifat Attitude

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The College of Wooster

The Effect of Context on the Evaluation of  
Obese vs. Average-Weight Children  
As a Function of Antifat Attitude

by

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Presented in Partial Fulfillment of the  
Requirements of Independent Study Thesis Research

Supervised by

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### Abstract

The current study examined the stigma related to obesity, specifically, the effect that stereotype-consistent and stereotype-inconsistent activity contexts have on individuals' evaluations of obese and average-weight target children. Subjects viewed a photo of an obese or average-weight boy, accompanied by a vignette that indicated his enjoyment of either videogames or soccer, and rated him on several traits. Then, subjects completed a questionnaire measuring their explicit antifat attitudes and took an Implicit Association Test measuring their implicit antifat attitudes. I hypothesized that the obese target would be evaluated more negatively than the average-weight target, and that the obese target would be rated the most negatively when he played videogames, and the most positively when he played soccer. I also hypothesized that subjects' antifat attitudes would moderate these interactions. Univariate Analyses of Variance were conducted to analyze data, and results indicated that the obese target was rated more negatively than the average-weight target, and that the interactions between weight and activity condition were significant only when examining participants with low antifat attitudes. Those who indicated high antifat attitudes rated the obese target more negatively than the average-weight target across activity conditions. Implications of these findings are discussed from an educational standpoint, and encourage future research in the area of weight-based stigma and its effects on children's health and academics.

### Introduction

Obesity in the United States has become an increasingly salient public health issue in recent years (Flegal, Carroll, Kuczmarski & Johnson, 1998). It is considered an epidemic due to its increased risk of heart disease, stroke, diabetes, and myriad other potentially preventative diseases. When it comes to obesity in children, this issue is magnified because of their exposure to health risks as well as negative social/emotional effects at a young age. Approximately 22 million children under the age of five are overweight across the world, and the number of overweight children and adolescents has tripled in the past three decades in the United States (Deckelbaum & Williams, 2001). Today, nearly one in three children in the United States are overweight or obese (“Let’s Move!”, 2013). The health risks that children with obesity face are so concerning that the federal government has even involved itself in the alleviation of this epidemic. In 2010, Michelle Obama launched the “Let’s Move!” initiative, encouraging children to engage in a minimum of 60 minutes of physical activity each day, emphasizing the importance of living a healthy lifestyle beginning at a young age.

The negative consequences of obesity are not solely represented by increased risk of disease, however. Obese individuals face stigmatizations that can affect several aspects of their physical and psychological health, which, in turn, may affect their ability to perform to their full potentials. Furthermore, research indicates that children who are obese suffer from stigmatization that can affect their social, emotional, and even their intellectual development (Crosnoe & Muller, 2004; Latner & Stunkard, 2003).

The effects that obesity stigma has on individuals' functioning make it a pervasive concern. There is an overwhelming amount of literature on weight-based bias specifically addressing the perspective of the discriminators and how they perceive overweight people and their associated characteristics. Compared to research of this scope, however, there is a relatively insignificant amount of literature addressing the implications of weight stigma, and its effects on those who are stigmatized and often marginalized by it. For this reason, it is important to examine the effects that weight-based bias has on obese individuals who are commonly exposed to this stigmatization.

### **Physical Effects of Weight-Based Stigma**

The health risks of obesity are widely known and accepted. Individuals who are obese face increased threats of weight-based diseases, and therefore more frequent doctors' visits and checkups. However, these disease-related health consequences are not the only way in which obesity affects its targets. Recently, research highlights health consequences that the stigma of being obese has on obese individuals. Internalization of weight-based stigma causes stress and can lead to increased risk of stress-related illness (Puhl & Heuer, 2010). Additionally, recent weight bias research suggests that individuals who are stigmatized due to their weight are at risk of increased vulnerability to maladaptive eating behaviors and avoidance of physical activity (Puhl & Heuer, 2009), taking a toll on their overall health and well-being. Clearly, an individual's physical health is affected not only by obesity's weight-related health consequences, but also by the affect of



stigmatization and negative perceptions toward appearance that create additional health risks.

Research investigating obese people's responses to stigmatizations highlights a vicious cycle that is a result of these biases. One study found that women who faced and internalized weight-based bias reported more frequent binge eating and refusal to diet in response to their stigma experiences (Puhl, Moss-Racusin & Schwartz, 2007). Additionally, findings suggest that weight-stigmatized individuals have lower exercise motivation and reduced participation in physical activities than those of average weight because of weight-based criticism during physical activity (Faith, Leone, Ayers, Heo & Pietrobelli, 2002; Rosenberger, Henderson & Grilo, 2006). Both of these responses to stigmatization lead to even higher amounts of weight gain and increased risk for obesity-related diseases, implying that stigmatization can heighten the threat of obese individuals' physical health conditions.

### **Psychological Effects of Weight-Based Stigma**

In addition to physical health concerns, weight-based stigma also plays a role in the targets' psychological well-being. Stigmatizing experiences predict psychological distress (Ashmore, Friedman, Reichmann & Musante, 2007) and act as risk factors for depression, decreased self-esteem, and body image dissatisfaction (Friedman et al., 2005; Puhl & Heuer, 2009). The impact that weight-based bias has on one's psychological wellness is concerning, and it provides more insight into the negative consequences of this stigmatization that are not only physical.

Past research also investigated the moderating effect that weight-based teasing, especially in childhood, has on psychological health. Teasing history is associated with significantly higher levels of depression, body dissatisfaction, and shame, and lower levels of self-esteem (Rosenberger, Henderson, Bell & Grilo, 2007). The implications of these findings suggest that obese individuals' psychological functioning could be negatively impacted due purely to the stigma that is associated with their appearance. This highlights another influential and inconspicuous way in which weight stigmatization can affect one's health and well-being, and the strong need for increased research in this area to investigate ways to counter these negative psychological effects.

### **Psychological Effects on Children**

Much the same as adults, obese children experience the negative consequences of being stigmatized by those who surround them. Most likely as a result of exposure to weight-based bias, obese children view themselves as less physically competent than nonobese children, and they score lower on general self-worth scales (Braet, Mervielde & Vandereycken, 1997). These findings are significant in that they illustrate evidence of the negative effects of the stigma beginning at a young age. By being excessively critical of themselves and viewing themselves as less capable than their average-weight peers, obese children are putting themselves at a disadvantage to their peers and are at increased risk of physical and psychological problems. This magnified self-judgment can affect children's self-confidence down the road, impacting their social aptitude and their ability to make friends, interact with peers and adults,

and function in social environments that they are increasingly exposed to throughout their lives.

The psychological consequences of weight stigma may also trickle down to affect other areas of children's lives, and research suggests that forms of bias such as weight-based teasing may impact their academic competencies. School performance is inferior in overweight children compared to normal-weight children, and stigmatization in the form of weight-based teasing was found to be significantly associated with lower academic achievement (Krukowski, West, Perez, Bursac, Phillips & Raczynski, 2009). These findings suggest that peer stigmatization's impact on children's psychological and emotional stability may be so significant that it negatively affects children's ability to focus on academics and perform to the best of their abilities in the school environment.

### **Antifat Attitudes in Adults**

The prevalence of weight-based stigma has led to the study of attitudes toward overweight individuals, and the effect that these attitudes may have on issues outside of their personal health. Past research indicates that the playing field is not level in several aspects of daily life when one compares obese and normal weight people, and this is mainly due to widespread antifat attitudes (Bissell & Hays, 2011; O'Brien, Latner, Halberstadt, Hunter, Anderson & Caputi, 2008; Crandall, 1994). Antifat attitude research is a significant area of study because of the influence that antifat stigma has on various aspects of the targets' lives. People who are obese face negative stigmatizations in forms of hiring

practices, opinions of health care providers, and perceived attractiveness (Crosnoe & Muller, 2004; Puhl & Brownell, 2003; Latner & Stunkard, 2003). These stigmatizations place obese individuals at a disadvantage compared to their nonobese counterparts in areas such as job acquisition, proper health care attainment, and overall likeability and success.

### **Antifat Prejudice in the Workplace**

Job interviews are situations in which a person with higher status can make snap judgments that affect the entire interview and the way in which the interviewee is perceived as a worker. In these situations, one can only hope that he/she is evaluated without the threat of any sort of discrimination and granted a fair shot at the job. However, various types of discrimination due to race (Mcconahay, 1983), sex, (Fidell, 1970), and age (Gringart & Helmes, 2008) are found when it comes to hiring job applicants. Another significant variable that is suggested to play a role in interviewers' hiring decisions is the interviewee's body weight. Research in this area indicates the presence of antifat prejudice in hiring practices, as well as in the workplace.

Perhaps due to the stigmatization that obese individuals tend to be lazy and unmotivated, overweight persons are viewed as significantly less desirable employees, and less competent, productive, organized, and successful than their average-weight counterparts (Larkin & Pines, 1979). Moreover, average-weight individuals are characterized by such descriptive labels as "conscientious", "takes the initiative", "aggressive", and "ambitious", while "mentally lazy" and "lacking self-discipline" are rated as more characteristic of the overweight (Larkin &

Pines, 1979). These negative stereotypes associated with obese individuals are a hindrance in such an environment as the workplace because they connote certain expectations of their work ethic, or lack thereof. In addition, when asked to indicate their own chances of being hired compared to an obese or average-weight job applicant's, subjects express a significantly greater expectation of being hired after viewing an overweight applicant than after observing an average-weight, suggesting a lower evaluation of the overweight applicant (Larkin & Pines, 1979). The presence of these stereotypes infers a threat to overweight interviewees, and suggests that overweight potential employees may be at a disadvantage before even opening their mouths, based on their weight-related image.

The stigmas attached to overweight individuals are evident in the workplace outside of hiring practices as well. For example, managers described as average-weight are rated as significantly more desirable supervisors compared to the more harshly judged overweight managers (Decker, 1987). This could potentially become an issue in the workplace because overweight supervisors might command less respect than average-weight supervisors, or employees' perceptions of their superiors could be tainted due to their weight. This is a concerning issue in that it draws attention to the fact that obesity can, in fact, impact perceptions of obese people's competencies and one's confidence in them.

Preexisting beliefs or prejudice toward fat individuals may lead to actual discriminatory behavior regarding whether or not an individual is hired. Discrimination is defined as the unfair treatment of a person based on underlying negative attitudes or biases (O'Brien et al., 2008). Employers who act upon any

preexisting antifat biases by not hiring obese individuals take away the equal opportunity and non-discriminatory processes that all hiring situations are expected to provide. However, previous literature highlights evidence of discriminatory hiring behavior in professional institutions. For example, participants assessed in a study by O'Brien et al. (2008), made-up resumes for job candidates that included a photo of either an obese or normal-weight individual. Participants rated obese candidates as having less leadership potential, less likely to succeed, and less likely to be employed than normal-weight candidates. They were also given a lower starting salary and ranked as less qualified overall than normal-weight candidates. This study is one of several which highlights the inequality that obese individuals are confronted with in work-related situations, and although it does not depict an actual hiring situation comprised of trained professionals, it emphasizes aspects of weight-related bias that could unconsciously seep through in real-life circumstances.

Employers may be unwilling to hire obese people, even if their weight would not interfere with their work (Crandall, 1994). People who are overweight are significantly less highly recommended for hiring than those of average weight (Larkin & Pines, 1979; Rooth, 2009). There is also evidence of denials of promotions and raises to people who are obese, and an indication that obese employees tend to have lower wages than normal-weight employees for the same job performed (Puhl & Brownell, 2001; Rothblum et al., 1990). These findings convey a clear message: there is weight discrimination occurring in the workplace that is unethical and influential on the victims' lives.

Besides reasons regarding stereotypes such as obese persons being lazy or unmotivated (Larkin & Pines, 1979), research suggests other obesity-related explanations for malpractices in hiring. Obesity is correlated with bad health (Pronk, Tan & O'Connor, 1999), and a higher rate of absenteeism in the workplace (Leigh, 1991; Parkes, 1987). Excess weight is a risk factor for illnesses that are not life threatening, but that interfere with one's ability to fulfill normal social roles, such as one's job (Parkes, 1987). For this reason, employers who are hiring may have experienced situations involving similar absenteeism in the past, which would affect their ultimate hiring decisions. Conversely, by acting on this impression of potential employees who are obese, hirers are falsely generalizing and expressing their understanding that this stereotype pertains to every overweight individual. This implies yet another way in which obesity can cloud employers' ultimate hiring behaviors.

In addition to outside observation of these prejudiced practices, other studies highlight obese individuals' awareness of the presence of this discrimination in their profession. Obese persons self-report higher amounts of weight-related discrimination than normal weight individuals (Carr & Freidman, 2005; Rothblum, Brand, Miller & Oetjen, 1990), and they are even likely to attempt to conceal their weight to avoid potential problems in the workplace (Rothblum et al., 1990). These findings indicate that in the workplace, obese individuals may not even feel safe from stigmatizations and discrimination. Furthermore, they may not be receiving the same opportunities as their peers, not due to their work ethic and skills, but merely due to their physical characteristics.

### **Antifat Prejudice in Health Care**

The work environment is not the only place where individuals who are obese may experience weight-based prejudice. Previous research also explores the presence of antifat bias in the health care setting, which could potentially affect clinical judgments and dissuade obese persons from seeking care (Puhl & Brownell, 2001). Negative attitudes expressed not toward obesity as a health condition, but toward overweight individuals themselves have been reported in physicians, nurses, and even medical students (Puhl & Brownell, 2001).

Physicians respond negatively to obesity as a health condition and as a social characteristic (Klein, Najman, Kohrman & Munro, 1982). This suggests a presence of weight-based bias in health care professionals, which could ultimately result in negative consequences for obese patients. Research on this bias suggests that it can be found in both implicit and explicit forms. One study found that health care professionals exhibited a significant pro-thin, anti-fat bias, and tended to endorse stereotypes such as lazy, stupid, and worthless, as measured by an Implicit Association Test (Schwartz, Chambliss, Brownell, Blair & Billington, 2003). Similar results indicating a clear implicit antifat bias were even found in physicians who specialize in obesity treatment (Teachman & Brownell, 2001).

Findings examining explicit biases indicate evidence that physicians associate obese patients with negative characteristics including poor hygiene, non-compliance, hostility, and dishonesty (Klein et al., 1982). Some physicians even prefer not to manage overweight patients at all (Maddox & Liederman, 1969). A study of family physicians that filled out anonymous questionnaires found that



two-thirds of them believed that their patients who were obese lacked self-control (Price, Desmond, Krol, Snyder & O'Connell, 1987). Nurses were found to feel disgust toward handling obese patients (Bagley, Conklin, Isherwood, Pechiulis & Watson, 1989) and they rate lifestyle as the main cause of obesity in patients (Hoppe & Ogden, 1997). This literature highlights that even professionals who are educated with years of medical training exhibit similar blame-related antifat biases to peoples outside of the medical field when it comes to working with obese individuals.

The implications of these findings of antifat prejudice in the health care setting are highly important to consider. If obese individuals feel stigmatized and victimized in the medical environment, they may choose not to seek health care at all. This could lead to a slippery slope in terms of their well being, decreasing their chances of the early detection of weight-related diseases, and therefore increasing the likelihood of medical problems and health care costs in the future (Schwartz, et al., 2003). Obese patients' health can actually benefit by targeting and confronting antifat biases in medical settings. However, the continued avoidance of antifat prejudice in this environment only further detracts their health and likelihood of recovery.

### **Attractiveness and Obesity**

The idea that being physically attractive puts you at an advantage in life has become a widely accepted theme over the years. Research indicates that across cultures people generally agree upon who is and is not attractive (Langlois, Kalakanis, Rubenstein, Larson, Hallam & Smoot, 2000), suggesting that there are

specific physical qualities or characteristics that contribute to one's perceived attractiveness. Evidence proposes that people tend to perceive attractive people differently than those who are less attractive. Individuals relate physical attractiveness with the possession of positive qualities (Langlois et al., 2000; Van Leeuwen & Macrae, 2004), and the physically attractive are judged more positively than unattractive people. More specifically, research indicates that attractive people are more socially desirable than unattractive people, and they are expected to attain more prestigious occupations, more acceptable partners, and to have more total happiness in their lives than those of lesser attractiveness (Dion, Berscheid & Walster, 1972). These findings provide evidence for a "Halo Effect" regarding attractiveness, such that one's character is judged more positively if he/she is attractive, and more negatively if he/she is not, thus affecting one's overall impression of that person.

Studies indicate that there are many benefits associated with being perceived as physically attractive. People who are attractive tend to be treated more positively than unattractive individuals, even by those who know them (Langlois, et al., 2000), which could have an effect on people's daily life in school or on the job. When the attractiveness of a female author was manipulated, results indicated that men rated the attractive author as significantly more talented than the unattractive author, even though they read the exact same essay (Kaplan, 1978). These findings illustrate the benefits that can put attractive individuals at an advantage in many aspects in life. Research even suggests that facial attractiveness does not have only an explicit influence on behavior, but it can also

influence behavior implicitly (Van Leeuwen & Macrae, 2004). Physical attractiveness generally guarantees a positive evaluation (Eagly, Ashmore, Makhijani & Longo, 1991), and attractive people are therefore put at an advantage over those who are unattractive. For this reason, it is important to investigate specific characteristics that are perceived as attractive or unattractive. One salient characteristic that is considered influential in attractiveness research is body weight.

As past research illustrates, obese individuals are disadvantaged in the workplace and health care environment due to antifat discrimination. In addition, studies indicate that those who are overweight may face even more of a disadvantage due to their perceived unattractiveness as a function of their Body Mass Index (BMI). Obese persons are viewed as less attractive than nonobese persons (Clayson & Klassen, 1989), leading to harsher judgments by others. The relationship between overweight and unattractiveness is especially salient in women—studies have found that large body size and high waist-to-hip ratios are evaluated as unattractive qualities (Hovarth, 1979; Singh & Young, 1995). Furthermore, when participants viewed a figure with these characteristics, they were evaluated as older and less desirable for engaging in romantic relationships than the slender figure (Singh & Young, 1995). These findings suggest that obese individuals may be evaluated as unattractive simply as a function of their weight. This is a notable issue because of research that suggests, “What is beautiful is good”. Therefore, obese individuals may not be evaluated in such a positive light, which in turn could influence the way they are treated.

### **Antifat Attitudes toward Children**

Previous literature indicates there is a prevalence of antifat bias in adults toward their adult peers. However, obese adults are not the only individuals who face prejudice due to their weight; research suggests a significant bias toward children who are overweight as well (Latner & Stunkard, 2003; Puhl & Latner 2007). In social settings, children's friends and peers stigmatize them due to their weight, and students tend to rate obese children as the least desirable friends and playmates (Puhl & Brownell, 2002), and the least liked out of children with various disabilities or no disability (Hansson & Rasmussen, 2010; Latner & Stunkard, 2003). One of the most prominent places where obese children are stigmatized is the school setting, making it critical to investigate the stigmas that exist in this environment, the sources of stigmatization, and the effects that this bias may have on the students themselves.

### **Stigma in the Academic Setting**

Children have antifat biases, which are accentuated in social environments. The most prominent social environment in children's lives is school—where they spend most of their days surrounded by peers who play a role in shaping their identities. It is an influential period of time where children are evaluated based on preexisting stigmas, and stigmatizations are likely to affect children's social, emotional, and academic lives. If children are evaluated based on any negative stereotype, they are more prone to teasing or social isolation, making it harder to build friendships and function properly in an environment that is both academic and social, especially at a young age.

Weight-based stereotypes play an influential role in children's evaluations of their peers. When asked to attribute characteristics to obese targets, children 4-11 years of age continue to associate such attributes as ugly, selfish, lazy, and stupid (Wardle & Golding, 1995). Additionally, 7-12 year-olds rated an obese figure as lazier, less happy, less popular, and less attractive than an average-size figure (Tiggemann & Wilson-Barrett, 1998). These findings illustrate negative stereotypes that are reflected in out-group perceptions of obese peers, and they could have a negative effect on children's overall physical and psychological health. These negative attitudes toward obese peers begin as early as age three (Puhl & Latner, 2007), and they parallel obesity stereotypes that are prevalent in many adults.

Previous findings support the assumption that children stigmatize their obese peers in the school setting. The acquisition of this knowledge led to the exploration of antifat biases present in other members of the academic community, such as school faculty and staff. According to Puhl and Latner (2007), while teachers and staff are invested in the well being of their students, it does not mean that they are immune to societal attitudes that stigmatize obese individuals, and they may perpetuate bias or treat overweight students differently than average-weight students unintentionally.

Students are not the only individuals guilty of exercising their antifat biases in the academic environment; educators stigmatize students based on their weight as well. Research suggests that teachers tend to make assumptions about obese children's social, reasoning, and cooperation skills, as well as their home

life (Puhl & Latner, 2007). A study assessing middle and high school teachers' obesity-related attitudes found that about a quarter of the teachers perceived obese persons as more emotional, less tidy, less likely to succeed at work, having "different personalities", or having more family problems than their nonobese counterparts (Neaumark-Sztainer, Story & Harris, 1999). Another study investigated stereotyping in elementary school principals, and found that over 50% of them attributed a lack of self-control and psychological problems as a major contributor to obesity (Price, Desmond & Stelzer, 1987). Teachers' biased perceptions of their obese students are concerning because they associate them with negative characteristics and qualities that conflict with academic success.

All of these findings highlight negative attributes that obese children are perceived to embody, which could ultimately affect their academic performance. The origin of stereotypes that are associated with obesity offers insight into why overweight individuals are perceived in such a way, and why this stigma may be accentuated in the academic environment.

### **Origin of Obesity Stigma**

Research has examined the possibility of a common ideology present in individuals with high antifat biases. Studies especially concentrate on the blame aspect of obesity, and whether people's ideologies affect their perception of one's responsibility for being overweight. According to Crandall and Martinez (1996), if a person is judged responsible for a bad outcome, that person is met with anger, blame, stigmatization, and social rejection. If not judged responsible, that person is met with sympathy, pity, little blame, relative social acceptance, and a

willingness to help. Therefore, evaluating whether an individual places blame on obese persons for their condition or attributes their weight to other influential factors can assist in predicting one's attitude toward obese persons. A series of studies by Crandall suggest that antifat attitudes stem from a social ideology that is characteristic of a tendency to hold an individual responsible for every outcome in his or her life (Crandall & Martinez, 1996). These findings make the assertion that the origin of antifat attitudes and overweight stigma may stem from a belief that obese individuals are reaping the consequences of their "laziness" and "lack of self-control".

In addition to this attributional social ideological theory, factors such as self-determinism and the Protestant work ethic are related views that play a role in how individuals judge obese persons. These values reflect the notion that with hard work, one has the power to control his or her fate, or in this case, his or her weight. When examining this ideology through an educational scope, people may utilize students' weight as a device for judging one's work ethic or willpower. This could result in obese students being at a disadvantage because they are perceived as being at odds with the Protestant work ethic (Crandall & Biernat, 1990), and are therefore judged as lazier and perhaps less academically capable than average weight students. Once educators' expectations of students are affected by these perceptions, overweight students' actual academic capabilities become a concern.

### **Effects of Stigma in the Academic Setting**

School environments should be settings where students are given equitable opportunities to learn and succeed without the threat of implicit bias from educators. Unfortunately, past research highlights several factors that have an influence on students' academic success. In one landmark study that manipulated teachers' expectations of their students, researchers found that students indicated higher intellectual ability when their teachers had high expectations for them, and lower intellectual ability when teachers' expectations were not as high (Rosenthal & Jacobson, 1968). This potential self-fulfilling prophecy in the classroom was replicated in other studies (Rist, R. C., 1970; Rubie-Davies, Hattie & Hamilton, 2006), suggesting that teachers' expectations of students can have an effect on their performance. This is especially troubling for obese students, because of the stereotype that they lack a strong work ethic and are simply "lazy". A teacher who implicitly associates obesity with laziness and a lack of work ethic may have lower expectations from the start for a student who is obese versus an average-weight student in the same class. Consequently, this may have an effect on the obese child's overall academic achievement in the class, and restrain him/her from reaching his/her full potential. Once again, a situation like this puts obese individuals at a disadvantage for success and equal opportunity.

Social psychologists who study stereotypes have come to agree upon the suggestion that they come from some kernel of truth, that is, stereotypes are derived from some degree of validity, because otherwise they would never have emerged (Allport, 1958; Penton-Voak, Pound, Little & Perrett, 2006). Previous



literature on the truth behind weight-based stereotypes regarding academic achievement indicates that weight may have a moderating effect on academic achievement. Research suggests an association between obesity and school performance such that students who have high BMIs tend to have lower academic achievement than those with lower or healthier BMIs (Crosnoe & Muller, 2004; Taras & Potts-Datema, 2005), perhaps providing a kernel of truth to this stereotype. Speculation on the reasons behind this negative relationship is limited, but researchers suggest that given the stigmatization of obesity in society as a whole, individuals at risk of obesity would be expected to have lower functioning, or academic performance, than those not at risk (Crosnoe & Muller, 2004).

Another theory for the inverse relationship between BMI and academic achievement lies in the self-fulfilling prophecy. Literature on self-fulfilling prophecies suggests that stereotypes of obese individuals' intellectual competency could have an influence on teachers' expectations of their students, which could result in the perpetuation of the expected behavior by the students, in this case, low academic success.

### **The Self-Fulfilling Prophecy**

A self-fulfilling prophecy is defined as an assumption or prediction that causes the expected or predicted event to occur solely as a result of having been made, thus confirming its own "accuracy" (Watzlawick, 1984). Self-fulfilling prophecies may be exercised and utilized to one's benefit, or inadvertently ignored, leading to a negative effect in areas such as academia.

### **Pygmalion in the Classroom**

Research on the self-fulfilling prophecy highlights the pervasiveness of its influence on academic achievement. Studies suggest teachers' high or low expectations for their students are often justified by students' academic outcomes (Madon, Jussim & Eccles, 1997; Rosenthal, 1968). The most well-known study on this topic is Rosenthal's 1968 study entitled *Pygmalion in the Classroom*. In this study, participants were teachers who were informed that a group of their students was "growth spurters" based on their results on the Harvard Test of Inflected Acquisition. However, this group of children was actually chosen at random and the test was nonexistent. Researchers investigated whether the children of whom greater intellectual growth was expected would demonstrate greater intellectual growth than the undesignated group of children of whom this growth was not expected.

The results of this study were shocking and salient to those involved in the field of education. The undesignated control group of children gained over eight IQ points throughout the year, while the "spurters", or the experimental group, gained over twelve. They also reflected an increasing expectancy advantage going down from sixth grade to the first grade, where high expectations were the most dramatic and influential in determining children's achievement. These results indicate that expectations of children's behaviors can ultimately be justified through a self-fulfilling prophecy, implying the importance of teachers taking caution when forming and exercising their expectations of their students. Children's achievement in the classroom can be influenced by teachers'

perceptions, which provides evidence for the effect that teachers' perceptions of obese children's intellectual ability may have on their actual intellectual growth (Rosenthal, 1968).

### **Pygmalion Outside of the Classroom**

The breakthrough results of Rosenthal's study led researchers to question whether this Pygmalion effect could be found in areas besides the classroom. Subsequent studies found evidence for self-fulfilling prophecies playing influential roles in workplace productivity as well as relationship predictability.

**Workplace.** Employers are constantly searching for ways to help their employees reach their full potentials, thus raising overall company productivity. One way in which managers have harnessed their workers' capacity is through the self-fulfilling prophecy. Managers' expectations can have a powerful effect on work rate, and raising one's expectations for workers can boost their productivity (Eden, 1990). Research suggests that through the communication of high performance expectations by supervisors, subordinates' self-expectancies are altered, thus increasing their motivation and enhancing performance (Eden, 1984). This method of self-fulfilling prophecy is recommended for managers to incorporate into their work environment to reap their employees' maximum production potentials, thus possibly revealing a long sought-after key to increased efficiency of companies and corporations.

The influence that these Pygmalion effects can have on individuals is an intriguing concept for psychologists because it indicates an ability to manipulate human behavior in a way that can be beneficial. The suggestion that one's high

expectations can perpetuate a desired behavior from another individual illustrates the control that outside forces or perceptions can have on individuals, and how they can benefit from academic or work-related success through them. However, when expectations are low, self-fulfilling prophecies tend to be more detrimental, as literature on the Pygmalion effect in relationships has demonstrated.

**Romantic Relationships.** Romantic relationships are complex, and there is a plethora of reasons for why some do not last, from a lack of similarities to a lack of love. One factor that can also play a part in whether or not a relationship endures is the partners' expectations of the relationship lasting. Previous research that examined partners' rejection-sensitivity found that those with those with high rejection-sensitivity were more likely to break up than those with low rejection-sensitivity (Downey, Freitas, Michaelis & Khouri, 1998), suggesting that rejection experiences lead people to behave in ways that elicit rejection from their dating partners, thus perpetuating their own expectations of the relationship.

Additionally, research suggests that prophecies may be self-fulfilled when one idealizes his/her romantic partner; and relationships are most likely to persist when romantic partners idealize one another (Murray, Holmes & Griffin, 1996).

These findings provide more evidence for the ability of one's beliefs to predict an expected outcome, and they imply that self-fulfilling prophecies could be responsible for success or failure. For this reason, and especially in the academic setting, it is important to be aware of one's expectations so that the playing field is level for all students, or to use expectations to one's advantage to support intellectual growth and prosperity.

Because various stereotypes, such as previously discussed obesity stereotypes, tend to bias individuals' evaluations and expectations of children, they may ultimately have an effect on their academic achievement. Thus, it is crucial to study the conditions under which children face stereotyping to be informed of when these biases are most likely to occur and to prevent them from ultimately trickling down and affecting children's academic success.

### **Present Study**

Previous research suggests that people tend to stigmatize obese individuals, and the psychological effects of this stigmatization, as well as the corresponding stereotypes involving academic expectations, are capable of altering children's academic capabilities. However, a relatively insubstantial amount of literature addresses specific conditions under which children are stereotyped, and how these stereotypes may affect them, especially through an academic scope.

The aim of the present study was to investigate the conditions under which children are stereotyped, using a two-by-two between-subjects factorial design. Students at a small, liberal arts college were asked to complete an online survey and take a weight-based Implicit Association Test. The survey was comprised of two sections. In the first section, subjects viewed a photo of an average-weight boy or an obese boy who was described as either enjoying sports or enjoying videogames, and were asked to rate him on a series of traits. In the second section, subjects' explicit antifat attitudes were measured using the Antifat Attitudes Questionnaire (Crandall, 1994). Finally, subjects' implicit antifat attitudes were

measured using a weight Implicit Association Test (IAT). Based on previous research, I hypothesized that 1) the obese target would be rated more negatively than the average-weight target, 2) subjects would rate the obese target who enjoys videogames the most negatively, 3) subjects would rate the obese target who enjoys soccer the most positively, and 4) these interactions may be moderated by participants' level of antifat attitude, such that subjects with higher antifat attitudes would rate the obese target lower than subjects with lower antifat attitudes.

## **Method**

### **Participants**

A total of 68 subjects participated in this study. All subjects were undergraduate students at a small liberal arts college in Ohio. Participants ranged from 18 to 22 years of age, and the sample population consisted of 31 men and 37 women. Compensation for subjects who were in introductory Psychology classes involved getting a fixed amount of credit to fulfill a class requirement. Subjects either signed up to participate online through a school-related system, or by contacting me via email or phone.

### **Measures**

**Body Mass Index.** The first part of my study required participants to complete an online survey. In order to study the relationship between subjects' BMI and their implicit and explicit antifat attitudes, the first page of this survey inquired about each subject's height in feet and inches and weight in pounds (as

well as their age and sex). Each person's response was then typed into an online calculator, which computed the subject's BMI.

**Attitudes Toward Target Child.** To measure participants' attitudes toward the target child (Joe), they were asked to rate him on a series of traits after viewing a picture of him and reading a short vignette about him. Subjects viewed a photo of either obese Joe or normal-weight Joe (see Appendix A), with an accompanying photo of either a soccer ball or an X-Box to make the corresponding description more salient. Photos of Joe were found on a weight loss camp website, and depicted a boy before and after his weight loss. The soccer ball and X-Box photos were found on the Internet as well. The two vignettes were designed to provide a circumstance under which Joe may be more or less likely to be discriminated against (see Appendix B). They included the same information in each condition, and only varied in past time activities (soccer or videogames). An example of one vignette is as follows:

This is Joe. His favorite color is blue and he has a dog named Rex.

In his free time, he enjoys playing video games and watching television. His favorite television show is Survivor. Joe is thirteen years old.

After viewing the photo and reading the accompanying description, subjects rated Joe on a series of traits (see Appendix C). Participants indicated the amount that they perceived each trait applying to Joe by rating each item on a 1-7 semantic differential scale. Items included "Dumb" vs. "Smart", "Untrustworthy"

vs. “Trustworthy”, and “Unkind” vs. “Kind”. Internal consistency of this measure was high, validity ( $\alpha = .80$ ).

**Antifat Attitudes.** Subjects’ antifat attitudes were measured using an adaptation of Crandall’s Antifat Attitudes Questionnaire (1994), found in Appendix D. Answers were based on a 0-7 Likert-type scale (deviating from Crandall’s 0-9 Likert-type scale) ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), and the scale was dichotomized into high and low antifat attitudes. Items were divided into three categories of measurement: their dislike of fat people ( $\alpha = .84$ ), their own personal fear of becoming fat ( $\alpha = .79$ ), and their perception of the willpower of fat people in terms of controlling their weight ( $\alpha = .66$ ). The items included “I don’t really like fat people much”, “I feel disgusted when I gain weight”, and “Some people are fat because they have no willpower”. Internal consistency of this measure was high.

**Implicit Weight Bias.** Subjects completed a weight-based Implicit Association Test to measure their implicit weight bias. This was administered using a weight IAT template designed in Microsoft Excel and a computer program named Direct RT. In this program, participants sort words pertaining to good or bad and silhouettes that are either fat or thin in their proper categories. The test measures reaction time when sorting words and pictures, and whether or not there is a difference in the time it takes to sort certain words that may, implicitly, have little relation to each other. Good and bad words were adapted from a study by Teachman, Gapinski, Brownell, Rawlins and Jeyaram (2003). For an online example of this IAT, see [www.implicit.harvard.edu/implicit/demo.com](http://www.implicit.harvard.edu/implicit/demo.com).



**Procedure**

Using an online survey distributor called Survey Gizmo, I created four different surveys to distribute randomly to subjects in each condition. Participants signed up for a thirty-minute time slot in which they would come to a computer lab in an academic building on campus and be assigned to one of three available computers. Each computer had a survey up on the screen, and subjects were instructed to follow the directions that appeared.

The first portion of the survey involved seeing and reading about Joe, and rating him on a series of traits. After this, the survey instructed subjects to ask the administrator for a blank map before they continued on. When participants reached this portion of the survey, they were given a blank map of the United States and a pen and asked to write as many states and/or state capitals on it as they could in three minutes. This was a filler task incorporated to get subjects' minds to stray from the topic of first portion of the survey, so that they would be less likely to extricate the aim of the questionnaire in light of the first portion of the survey.

After three minutes had passed, I took the map from the subjects and asked them to finish the final portion of the survey, which consisted of the Antifat Attitudes Questionnaire. After this was completed, they were moved to a neighboring computer to complete the IAT. Subjects were asked to complete this final task in the study by following the directions on the screen. When this was finished, they were given a debriefing form and thanked for their participation in the study.

## Results

The major hypotheses of this study made the following predictions: 1) the obese target would be rated more negatively than average-weight target, 2) subjects would rate the obese target who enjoys videogames the most negatively compared to the average-weight target, and 3) subjects would rate the obese target who enjoys soccer the most positively compared to the average-weight target. I also examined the possibility that these effects could be moderated by participants' own level of antifat attitudes. Specifically, I predicted that 4) subjects with higher antifat attitudes would rate the obese target lower than would subjects with lower antifat attitudes.

In addition to these hypotheses, I also investigated whether there was a relationship between participants' own BMI and their trait ratings of the target child. Subjects' BMIs and trait ratings data were correlated, and results indicate no significant correlation between BMI and trait ratings, ( $r = -.072$ ,  $p = .687$ ). A correlation was also run to analyze the relationship between BMI and antifat attitudes, but results were again non-significant, ( $r = -.17$ ,  $p = .156$ ).

To test my first hypothesis, the data were analyzed statistically using a two-way analysis of variance. Results indicate a main effect for weight on trait ratings, such that the average-weight target was rated more positively than the obese target,  $F(1, 64) = 16.84$ ,  $p < .001$ . Results also indicate a main effect for activity on trait ratings, such that the target who played soccer was rated more positively than the target who played videogames,  $F(1, 64) = 29.88$ ,  $p < .001$ .

This main effect was strengthened by the IAT, which compared subjects' reaction times when associating "fat" with "good" to "fat" with "bad". Reaction time data was recorded in the Direct RT program and a syntax file available on the Empirisoft website was used to show me how to calculate average reaction times for each block. As is typical with reaction time data, the raw reaction time scores were transformed using a log transformation. Subjects' D-scores were calculated by subtracting their Block 1 (stereotype-consistent trials) response times from their Block 2 (stereotype-inconsistent trials) response times, and positive D-scores indicate implicit antifat bias. Overall, respondents indicated positive implicit antifat attitudes ( $M = .02$ ,  $SD = .08$ ). Subjects' IAT scores ranged from  $D = -.03$  to  $D = .33$ . Data were analyzed using a paired samples t-test after performing an initial log transformation, and results indicate a highly significant implicit antifat bias in participants,  $t(55) = -14.725$ ,  $p < .001$ .

To examine the relationship between subjects' explicit antifat attitudes measured by Crandall's Antifat Attitudes Questionnaire and their implicit weight biases measured by the IAT, a correlation was run comparing subjects' antifat attitudes scores to their D-scores. Out of the 68 participants, 15 participants' IAT data was deleted due to technical difficulties, e.g. computer malfunction. Thus, 15 participants' D-scores were non-existent when running the correlation. Surprisingly, results indicate no significant correlation between subjects' explicit antifat attitudes score and their D-score ( $r = -.052$ ,  $p = .708$ ), meaning there was no significant association between participants' explicit and implicit antifat biases.

To test both my second and third hypotheses, I examined the two-way interaction between target weight and activity. Results indicate no significant interaction,  $F(1, 64) = 0.51, p = .479$ , such that participants did not rate the obese target more negatively when he was playing videogames ( $M = 3.83, SD = .44$ ), nor did they evaluate him more positively when he was playing soccer ( $M = 4.38, SD = .54$ ).

The absence of an interaction between target weight and activity and the failure to confirm my second and third hypotheses is disappointing. However, it is possible that another factor had an influence on these effects. Thus, I examined the effect that participants' antifat attitudes had on trait ratings of the target. To test my fourth hypothesis, data were analyzed statistically using a three-way analysis of variance. A median split on participants' Antifat Attitudes Questionnaire scores ( $Median = 3.84$ ) was performed, separating participants into high ( $M = 4.30, SD = 0.66$ ) vs. low ( $M = 2.78, SD = 0.38$ ) prejudice groups. Results indicate a three-way interaction between weight, activity, and antifat attitudes,  $F(1, 64) = 8.056, p = .006$ . Specifically, for subjects with low antifat attitudes, post-hoc analyses indicate that the average-weight target was rated relatively the same regardless of activity, while the obese target was rated negatively in the videogame condition and positively in the soccer condition,  $F(1, 28) = 4.929, p = .035$  (see Figure 1). For high-prejudice participants, post-hoc analyses indicate that the predicted two-way interaction between target weight and activity was not significant,  $F(1, 34) = 3.664, p = .065$ . However, there was a main effect for weight on trait ratings and activity condition on trait ratings,

such that people with high antifat attitudes rated the obese target more negatively than the average-weight target regardless of activity,  $F(1, 34) = 12.808$ ,  $p = .001$  and rated the average-weight target more positively if he played soccer and negatively if he played videogames,  $F(1, 34) = 16.309$ ,  $p < .001$  (see Figure 2). These results suggest that hypotheses two and three were supported, but only when examining low-prejudiced participants. High-prejudice participants derogated the obese target across activity conditions.

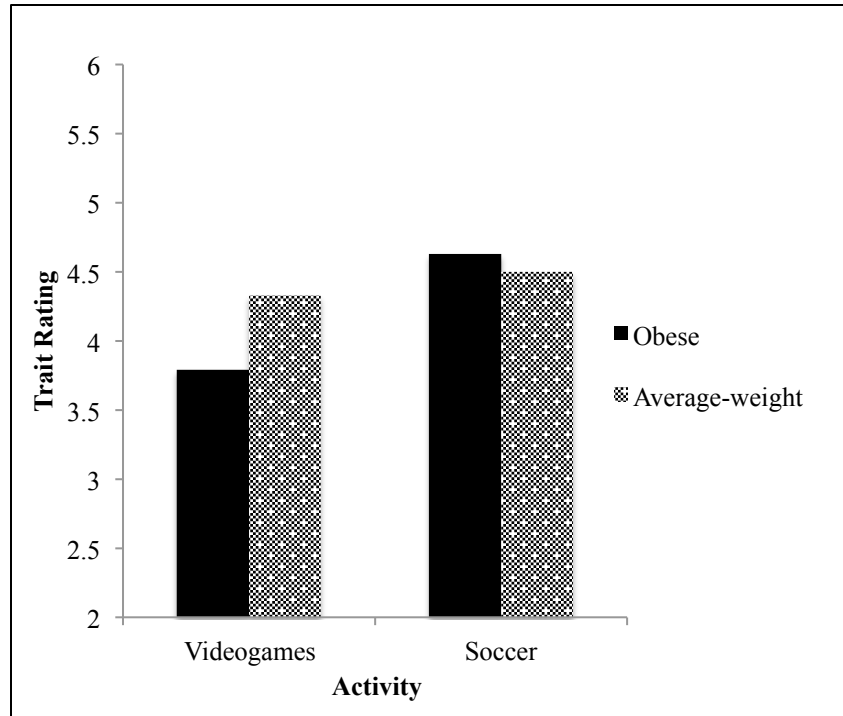


Figure 1. Evaluation of target as a function of low antifat attitude

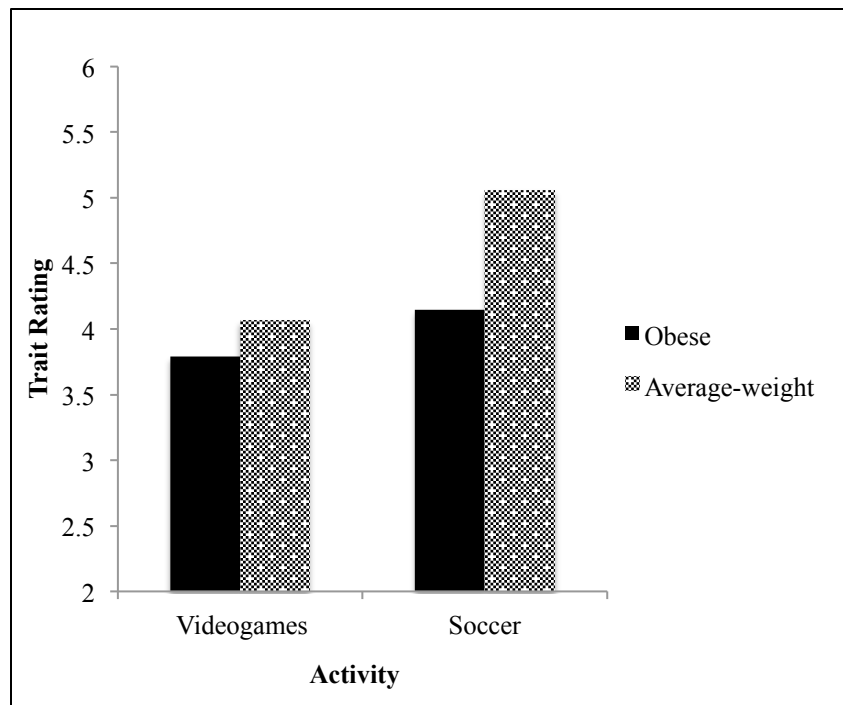


Figure 2. Evaluation of target as a function of high antifat attitude

### Discussion

The results of my study partially support my hypotheses. My first hypothesis, which predicted that participants would evaluate the obese target more negatively than the average-weight target, was confirmed. Participants who viewed the obese target in either of the activity conditions tended to rate the target more negatively on traits overall than those who viewed the average-weight target. Additionally, IAT results strengthened this finding by indicating that it took subjects a longer amount of time to associate “fat” with “good” than with “bad”. However, there was no significant correlation between subjects’ implicit and explicit antifat attitudes scores, which is intriguing. One argument for this outcome could be individuals’ “dual attitudes” at work, which are divergent attitudes that are brought to the surface by different attitude measures (Wilson, Lindsey & Schooler, 2000). In contrast, according to Payne, Stokes, and Burkley (2008), this outcome might also be due to the variability in the test structures of explicit and implicit measures, which underestimates the relationship between implicit and explicit cognition. These authors recommend equating the structures of these tests to deflate the variance in methodology, thus increasing the likelihood for a significant correlation between implicit and explicit measures.

My second and third hypotheses, that the obese target playing videogames would be rated the most negatively and the average-weight target playing soccer would be rated most positively, were not confirmed. Because of this, I examined the influence that antifat attitudes have on participants’ trait ratings of the target. Results suggested that high vs. low antifat attitudes have a moderating effect on

trait ratings. Subjects who had low antifat attitudes and viewed the obese target in the videogame condition rated him the most negatively. Those who viewed the obese target in the soccer condition evaluated him the most positively. Those who had low antifat attitudes and viewed the average-weight target rated him about the same, regardless of the activity associated with him. Participants who indicated high antifat attitudes and viewed the obese target evaluated him negatively regardless of activity, and evaluated the average-weight target more negatively if he played videogames and more positively if he played soccer.

An abundant amount of research suggests that obese individuals face antifat prejudice throughout day-to-day life (Carr & Friedman, 2005; Crandall & Martinez, 1996; Hoppe & Ogden, 1996; Puhl & Heuer, 2010). This weight-based stigmatization applies to children as well as adults (Latner & Stunkard, 2003; Puhl & Latner 2007), and the present study's results support this idea. Several studies examine peer evaluations of overweight or obese children, and findings indicate that children evaluate obese targets more negatively than thin targets (Hansson & Rasmussen, 2010; Latner & Stunkard, 2003). The current findings revealed the same results, with the difference being that the evaluators were not children, but rather, college students. This indicates that antifat prejudice toward children is pervasive not only in the children's peers, but also in their superiors.

The current study's findings also underscore that high vs. low antifat attitudes, as well as context, influence the way in which an obese target is derogated. For subjects with low antifat attitudes, the fact that the activity condition was a factor in their evaluation of the obese target means that those who



may not actually have high antifat prejudice may rely on context to form judgments toward overweight or obese children. In this case, obese targets in a condition associated with laziness are perceived more negatively, possibly due to the confirmation of a common stereotype in which obesity is associated with being lazy (Larkin & Pines, 1979). However, in an active, sports-related context, people with low antifat attitudes evaluated the obese target positively. These findings could be due to a phenomenon termed as stereotype shift, which is a stereotype-based shift in the judgment of a target (Biernat, Manis & Nelson, 1991).

The stereotype shift theory outlines the tendency for individuals' subjective standards of a targeted social group to adjust during evaluation (Biernat, Manis & Nelson, 1991). An example of this would be the shifting of one's standards when considering a height that is considered short for women vs. one that is considered short for men. In terms of this study, subjective evaluations of the obese target by those with low antifat attitudes could be influenced by a stereotype shift due to context, or activity condition. When an obese target plays videogames, he fits the "lazy" stereotype, which conflicts with the Protestant Work Ethic, and he is subsequently judged in a negative manner. However, when this target is involved in sports and perceived in an active context, it may allow for evaluators to shift their standards of the obese target and judge him more positively because he participates in an activity that does not correspond with widely accepted overweight stereotypes. For people with high antifat attitudes, their high bias may prevent the activity-related context from being influential in

their evaluation of the obese target; thus their evaluation of him could be based solely on weight-based stereotypes and negative perceptions. Research supporting the presence of a stereotype shift explains the findings of the current study and the tendency to adjust their preexisting standards of overweight stereotypes to fit the context of the situation when they do not already have high antifat bias.

Another explanation for the propensity of activity context to influence those with low antifat attitudes is the subjects' attributional social ideologies (Crandall & Martinez, 1996), which could ultimately affect their attitudes toward the obese target. In accordance with this theory, the activity condition influences evaluators' judgments about the extent to which the obese target is responsible for his weight. In the videogame condition, the obese target is viewed in a "lazy" context and could therefore be held responsible for his weight and met with anger, blame, and stigmatization (Crandall & Martinez, 1996). However, in the soccer condition, the same target could be perceived as less responsible for his weight because he is active, and therefore met with sympathy, pity, and little blame (Crandall & Martinez, 1996). This theory offers another perspective for the outcomes of the current study, and why evaluations of the obese target by people with low antifat attitudes could have been swayed due to the background information, and its association with fitness vs. laziness. Once again, evaluations of the obese target may not be capable of impact from the context of activity for those with high antifat attitudes, and their judgments are likely to be less flexible than those with low antifat prejudice.

The current study's findings are notable for reasons involving prejudice toward obese individuals as a whole, and especially obese children. The implications of these results are salient and important to consider because overweight and obese children make up over 30% of our country's childhood population today ("Let's Move!", 2013). The negative evaluations of the obese child compared to the average-weight child indicate prejudice that could reveal itself through discriminatory behavior. Pertaining to children, this prejudice is especially concerning in an educational context; much of children's social lives revolve around school, and it can affect their psychological, (Ashmore, Friedman, Reichmann & Musante, 2007) physical (Puhl & Heuer, 2009), and social-emotional health (Crosnoe & Muller, 2004; Latner & Stunkard, 2003), as well as their academics and feelings of self-efficacy (Krukowski, West, Perez, Bursac, Phillips & Raczynski, 2009).

Results highlight the inclination for individuals to evaluate obese children more negatively than average-weight children. Additionally, they underscore the role that high or low antifat attitudes play in forming judgments, as well as the influence of context on these evaluations. In a school setting, judgments made about students based on their weight could affect them in several ways. Obese children already face threats to their physical health, as well as threats of mental health risks involved with the emotional and psychological effects of weight-based stigma (Ashmore, Friedman, Reichmann & Musante, 2007; Friedman et al., 2005; Puhl & Heuer, 2009), which have their own impact on children's abilities to focus and perform in school. However, in addition to these adverse effects,

overweight or obese children also experience weight-based teasing in the school setting from their peers (Puhl & Brownell, 2002) and may even experience antifat prejudice from teachers and staff. Antifat prejudice in educators leads targeted students down a slippery slope, as it could alter the way children are perceived as students and ultimately affect their overall academic competence.

As expressed in Rosenthal's study entitled *Pygmalion in the Classroom* (1968), expectations of students in the academic setting can influence their actual academic outcomes. The present study indicates that context can affect the way in which obese children are evaluated, either positively or negatively (for individuals with low antifat attitudes). Therefore, if educators evaluate obese children in stereotype-confirming situations, it could lead to negative judgments and lower expectations for these students. This, in turn, predisposes obese students to a self-fulfilling prophecy in terms of their academic capabilities, thus affecting their actual performance in school. As for those with high antifat attitudes, their negative perceptions of obese children as a whole can induce the same effect on these children. These implications suggest that weight could be an influential factor in obese students' academic success, and obese children may be more at risk as students than their nonobese counterparts.

The current study also highlights the influence that high or low antifat attitudes in teachers can have on how children are perceived and treated as students. Educators with low antifat attitudes could evaluate overweight students who are disciplined and hard-working very positively and treat them according to these perceptions. However, overweight students who are less self-disciplined and

less motivated could be evaluated negatively, harming them (and their academics) even more. These findings suggest that although educators with high antifat attitudes may not be ideal, the tendency for the judgments of those with low antifat attitudes to be influenced by context and background may also be detrimental to obese students' well-being and academic success.

### **Limitations**

One specific limitation to this study involves the failure to use more than one photo of an obese target. Because there was only one photo in the obese viewing condition, responses could have been biased toward or against the particular target child in the photo. However, in an effort to control for variability between the obese target and the average-weight target, weight loss before and after photos were searched for on the Internet. It proved to be a difficult task to find two pictures of a child who did not portray high variability in his facial expressions and perceived emotion, posing a challenge to the possibility of using more than one photo in each condition.

Additionally, a pretest was not carried out to ensure that attractiveness was not a confounding factor in the evaluation of the target. Therefore, the obese target could have been overwhelmingly judged as unattractive and evaluated negatively because of this confound. There is a counterargument to this, however, which past research highlights. Studies investigating the link between attractiveness and obesity indicate that obese individuals are perceived as less attractive than nonobese individuals (Clayson & Klassen, 1989; Hovarth, 1979; Singh & Young, 1995). Hence, the perceived attractiveness of the obese target

could have been an influential factor in evaluations regardless of the obese target child chosen for the photo.

Another limitation to this study could be the lack of diversity in the BMIs of the sample. This factor could have an impact on the findings because they do not generalize to the average population. It is possible that subjects' attitudes would be more positive in a more diverse sample with higher exposure to overweight individuals. However, the findings of this study indicate that there is no significant correlation between BMI and antifat attitudes. Future research should examine the relationship of these factors more closely.

There is also a limitation to this study regarding the dichotomization of a scale measurement. The antifat attitudes questionnaire is a scale measurement, but this scale was dichotomized to either having high or low antifat attitudes so as to allow for results to increase in significance. This is a limitation in that individuals do not simply have either high or low antifat attitudes, and one could possibly be approaching the other. However, if this is the case, it is unknown due to the median split and dichotomization of the scale. With additional training in advanced statistical analysis techniques, I am aware that I could run a regression with an interaction term, thereby maintaining the continuous nature of the antifat attitudes scale.

### **Future Directions**

The findings of the present study highlight areas for future research. It is significant that high vs. low antifat attitudes influence evaluations of obese

children in varying contexts, and these results encourage further investigation of this pervasive topic.

One element to consider in future research would be the examination of factors that may play a role in antifat attitude development. Factors such as exposure to obese individuals, past experiences with obese peoples, or internalized ideals such as the Protestant Work Ethic could affect the amount of prejudice one has toward overweight individuals. Furthermore, if these factors are investigated and possibly targeted, additional research can be carried out to explore how this prejudice can be decreased or altered.

Another direction that future research could go is toward peer evaluation of an obese target. Children who are similar in age to the target child could complete the same study, and their evaluations could be compared to those of this study's college sample. This could shed some light on the age at which this prejudice may begin to appear, as well as when antifat attitudes begin to develop and play a role in one's judgment of an overweight target. In addition, children would be a salient focus because stigmatization from peers could lead to isolation and social, psychological, and emotional consequences, which could ultimately take a toll on one's academic competence.

In the present study, obese and average-weight targets were evaluated based on a photo and description. This methodology could be taken one step further in future studies by examining whether antifat prejudice carries over to actual treatment of and behavior toward obese children vs. average-weight children. This would involve a subject engaging in either a sport or a videogame

with a target child. Authentic interactions between subjects and the target child could be observed and recorded to examine behavior variance between conditions. Subjects could also rate children on traits, similar to the present study, following their interaction with him. This research could answer questions about the type of behavior weight-biased individuals engage in when they are faced with an overweight person, as well as how antifat attitudes may moderate behavior outcomes. In addition, a school-related activity condition, such as doing homework with an obese or average-weight child could also be added to investigate how one might behave in an academic context with an obese child.

Finally, to further explore how weight-based stigma could affect perceptions of children's academic competence, a study similar to Darley and Gross's famous "Hannah Study" (1983) could be performed. In this study, subjects would view either an obese child or an average-weight control child taking a written test, and rate the child's academic abilities as well as indicate how well they thought the child did on the examination. Internalized ideals could possibly play a role in participants' assessment of the test-taker. For example, if evaluators idealize the Protestant Work Ethic, they may judge the child's laziness responsible for being overweight, and thus have lower academic expectations for him/her than for a child who is not overweight. A study like this would provide direct insight into how a child's weight alone can influence outsiders' academic expectancies of that child.



## **Conclusion**

Clearly, the present study's findings indicate the impact that weight-based stigma and bias can have on individuals' social, emotional, physical, and psychological health, as well as their academic competence. These findings accentuate how vital it is for those who are overweight, especially children, to be recognized as vulnerable and at-risk of these health- and academic-related consequences. The focus of this study can hopefully raise readers' awareness of the pervasiveness of this stigma, and encourage them to develop a higher consciousness of the way in which they perceive children based on their weight. It also highlights that even slight or subconscious antifat attitudes can have an affect on impressions and corresponding behavior, so it is important to be hyper-aware of these weight-based stereotypes and their influence on the way an obese target is perceived.

Weight-based stigma is a pervasive, and oftentimes harmful issue when it comes to children. At their young age, children are especially sensitive to weight-based ridicule, prejudice, and even discrimination. As obesity rates rise in our country, so do the stereotypes and negative associations with it. Along with these rises, the age at which children are becoming weight-conscious and aware of the stigma associated with being overweight is decreasing. According to Katia Hetter of CNN, children as young as three years old worry about becoming fat, and elementary school students call each other fat as a put-down ("CNN Living", 2012). If this weight-based bias is prevalent in children's superiors in addition to their peers, they are faced with even more of a day-to-day challenge compared to

their average-weight counterparts; and although it may not seem obvious from the outside, children are alert and quite responsive to prejudice and discrimination due to their weight. Indeed, the various effects of antifat bias at a young age are harmful and concerning, and it is for this reason that weight-based stigma and its effects should be explored more profoundly in future research.

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## Appendix A

## Photos

Participants viewed one of the four pictures below. One represents a boy of average weight, while the other represents an obese boy. Pictures of a videogame or soccer ball were inserted to increase salience of the activity condition. Photos were found on a weight loss camp website called *campjumpstart.com* and are before and after shots of a boy who went to the camp.



## Appendix B

## Vignettes

Participants read one of the two vignettes below, which accompanied the picture that they viewed.

Vignette 1: This is Joe. His favorite color is blue and he has a dog named Rex. In his free time, he enjoys playing video games and watching television. His favorite television show is Survivor. Joe is thirteen years old.

Vignette 2: This is Joe. His favorite color is blue and he has a dog named Rex. In his free time, he enjoys playing sports and partaking in outdoor activities. His favorite sport is soccer. Joe is thirteen years old.

## Appendix C

## Trait Ratings

Participants indicated the amount that they perceived each trait applying to Joe by rating each item on a 1-7 semantic differential scale.

<b>Dumb</b>	1	2	3	4	5	6	7	<b>Smart</b>
<b>Untrustworthy</b>	1	2	3	4	5	6	7	<b>Trustworthy</b>
<b>Unkind</b>	1	2	3	4	5	6	7	<b>Kind</b>
<b>Bad</b>	1	2	3	4	5	6	7	<b>Good</b>
<b>Disloyal</b>	1	2	3	4	5	6	7	<b>Loyal</b>
<b>Dishonest</b>	1	2	3	4	5	6	7	<b>Honest</b>
<b>Unassertive</b>	1	2	3	4	5	6	7	<b>Assertive</b>
<b>Reckless</b>	1	2	3	4	5	6	7	<b>Cautious</b>
<b>Unintelligent</b>	1	2	3	4	5	6	7	<b>Intelligent</b>
<b>Shy</b>	1	2	3	4	5	6	7	<b>Outgoing</b>
<b>Stubborn</b>	1	2	3	4	5	6	7	<b>Flexible</b>
<b>Impulsive</b>	1	2	3	4	5	6	7	<b>Controlled</b>
<b>Organized</b>	1	2	3	4	5	6	7	<b>Disorganized</b>
<b>Athletic</b>	1	2	3	4	5	6	7	<b>Non-athletic</b>
<b>Active</b>	1	2	3	4	5	6	7	<b>Lazy</b>
<b>Poor</b>	1	2	3	4	5	6	7	<b>Wealthy</b>
<b>Well-behaved</b>	1	2	3	4	5	6	7	<b>Troublesome</b>

## Appendix D

## Antifat Attitudes Questionnaire

After viewing the photo and reading the vignette about Joe, and after completing the filler task, participants completed a questionnaire containing these items, basing their answers on a 0-7 Likert-type scale (Crandall, 1994). Items are divided into three categories of measurement: their dislike of fat people, their own personal fear of becoming fat, and their perception of the willpower of fat people in terms of controlling their weight.

## Dislike:

I don't really like fat people much.

I don't have many friends who are fat.

I tend to think that people who are overweight are a little untrustworthy.

Although some fat people are surely smart, in general, I think they tend not to be quite as bright as normal people.

I have a hard time taking fat people too seriously.

Fat people make me feel somewhat uncomfortable.

If I were an employer looking to hire, I might avoid hiring a fat person.

## Fear of fat:

I feel disgusted when I gain weight.

One of the worst things that could happen to me would be if I gained 25 pounds.

I worry about becoming fat.

## Willpower:

People who weigh too much could lose at least some part of their weight through a little exercise.

Some people are fat because they have no willpower.

Fat people tend to be fat pretty much through their own fault.