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Social Influences and Social Desirability on Recollections of Childhood Bullying

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Social Influences and Social Desirability on Recollections of Childhood Bullying

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Abstract

Parents and peers play important roles in shaping attitudes toward a variety of matters during adolescence. However, little research has investigated parental and peer influence on developing attitudes toward bullying. Further, few studies have looked at whether socially desirable responding (SDR) impacts self-reports in bullying research. To address these gaps in literature, the current study recruited college students from a mid-sized public university in the Rocky Mountain region of the United States to complete a survey. The survey assessed the participants' past attitudes toward bullying, perceptions of their parents' and peers' influence on their attitudes, and bullying participant roles during their 7th and 8th grade years. The survey also assessed participants' tendencies to respond in socially desirable ways. Results indicated that while participants reported both their parents and peers as significantly influential on their past attitudes, they perceived their parents as more influential and the two sources of influence were found to interact with one another. This interaction revealed that when parental influence is low, stronger peer influence is associated with weaker anti-bullying attitudes. Finally, a significant relationship between SDR and bully-victims were found, but results did not show that SDR was related to participants' past attitudes or that bullying participant roles acted as a significant moderator. Implications, limitations, and future directions were discussed as well.

Social Influences and Social Desirability on Recollections of Childhood Bullying

Chapter I: Introduction

Recent research suggests that interventions designed to reduce bullying within schools may only produce modest reductions and that the reductions may not be sustained over time (e.g., Cantone et al., 2015; Gaffney et al., 2018; Zych et al., 2015). To increase the efficacy of intervention designs, researchers need to gain a greater understanding of the dynamics underlying bullying. One potentially informative area of research is the influence parents and peers have on adolescents' attitudes toward bullying. For example, it is generally accepted that parents and peers both exert significant influence in adolescents' lives (Brauer & De Coster, 2012), but it is unclear the degree to which either party influences attitudes toward bullying. In a study investigating adolescents' perceptions of their parents' and peers' influence on their attitudes about a range of issues (e.g., curfew, fashion, dating), it was found that both groups were significantly influential but for different issues (Daddis, 2008). However, attitudes related to aggression or bullying were examined. To address this gap in the literature, one aim of the current study was to examine the influence parents and peers have on attitudes toward bullying during adolescence.

In addition to parental and peer influence, social desirability may be another important factor in bullying studies that use self-reports. Although socially desirable responding (SDR) is a well-known phenomenon in social science research, its actual measurement may be underutilized. For example, when van de Mortel (2008) examined 14,275 studies published between 2004 and 2005 that used self-reports, it was found that only 31 studies (.2%) measured SDR. Further, of the 31 studies that did assess for SDR, 43% found that SDR significantly influenced their results. Van de Mortel (2008) suggested that the likelihood of SDR impacting a

study's results depends on the degree to which the questionnaire items are regarded as socially sensitive and, likewise, that questionnaires containing sensitive items should assess for SDR. Although previous research has demonstrated that SDR plays a significant role when reporting some aggressive acts, such as intimate partner violence (Henning et al., 2005), its impact on bullying attitudes and behaviors is relatively unexplored. In response, another aim of the current study was to explore the influence that social desirability has on bullying questionnaires.

Review of Literature

Definition of Bullying

Various studies have shown that parents (Smorti et al., 2003), students (Boulton et al., 1999), and teachers (Naylor et al., 2006) all conceptualize bullying in slightly different ways; however, researchers often utilize a definition developed by Olweus in the 1980s when designing bullying studies. Olweus (1993a) stated that bullying is generally characterized by repetitive, intentional, negative actions directed toward an individual by another individual, or sometimes a group, who enjoy a power differential over the victim. Further, Olweus (1993a) explained that the negative actions could be either direct or indirect depending on whether they were openly displayed (e.g., physical attacks) or covertly executed (e.g., social exclusion).

In addition to categorizing bullying as direct or indirect, researchers have also classified acts of bullying according to the method used to harm the victim (i.e., physical, verbal, or relational methods). Perhaps the most well-known subtype is physical bullying which involves negative actions intended to cause bodily harm or threats of such actions (e.g., tripping and hitting; Olweus, 1993a). On the other hand, verbal bullying involves negative communication intended to cause emotional or psychological harm (e.g., name-calling, teasing, taunting; Olweus, 1993a). Lastly, relational bullying involves the manipulation, or threat of manipulation,

to victims' social relationships with the intent to damage their reputations or social connections (Crick et al., 2001).

In the past couple of decades, researchers have also suggested that bullying can be categorized according to whether it occurs on or offline. Some researchers have argued that cyberbullying is like any other form of bullying in that it involves negative and repetitive actions intended to harm the victim, but that it is unique in that it uses technology to commit these acts of aggression (Nocentini et al., 2010). At the same time, other researchers have proposed that cyberbullying is quite different from traditional conceptualizations of bullying. For example, Li and colleagues (2012) proposed several additional characteristics of cyberbullying that set it apart, including that cyberbullying requires knowledge of technology, can be done anonymously, can reach a wider audience, is mainly an indirect incident for participants, and may be harder for victims to escape from. Importantly, the researchers added that cyberbullying can create permanent products (e.g., images, videos, and email chains) that repeatedly harm the victims without the bullies having to engage in repetitive aggressive acts themselves.

Bullying Prevalence

Many researchers have attempted to gauge the prevalence of bullying. However, inconsistent definitions of bullying, variations in methodology, and different samples have resulted in estimates of 4.6% (Solberg & Olweus, 2003) to 8% (Bradshaw et al., 2007) of participants in samples of students engaging in frequent bullying (i.e., two or more times a month). Additionally, rates may vary by gender and stage of development. In past studies, boys have been found to be bullies, victims, and bully-victims at higher rates than girls (Nansel et al., 2001; Olweus, 1993a; Solberg & Olweus, 2003), and bullying tends to peak in middle school while declining throughout high school (Rigby & Slee, 1991).

Bullying Participant Roles

Bullying is considered a group process that extends beyond the bully-victim dyad to include a multitude of distinct roles. Salmivalli and colleagues (1996) described six particular ways students could behave in bullying situations, aptly called participant roles. The six roles include: "bullies" who initiate the bullying behaviors, "assistants" who help the bullies, "reinforcers" who encourage the bullying, "defenders" who act to help the victim, "outsiders" who try not to get involved, and "victims" who are the targets of the bullying behavior (Salmivalli et al., 1996). In their study involving 573 adolescents, they found that 87% of participants could be assigned a distinct role with 11.7% being victims, 8.2% bullies, 19.5% reinforcers, 6.8% assistants, 17.3% defenders, and 23.7% outsiders (Salmivalli et al., 1996). Another study, using Salmivalli and colleagues' (1996) categorization methods, found participant rates of 10.1% being victims, 8.7% bullies, 12% reinforcers, 12.1% assistants, 18.9% defenders, and 24.1% outsiders (Pouwels et al., 2016).

Important caveats when considering participants roles include the fact that some research indicates that the aggressive roles (i.e., bullies, reinforcers, and assistants) may not be statistically distinct from one another (Sutton & Smith, 1999) and that certain students are both simultaneously bullies and victims, sometimes referred to as "bully-victims" (Solberg & Olweus, 2003). This combined bully-victim role has been found to differ from the pure bully or victim roles in significant ways. For example, one study found bully-victims tend to be more aggressive than pure bullies, pure victims, and uninvolved students (Salmivalli & Nieminen, 2002).

Effects of Bullying

Numerous studies have established that involvement in bullying is associated with negative outcomes (e.g., Zych et al., 2015). For example, a meta-analysis of 165 studies revealed

that victimization was significantly associated with internalizing symptoms (e.g., depression and anxiety), poor physical health (e.g., headaches, backaches, and stomachaches), substance use, and suicidality (Moore et al., 2017). Another study found that for high school students, victimization was related to greater alcohol consumption and difficulty forming friendships (Nansel et al., 2001). Furthermore, researchers have found that outcomes associated with victimization tend to be dose-dependent, such that stronger effects are found for subgroups of participants who report being "frequently bullied" (Pooled OR = 3.26, $p < .001$) compared to "sometimes bullied" (Pooled OR = 1.78, $p < .001$; Moore et al., 2017). In addition, when researchers conducted a meta-analysis of 16 quasi-experimental studies to determine the causal relationships between victimization and outcomes, they found that victimization had small causal effects on outcomes, particularly for internalizing symptoms (Schoeler et al., 2018). Studies have also found that involvement in bullying as an aggressor is positively associated with fighting, disciplinary referrals, alcohol use, smoking, and loneliness but negatively associated with academic achievement, school attendance, perceptions of school climate, and quality of friendships (Feldman et al., 2014; Nansel et al., 2001).

Attitudes Toward Bullying

Research shows that students, particularly girls, tend to report that bullying is wrong and supporting victims is good (Boulton et al., 1999; Pouwels et al., 2017; Rigby & Johnson, 2006). In other words, students generally report holding pro-social and anti-bullying attitudes. However, when attitudes are examined by participant roles, research suggests that different roles are associated with different attitudes. Previous research has shown that bullies tend to report weaker anti-bullying attitudes than non-aggressors (Boulton et al., 1999; Boulton et al., 2002). Similarly, Salmivalli and Voeten (2004) found that bullies, assistants, and reinforcers all reported more

supportive attitudes toward bullying, whereas defenders and outsiders reported being against

bullying. Moreover, research suggests that individuals' attitudes toward bullying can predict

their concurrent behavior (Boulton et al., 1999; Cohen & Prinstein, 2006; Eslea & Smith, 2000).

Taken together, past literature suggests that students' attitudes toward bullying likely relates to

the roles they adopt during incidences of bullying.

However, the significance and strength of the attitude-behavior relationship varies

considerably from study to study (e.g., Boulton et al., 2002; Eliot & Cornell, 2009; van Goethem

et al., 2010) depending on the researchers' definitions of attitudes, definitions of bullying, and

methodological variations in determining roles and rates of bullying (e.g., self-reports, teacher

reports, or peer-nominations). Additionally, individuals' attitudes are not likely the sole

determinants of their actual behavior. Other factors such as social ecology likely play a role. For

instance, Scholte and colleagues (2010) investigated classroom factors and individual

characteristics of 2,547 early adolescents and found that classroom attitudes toward bullying and

levels of classroom bullying were significantly associated with participants' bullying behaviors,

even after controlling for participants' personal attitudes toward bullying, genders, social

preferences, and reciprocal friendships. Similarly, Salmivalli and Voeten (2004) found that when

classroom norms did not support anti-bullying behaviors (e.g., defending), students were less

likely to defend victims despite reporting privately held anti-bullying attitudes.

Social Influences

Research examining parental and peer influence on attitudes during adolescence has more

broadly looked at anti-social behavior and delinquency rather than bullying specifically. For

example, research indicates that as adolescents age, they report relying more heavily on parents

than peers to abstain from anti-social acts (Cook et al., 2009). In contrast, the choice to partake in

anti-social acts appears particularly susceptible to peer influence as adolescents' own attitudes

become increasingly positive toward engaging in anti-social activities with age (Berndt, 1979).

Parent Influence

Research demonstrates that parental involvement boosts the effectiveness of anti-bullying

interventions (e.g., lower reported rates of bullying; Ttofi & Farrington, 2011) which suggests

that parents have the power to influence their children's bullying attitudes and behaviors.

However, the mechanisms underpinning how parents influence their children's attitudes and

behaviors are unclear (Gaffney et al., 2018). For example, parental influence may work through

modeling the use of aggression at home which is partially supported by research that has linked

the use of physical discipline at home with greater levels of bullying behavior (Espelage et al.,

2000). On the other hand, direct parental communication about bullying may also shape

children's attitudes and behaviors; frequent parent-child communication about bullying has been

found to be negatively associated with engagement in bullying (Nocentini et al., 2019).

Furthermore, the specific messages passed from parents to children during exchanges about

bullying have shown to be related to subsequent bullying behavior. In one study, caregivers'

advice about how to respond to bullying predicted preadolescents' behaviors such that advice to

intervene predicted intervention and advice to stay uninvolved predicted passivity (Grassetti et

al., 2018). Another study revealed that receiving fewer messages from adults about how to

resolve conflicts nonviolently significantly predicted greater bullying behavior (Espelage et al.,

2000). Lastly, the threat of punishment from parents has been shown to be a deterrent to bullying

behavior (Patchin & Hinduja, 2018).

Peer Influence

 Given that bullying has been conceptualized as a group process (Salmivalli et al., 1996),

peers are likely influential in shaping adolescents' attitudes and behaviors. Espelage and

colleagues (2000) conducted a study involving a 6th – 8th grade middle school and found that

bullying increased throughout 6th grade until it approached similar levels seen in the 7th and 8th

grades. The researchers speculated that the rise in bullying was due to the 6th grade cohort

determining their new social hierarchy upon entering middle school. Additionally, the

researchers suggested that the 6th graders learned the social norms and attitudes related to

bullying from older peers. Along similar lines, other researchers have suggested that adolescents'

attitudes and behaviors are shaped through socialization processes. For example, while bullies

and defenders tend to befriend adolescents who behave like themselves in the first place (i.e., the

selection effect), friendships also significantly influence adolescents' behaviors over time (i.e.,

the socialization effect; Sijtsema et al., 2014). Similarly, studies have shown that when

adolescents include pro-bullying peers in their social groups, they are more likely to adopt pro-

bullying attitudes or engage in bullying themselves (Doehne et al., 2018; Espelage et al., 2000;

Sijtsema et al., 2014). Perceived peer pressure to intervene on behalf of a victim has been shown

to positively predict adolescents' defending behavior as well, even more so than their personal

characteristics (e.g., age, gender, and previous bullying behavior; Pozzoli & Gini, 2010).

 When all the evidence is considered, it suggests that both parents and peers are likely

influential in shaping adolescents' attitudes and behaviors related to bullying. However, like

Cook and colleagues (2009) concluded, the strength of parental and peer influences likely

depends on individual characteristics and the type of behavior in question. Phrased another way,

parental and peer influence may have different effects depending on if the behavior of interest is

pro-social (e.g., defending a victim), anti-social (e.g., bullying a peer), encouraged (e.g., advice to intervene), or discouraged (e.g., threat of punishment for bullying). Additionally, the characteristics of the adolescents may also be important (e.g., age, gender, or participant role). Thus, the current study aimed to clarify the salient factors associated with parental and peer influence.

Social Desirability

Definition of Social Desirability

Social desirability most commonly refers to people's need for the social approval of others (Crowne & Marlowe, 1960). Relatedly, theories suggest that SDR is a type of response bias driven by that need and is characterized by responses to questionnaire items that are socially acceptable but not necessarily accurate (Crowne & Marlowe, 1960). Researchers have proposed that people engage in SDR because of two main reasons: impression management (i.e., the conscious manipulation of responses to create a positive image of one's self) and self-deception (i.e., unconsciously held self-biased beliefs; Zerbe & Paulhus,1987). Either way, it is theorized that SDR creates inaccurate self-reports and can pose problems for researchers when not addressed because it can create artificial or inaccurate relationships between variables (van de Mortel, 2008; Zerbe & Paulhus, 1987). Fortunately, scales to assess SDR have been developed which can help detect and manage its influence in studies using self-reports that tap into socially sensitive constructs, such as bullying (van de Mortel, 2008).

Social Desirability and Bullying Research

Previous research on self-reported aggressive attitudes and behavior, although not specifically about bullying, have demonstrated consistently negative associations between scores on social desirability scales and admittance of holding aggressive beliefs or engaging in

aggressive acts (Henning et al., 2005; Straus, 2004). Specifically, Henning and colleagues (2005) found that using a 14-item scale, with 0 representing very low tendencies toward responding in socially desirable ways, and 14 indicating strong tendencies, convicted offenders of domestic abuse averaged ratings of 10.6 and 10.9 for male and female participants, respectively. Henning and colleagues (2005) concluded that the self-reports provided by the participants were significantly affected by their desires to create positive images of themselves. In another study that examined the self-reported prevalence rates of physical assaults and injuries among university students, it was found that higher SDR scores were consistently associated with lower reported prevalence rates of committing or experiencing acts of aggression (Straus, 2004). Considering findings such as these, social desirability may play a role in self-reported bullying attitudes and behaviors as well, which has been conceptualized as a type of aggression (Olweus, 1993a).

Despite bullying being a well-known undesirable behavior (Sutton et al., 1999), there is a relative lack of bullying research that assesses for SDR. Furthermore, the findings that do exist do not paint a clear picture of how pervasive or serious a problem SDR is in bullying research. For example, one study found that participants who reported anti-bullying attitudes tended to respond in socially desirable ways, but the study only included a small sample of male high school football players (Steinfeldt et al., 2012). Other findings also indicate that girls may be more inclined to report socially desirable responses (Camerini & Schulz, 2018; Ivarsson et al., 2005). Still, other research has found that social desirability is not associated with self-reports of bullying involvement at all (Peters & Bain, 2011). Nonetheless, in general, findings suggest that bullying may be a socially sensitive topic and that not all participants report their involvement or attitudes accurately. For instance, Cornell and Brockenbrough (2004) found that according to

self-reports, only 3.6% of participants could be classified as bullies, whereas according to peer

reports, 36% of participants qualified as bullies. Similarly, when Sutton and Smith (1999)

categorized students into participant roles based on both self- and peer-nominations, they found a

disagreement rate of 70%. Specifically, they found that students who were nominated by peers as

bullies, reinforcers, assistants, or outsiders were most likely to self-nominate themselves as

defenders. However, peer-nominated defenders and victims were most likely to self-nominate

themselves as defenders and victims, respectively. Both teams of researchers proposed that social

desirability may influence bullying research and that the usefulness of self-nominations in

studies depends on participants honestly reporting their engagement in bullying or victimization.

Social Desirability and Participant Roles

Previous studies have shown that the different participant roles vary in personal

characteristics, such as sensitivity to punishment and reward (Pronk et al., 2014), the Big Five

personality traits (Tani et al., 2003), leadership abilities (Pouwels et al., 2016), and drive for

social dominance (Olthof et al., 2011). Therefore, different participant roles may be differentially

inclined to SDR as well. Findings most strongly suggest potential associations between SDR and

the bully and defender roles. Camerini and Schulz (2018) examined SDR's impact on children's

self-reported negative peer interactions (e.g., bullying and social exclusion) and found that while

SDR only explained 1% of the variance in self-reported victimization, it explained 22% of the

variance in self-reported perpetration of negative acts. Similarly, Ivarsson and colleagues (2005)

found that pure bullies and bully-victims tended to have significantly higher SDR scores

compared to pure victims and uninvolved participants. In general, findings suggest that

participants who engage in aggressive acts tend to score highly on social desirability scales (also

see Henning et al., 2005; Straus, 2004). Similarly, self-reported intentions to defend have been found to positively correlate with SDR as well (Oh & Hazler, 2009; Rigby & Johnson, 2006).

Accuracy of Retrospective Research

Although the accuracy and reliability of long-term recall have been called into question due to the fallibility of human memory, many studies have nonetheless relied on retrospective methods to gather data on bullying. These studies have asked participants to recall their past experiences with childhood bullying anywhere from months past the occurrences in samples of minor students (e.g., Demaray et al., 2013; Sutton & Smith, 1999) to decades past in samples of adults (e.g., Carlisle & Rofes, 2007; Cooper & Nickerson, 2013). Evidence gleaned from such retrospective studies indicate that children and adults alike can recall their bullying experiences with some degree of accuracy and reliability. For example, Olweus (1993b) found that adult participants' self-reports of victimization at age 16 correlated significantly ($r = .58$) with their past peers' nominations. This finding is telling given that research shows that students' concurrent self-identification of victimization only agrees with peer nominations 45.3% of the time despite there being relatively little delay in recall. In addition, when Cooper and Nickerson (2013) asked parents, predominately ages 41 – 50, to recall their personal experiences with bullying throughout kindergarten and high school, they found that 90.3% could recall incidents of bullying during their youth. Furthermore, the researchers found that 34.5% of parent participants identified themselves as past outsiders, 38.2% as victims, and 17.6% as either pure bullies or bully-victims, with most of their experiences occurring during middle school. These results suggest some degree of accuracy as prevalence rates estimated from students' concurrent reports indicate similar trends with peak bullying rates occurring in middle school (Rigby & Slee, 1991) and students more readily identifying themselves as outsiders or victims rather than

bullies (Sutton & Smith, 1999). Lastly, Rivers (2001) demonstrated that adults' memories of

bullying were reported with relative consistency after a 12 – 14 month gap between

recollections, which supports the notion that adults can consistently recall their experiences

related to bullying, even years after they occur.

In contrast to research on retrospective accounts of bullying experiences, far less research

exists to indicate whether adults can accurately recall their past attitudes toward bullying.

Nevertheless, existing retrospective attitudinal research about other topics may provide valuable

insight. For instance, Jaspers and colleagues (2009) compared several hundred adult participants'

recalled attitudes toward euthanasia, sexuality, and ethnic minorities in 2006 to their originally

reported attitudes in 1995 and found that participants were able to recall their original attitudes

10 years later with decent accuracy when aggregated. In particular, participants were better at

recalling their original attitudes toward euthanasia (original $M = .15$, $SD = .35$ vs recalled

attitudes $M = .18$, $SD = .38$) and sexuality (original $M = 2.52$, $SD = 1.07$ vs recalled attitudes M

$= 2.55$, $SD = 1.07$) compared to ethnic minorities (original $M = 2.67$, $SD = .79$ vs recalled

attitudes $M = 3.05$, $SD = .86$), which the researchers suggested were affected by the participants'

current attitudes toward ethnic minorities. Similarly, when Powers and colleagues (1978) asked

participants about their attitudes toward life values and annuities, they found that participants

could recall their past responses perfectly 43% and 52% of the time, respectively. Moreover, the

researchers examined if participants' aggregated original attitudes and recalled attitudes would

correlate differently with measures of self-esteem and life satisfaction. Interestingly, they found

that the correlations did not differ significantly when they used the aggregated original attitudes

versus the recalled attitudes (Powers et al., 1978). Powers and colleagues concluded that

aggregated recalled attitudes could be used just as well as originally reported attitudes for

correlational research. In summary, evidence suggests that adults may be able to accurately and

reliably report both their experiences and attitudes related to bullying, at least as far back as their

middle school years. Nevertheless, the possible limitations caused by the retrospective design of

this study are recognized.

Rationale and Purpose

Previous research suggests that parents and peers influence adolescents' attitudes

regarding a variety of topics (Daddis, 2008), although the extent to which they may shape

attitudes toward bullying is relatively unexplored. In response to this gap in knowledge, one

purpose of this study was to concurrently investigate participants' recollections of the influence

their parents and peers had on their attitudes toward bullying in grades 7 and 8. Not only did this

investigation add to knowledge about the social forces that shape bullying attitudes, but the

specific methods used in this study allowed for direct comparisons between parents' influence

and peers' influence. Given that previous research suggests a moderate connection between

attitudes toward bullying and one's behavior during incidents of bullying (Salmivalli & Voeten,

2004), the exploration of the forces that contribute to attitudes provides critical insight for those

attempting to curb bullying.

Additionally, this study added to the sparse literature that exists about the impact SDR

has on bullying research. Specifically, this study investigated the extent to which SDR affected

self-reports and if there were SDR trends by participant roles. Given that previous research

indicates different participant roles have unique psychological profiles (e.g., Tani et al., 2003), it

was hypothesized that the roles may also differ in their tendencies to respond in socially

desirable ways. It is hoped that results from this study help guide future research designs and

assist in the accurate interpretations of research findings.

Research Questions and Hypotheses

Parental Influences on Attitudes

Research Question #1: What is the relationship between Parental Influence and participants'

past Bullying Attitudes?

   Hypothesis 1: The mean level of Parental Influence as measured by the Parental

Influence follow-up items on the Attitudes Towards Bullying scale (ATB; Salmivalli & Voeten,

2004) will indicate that participants perceived their parents as at least a little influential (i.e.,

mean level > 2) on their past attitudes toward bullying as measured by the ATB.

   Evidence suggests that the frequency of parent-child communication about bullying is

negatively related to children's engagement in bullying (Nocentini et al., 2019). Furthermore, the

messages parents convey while talking to their children about bullying also appear to

significantly influence their children's involvement in bullying (Espelage et al., 2000; Grassetti

et al., 2018).

   Hypothesis 2: Mean ratings of Bullying Attitudes, as measured by the ATB, will differ

as a function of the degree to which participants reported their parents as influential on the

Parental Influence follow-up items on the ATB.

   Sparse literature exists to guide the direction of this specific hypothesis, but it is

anticipated that participants who report different levels of parental influence will also report

different attitudes toward bullying. Partial support for this hypothesis can be extrapolated from

findings that have demonstrated that fewer messages from adults who advocate resolving

conflicts nonviolently predict greater bullying behaviors (Espelage et al., 2000). In other words,

children's attitudes regarding the use of aggression (e.g., the utility of bullying to achieve goals)

may differ depending on the degree to which parents are involved in their children's socialization.

Peer Influences on Attitudes

Research Question #2: What is the relationship between Peer Influence and participants' past Bullying Attitudes?

Hypothesis 3: The mean level of Peer Influence as measured by the Peer Influence follow-up items on the ATB will indicate that participants perceived their grade 7 and 8 peers as at least a little influential (i.e., mean level > 2) on their past attitudes toward bullying as measured by the ATB.

Past research indicates that adolescents learn social norms and attitudes related to bullying from peers (Espelage et al., 2000) and that peers can influence an adolescent's involvement in bullying even after the adolescent's own characteristics (e.g., age, gender) have been accounted for (Pozzoli & Gini, 2010).

Hypothesis 4: Mean ratings of Bullying Attitudes, as measured by the ATB, will differ as a function of the degree to which participants reported their grade 7 and 8 peers as influential on the Peer Influence follow-up items on the ATB.

Some evidence supports this predicted relationship between attitudes and perceived influence because peers have been found to be more influential in encouraging anti-social attitudes and behaviors rather than pro-social ones during adolescence (Berndt, 1979). In other words, students who report different types of attitudes have also been found to report different levels of perceived peer pressure.

Parental versus Peer Influences

Research Question #3: How does Parental Influence and Peer Influence differ regarding their

perceived impact on participants' past Bullying Attitudes?

       Hypothesis 5: The mean levels of Parental and Peer Influence, as measured by the

Parental and Peer Influence follow-up items on the ATB, will not be significantly different from

each other.

       Although adolescents have been shown to consistently rely on parents more than peers to

deter anti-social behavior (Cook et al., 2009), adolescents have also been found to increasingly

rely on peers to encourage anti-social behaviors (Berndt, 1979). Given that the ATB includes

both encouragement and discouragement of pro-social and anti-social bullying attitudes and

behaviors, it is expected that endorsements for Parent Influence and Peer Influence will

counteract each other such that neither will be indicated as more influential than the other.

Socially Desirable Responding

Research Question #4: What is the relationship between SDR and Participant Role?

       Hypothesis 6: Mean levels of SDR, as reported on the Social Desirability Scale-17

(SDS-17; Stober, 1999), will significantly differ by Participant Role, which will be determined

using the Participant Role Questionnaire (PRQ; Bushard, 2013) and one item from the Revised

Olweus Bully/Victim Questionnaire (OBVQ; Olweus, 1996).

       Specifically, it is expected that the aggressive roles (i.e., bullies, reinforcers, and

assistants), along with the defending role, will be associated with higher mean levels of SDR.

Evidence that the aggressive roles may have higher levels of SDR comes from Camerini and

Schulz's (2018) study which revealed that SDR explained 22% of the variance in the aggressive

participants' self-reports. Likewise, other studies have shown that reporting intentions to defend are associated with SDR as well (Oh & Hazler, 2009; Rigby & Johnson, 2006).

Research Question #5: What is the relationship between SDR and Bullying Attitudes?

Hypothesis 7: The correlation between SDR from the SDS-17 and Bullying Attitudes from the ATB will be significant.

Given that bullying is a well-known undesirable behavior (Sutton et al., 1999) and that the likelihood of responding in socially desirable ways partially depends on the social sensitivity of a questionnaire (van de Mortel, 2008), it is hypothesized that participants, on average, will report more socially desirable attitudes toward bullying than they may truly hold. For example, even though students tend to report bullying as wrong (Boulton et al., 1999; Pouwels et al., 2017; Rigby & Johnson, 2006), prevalence rates of bullying have been found to be as high as 49% in some samples (Bradshaw et al., 2007). Additionally, when categorizing students into participant roles according to peer reports, 10 times as many can be categorized as bullies compared to when they are categorized by self-reports (Cornell & Brockenbrough, 2004).

Hypothesis 8: The correlation between SDR from the SDS-17 and Bullying Attitudes from the ATB will be moderated by Participant Role as measured by the PRQ and OBVQ.

Previous findings suggest that some participant roles (e.g., bullies, bully-victims, and defenders) are more prone to attuning their self-reports to play down their engagement in undesirable behaviors or play up their desirable behaviors (Ivarsson et al., 2005; Oh & Hazler, 2009; Rigby & Johnson, 2006). As a result, it is anticipated that certain participant roles may also have stronger tendencies to adjust their self-reported attitudes toward bullying to reflect more socially appropriate attitudes.

Chapter II: Method

Participants

Participants were recruited from a mid-sized public university in the Rocky Mountain region of the United States using the university's undergraduate research recruitment system (SONA). Participants were compensated for their participation with research participation credit or extra credit in one of their classes. However, participation in this study was not required by any class as alternative opportunities to earn research participation credit or extra credit were offered by their instructors. Participants of all gender identities and ages over 18 were eligible to participate. No sensitive information (e.g., suicidal ideation) or identifying data (e.g., names) were collected to protect the well-being and anonymity of the participants. The study was approved by the university's Institutional Review Board.

Procedures

The survey was administered remotely using Qualtrics – an online survey platform – and took on average 10 minutes to complete. Prior to beginning the survey, participants were prompted to sign an electronic informed consent form. The informed consent briefly explained the nature of the study, any risks associated with participating, any benefits for participating, and how to contact the principal investigator if they had any questions or concerns following their participation in the study. Once consent was obtained, participants completed a demographics section (see Appendix B), the ATB plus follow-up influence questions (see Appendix C), the combined PRQ and OBVQ scale (see Appendix D), and the SDS-17 scale (see Appendix E).

Measures

Attitudes

Participants' past attitudes toward bullying were assessed using the Attitudes Towards

Bullying scale (ATB; Salmivalli & Voeten, 2004; see Appendix C). This 10-item scale assesses

moral beliefs and evaluations of bullying, such as "bullying is stupid," using a 5-point Likert

scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). To adapt the ATB for

retrospective use, participants were instructed to respond to the items as they would have when

they were in grades 7 and 8. Then, after reverse coding four of the items, higher scores indicated

less favorable past attitudes toward bullying (i.e., anti-bullying attitudes), whereas lower scores

indicated more positive attitudes toward bullying (i.e., pro-bullying attitudes). Previous studies

conducted outside of the United States, but with English-speaking adolescents, have

demonstrated that the ATB has acceptable internal consistency ($\alpha = .75$; Salmivalli & Voeten,

2004; $\alpha = .77$; Pouwels et al., 2017). The ATB was selected for the current study because it could

assess participants' attitudes toward the general concept of bullying, rather than specific acts

(e.g., exclusion) or types of bullying (e.g., cyberbullying), reliably and succinctly. Additionally,

findings from a meta-analysis of 80 studies suggest that using a questionnaire that includes the

word "bully," like the SDS-17, may elicit a stronger SDR effect (Modecki et al., 2014). In the

current study, internal consistency was found to be acceptable ($\alpha = 0.712$) and results showed

that the grand mean for the ATB was 4.34 ($SD = 0.53$).

Influence

To assess participants' recollections of the influence their parents and peers had on their

past attitudes toward bullying, each item from the ATB was followed by two additional

questions (see Appendix C). The first follow-up question was, "How much do you think your

parent/guardian(s) would have influenced your answer to the previous question?" The second

follow-up question was the same except about peers (i.e., the participants' friends), "How much

do you think your friends would have influenced your answer to the previous question?"

Participants were able to respond to both follow-up questions using a 4-point Likert scale (1 =

Not at All to 4 = *A Lot)*. The design of the two follow-up questions was inspired by the Parental

Influence Questionnaire (PIQ) designed by McElhaney and colleagues (2008). The PIQ aimed to

measure a variety of behaviors believed to be influenced by parents and peers by having

adolescents respond to an initial question such as, "Have you ever 'gone with' (dated) anyone?,"

and if the participants responded yes, a follow-up question would ask if their parents (or peers)

were "a big," "a medium," "a small," or "not at all" part of their choice. The two scales the

researchers used this question and response style for were found to have acceptable inter-item

reliability (α = .76 for parents and .80 for peers). A similarly direct design was chosen for the

two follow-up questions included in this study and demonstrated good internal consistency (α =

0.86 for the Parental Influence scale and α = 0.87 for the Peer Influence scale).

Social Desirability

Social desirability was assessed using the Social Desirability Scale -17 (SDS-17; Stober,

1999; see Appendix E). This 16-item measure assesses people's tendencies to deny engaging in

behaviors that most people do sometimes or say they always do something that most people do

not do on occasion. For example, item 1 states, "I sometimes litter", to which participants could

respond "true," which would represent a socially undesirable but likely more accurate response,

or "false," which would represent an inaccurate and socially desirable response. However, six

items are phrased in the reverse, such that responses of "true" represented socially desirable

answers. After reverse coding the six items, all true-responses were coded as 0 (undesirable) and

all false-responses were coded as 1 (desirable). As a result, higher scores signaled a stronger

tendency to respond in socially desirable ways. Previous research has demonstrated that the

SDS-17's four-week test-retest reliability is good (r = .82) and that its internal consistency is

acceptable (α = .72 - .80; Stober, 1999; Stober, 2001). Furthermore, Blake and colleagues (2006)

established acceptable internal consistency and convergent validity for online administration of

the SDS-17. The SDS-17 was used for this study over the more commonly used Marlowe-

Crowne Social Desirability Scale (MCSDS; Crowne & Marlow, 1960) because it is shorter, has

similar psychometric properties, and contains updated items that more accurately reflected

modern social standards. In the current study, internal consistency was found to be acceptable

but lower than in previous studies (α = 0.64). The lower internal consistency may have been

because the items covered a wide range of behaviors, some of which may have become outdated

faster than others (e.g., "I sometimes litter" versus "I take out my bad moods on others now and

then"). Overall, results showed that the mean SDR score fell approximately in the middle of the

0 – 16 point range (M = 8.52, SD = 2.88).

Participant Roles

To determine participants' past bullying participant roles, a self-report adaptation of the

shortened Participant Role Questionnaire (PRQ) was used (Bushard, 2013; see Appendix D) but

further adapted to ask participants about their experiences with bullying retrospectively. In

keeping with the original shortened PRQ (Salmivalli & Voeten, 2004), the self-report PRQ

assesses the frequency students engage in certain bullying behaviors (e.g., "How often do you

start the bullying?") using five subscales: a bully scale, assistant scale, reinforcer scale, defender

scale, and outsider scale and a 3-point Likert scale (0 = *Never* to 2 = *Often)*; Bushard, 2013).

However, rather than asking participants about their behaviors in the present tense, all 15 items

were re-written in the past tense (e.g., "How often do you start the bullying?" was changed to "How often did you start the bullying?"). Additionally, before participants began answering the PRQ items, they received the following prompt: "Please try to recall your behavior in grades 7 and 8 when bullying occurred to answer the following questions" to specify the timeframe that participants should have been referencing when selecting their responses. Previous research has demonstrated that all subscales on the shortened PRQ have good to excellent internal consistency ($\alpha = .88 – .95$; Salmivalli & Voeten, 2004).

One additional question was added to the PRQ from the Revised Olweus Bully/Victim Questionnaire (OBVQ; Olweus, 1996) to assess for a victim category as well. The question read, "When thinking about your experiences in grades 7 and 8, how often do you believe you were bullied?" Response options included, "I was not bullied during grades 7 and 8," "It only happened once or twice," "2 or 3 times a month," "About once a week," and "Several times a week." According to previous work and the Spearman-Brown formula, this single question has been shown capable of reliably identifying participants as victims when response frequencies of "2 or 3 times a month" or more are used to categorize participants as victims ($\rho = .87$; Solberg & Olweus, 2003). As for the other participant roles, they were assigned according to the participants' PRQ subscale scores in combination with their OBVQ score. However, participants could also be deemed uncategorizable according to Salmivalli and colleagues' (1996) criteria for role determination.

Overall, the shortened PRQ and OBVQ measures were selected for this study because previous research has shown that the shortened PRQ and OBVQ can reliably assign participants specific bullying roles using just a few items dedicated to each of the six categories. Moreover,

the brevity of the measures used in this study was of importance given that the entire

questionnaire had to be administered and completed within 30 minutes.

Demographics

Broadly, the demographic section of the questionnaire (see Appendix B) inquired about

age using a drop-down menu for the participants to select their age, status in college (i.e.,

freshman, sophomore, junior, senior, and other), gender identity (i.e., man, woman, and non-

binary/other), and race/ethnicity. Specifically, the response options for race/ethnicity included

"White," "Black or African-American," "Latinx," "Asian," "American Indian or Alaska Native,"

"Native Hawaiian or Other Pacific Islander," and "Other."

Chapter III: Results

Sample Characteristics

Participants were recruited from a mid-sized public university in the Rocky Mountain

region of the United States using the university's undergraduate research recruitment system

(SONA). Between October and November 2020, a total of 264 participants began the survey but

18 did not complete more than the first three items and were removed from the data set. The

remaining 246 participants were between the ages of 18 – 55 years old ($M = 22.21$, $Mode = 18$,

$SD = 6.97$) and 54 (22.0%) identified themselves as men, 187 (76.0%) as women, and 5 (2.0%)

as nonbinary/other. Additionally, of the 246 participants who completed the survey, 210 (85.4%)

identified themselves as White, 10 (4.1%) as American Indian or Alaska Native, 10 (4.1%) as

Latinx, 5 (2.0%) as Black or African American, 4 (1.6%) as Asian, and 7 (2.8%) Bi-Racial or

Multi-Racial. Lastly, 122 (49.6%) participants identified as freshmen, 43 (17.5%) as

sophomores, 35 (14.2%) as juniors, 37 (15.0%) as seniors, and 9 (3.7%) as other.

Variable Creation

        Before conducting the analyses necessary to address the research questions and

hypotheses, several scales were compiled and participants were assigned bullying participant

roles. All the data used in the analyses was collected using Qualtrics and analyzed using IBM

SPSS Statistics version 26.

Parental and Peer Influence Scales

        Following each of the 10 items on the Attitudes Toward Bullying scale (e.g., item 4

"Bullying is stupid"; ATB), two follow-up questions were asked that assessed participants'

recollections of the influence their parents and peers had on their attitudes toward bullying (e.g.,

"How much do you think your parent/guardian(s) would have influenced your answer to the

previous question?"). This initially resulted in 10 items assessing participants' beliefs about the

influence their parents had on their attitudes (i.e., the Parental Influence scale) and 10 items

assessing beliefs about their peers' influence (i.e., the Peer Influence scale). However, it was

decided to exclude follow-up items about influence that were connected to ATB items needing

reverse scoring. The reason for this decision was because the reversed ATB items tapped into

anti-social attitudes (e.g., item 2 "Bullying may be fun sometimes") whereas non-reversed ATB

items tapped into pro-social attitudes (e.g., item 1 "One should try to help the bullied victims.")

This meant that follow-up items stemming from reversed ATB items asked participants to report

how influential their parents and peers were on anti-social attitudes but follow-up items

stemming from non-reversed items asked about perceived influence on pro-social attitudes. This

difference between the reversed and non-reversed items was important to consider because

previous literature suggests that the strength and direction of parental or peer influence may

partially be based on whether pro-social, anti-social, or neutral attitudes are being tapped into

(Berndt, 1979). As a result, the final Parental and Peer Influence scales only included six items

each and represented how influential participants perceived their parents and peers were on their

pro-social attitudes related to bullying. Internal consistency for both the Parental and Peer

Influence scales were good ($\alpha = 0.885$ and $\alpha = 0.866$, respectively).

Furthermore, using participants' scores on the Parental and Peer Influence scales,

participants were categorized as reporting low, moderate, or high levels of parental and peer

influence. To create the levels, frequency analyses were conducted to obtain cutoff scores equal

to the 33rd and 66th percentiles for both the Parental Influence scores and the Peer Influence

scores. Then, using the percentiles, the "low levels" were set to include all participants scoring at

or below the 33rd percentile, the "moderate levels" were set to include participants scoring above

the 33rd percentile and at or below the 66th percentile, and lastly, the "high levels" were set to

include all participants scoring above the 66th percentile. Using this method, participants were

roughly split into thirds and categorized as endorsing low, moderate, or high levels of parental

influence and peer influence.

Bullying Participant Roles

Participants were also categorized into different bullying participant roles using the 15-

item Participant Role Questionnaire (PRQ) and an additional item from the Revised Olweus

Bully/Victim Questionnaire (OBVQ). Using both scales together, participants obtained six scores

corresponding to six different participant roles: bullies, assistants, reinforcers, defenders,

outsiders, and victims. However, previous studies have called into question whether all six roles

are statistically distinct from one another, particularly the three aggressive roles – bullies,

assistants, and reinforcers. For example, Sutton and Smith (1999) found evidence that the

aggressive roles were not statistically distinct and advocated for the use of a general aggressor

category. Given previous findings, a principal components analysis (PCA) was conducted to

determine if combining the bully, assistant, and/or reinforcer subscales to assess for one general

aggressor category would be appropriate. After conducting preliminary analyses to verify that

the data was suitable for a PCA, an examination of the Scree plot and Eigenvalues showed that

component one had an Eigenvalue of 3.41 and explained 21% of the variance. Upon closer

inspection of the items that loaded onto the first component, it was revealed that the items from

the individual bully, assistant, and reinforcer subscales were substantially correlated with each

other and loaded onto component one. As a result, the three scales were combined to create one

scale ($\alpha = .77$) which assessed for a general aggressor role. Internal consistencies for the other

PRQ subscales were found to be good for defenders ($\alpha = .80$) but poor for outsiders ($\alpha = .43$).

The outsider subscale may have demonstrated poor internal consistency because two of the items

tapped into situations that implied participants were aware of bullying situations but actively

chose to stay uninvolved (e.g., "How often did you not take sides with anyone?"), whereas the

third item inquired how often the participants were not even aware of ongoing bullying. This

could have resulted in conflicting responses or identification of two distinct types of "outsiders"

– an actively uninvolved outsider and a passively uninvolved outsider. For example, if a

participant reported that they were "often" not present during bullying situations, they might not

report that they "often" did not take sides with anyone given that they were not part of many

incidents to begin with.

   After the final participant role subscales were determined, participants were categorized

into one participant role according to a combination of several rules utilized in previous studies

(Bushard, 2013; Salmivalli et al., 1996). First, a participant's subscale scores were standardized

($\mu = 0$ and $\sigma = 1$) and their highest subscale score was identified. Then, if the participant's

highest subscale score was above the mean for that subscale, they were assigned to that role. When participants scored equally high on two subscales, they were assigned to the more "active" participant role (e.g., the defender role would be assigned instead of the outsider role). There were no instances of participants scoring equally high on two "active" roles. Additionally, a participant was categorized as a bully-victim if they qualified as an aggressor in addition to scoring above the mean on the victim item (which coincided with reports of victimization "2 or 3 times a month" or more in the current sample). Lastly, participants were deemed uncategorizable if they did not score above the mean on any of the subscales. Following these rules, a total of 87.8% of participants could be categorized and the sample breakdown included 30 (12.2%) aggressors, 49 (19.9%) defenders, 74 (30.1%) outsiders, 29 (11.8%) bully-victims, and 34 (13.8%) victims. Compared to prevalence rates found among children respondents (e.g., Pouwels et al., 2016; Salmivalli et al., 1996), the participants in the current study tended to underreport themselves as aggressors (24% compared to 32.8% - 34.5%) and overreport themselves as outsiders (30.1% compared to 23.7% - 24.1%). On the other hand, in comparison to other samples of adults who have given retrospective reports of their past bullying behavior, the current participants generally identified themselves as aggressors at greater rates (24% compared to 17.6%) and vastly underreported themselves as victims (13.8% compared to 38.2%; Cooper & Nickerson, 2013). Differences among prevalence rates are quite common, though, and may be related to varying operational definitions, variations in measures used, or real differences between samples. Analyses and Results

General Assumption Checks

Before running any of the planned analyses, appropriate preliminary analyses and visual inspections of the variables were conducted to check if any assumptions relevant to multiple

analyses were violated. Upon visual inspection of the data, Bullying Attitudes, SDR, Parental

Influence, and Peer Influence appeared to approximate normal distributions. Additionally, no

outliers needed to be removed so all data from the 246 participants were retained for the

following analyses. Any further assumption checks for individual analyses were conducted as

needed and described below.

Analyses and Results

Research Question 1

To investigate Research Question 1, *what is the relationship between Parental Influence*

and participants' past Bullying Attitudes? two analyses were conducted. For Hypothesis 1, a

simple analysis of means was used to determine whether participants perceived their parents as

influential on their past attitudes toward bullying, which would be represented by a mean greater

than two (1 = *None*, 2 = *A Little,* 3 = *A Moderate Amount*, 4 = *A Lot*). Results showed that

participants reported their parents as moderately influential on their past attitudes toward

bullying ($M = 2.92$, $SD = 0.86$). Moreover, for Hypothesis 2, a three (low, moderate, and high

level of Parental Influence) by one (level of Bullying Attitudes) ANOVA was conducted as part

of a larger factorial ANOVA with Hypothesis 4 to guard against type I errors. The aim of this

analysis for Hypothesis 2 was to determine whether participants who reported low, moderate, or

high levels of Parental Influence also tended to report different past attitudes toward bullying.

Results indicated that there was a significant difference $F(2, 54.985) = 20.331$, $p < .000$, $\eta^2 =$

0.146 and that 14.6% of the total variance in Bullying Attitudes was accounted for by

participants' reported levels of Parental Influence. According to Cohen's (1988) guidelines, this

is considered a large effect size and suggests that there is a strong relationship between perceived

parental influence and past bullying attitudes. Furthermore, the Tukey HSD post hoc test showed

that all groups significantly differed from each other (all p-values < 0.018). Specifically, the

higher the level of Parental Influence participants reported, the stronger their attitudes against

bullying tended to be (attitudes at low level $M = 4.00$, moderate level $M = 4.34$, and high level M

$= 4.54$; Figure 1).

Research Question 2

To answer Research Question 2, *what is the relationship between Peer Influence and*

participants' past Bullying Attitudes? two analyses were run. First, for Hypothesis 3, a simple

analysis of means was conducted to determine whether participants perceived their peers as

influential on their past attitudes toward bullying, which would be represented by means greater

than two ($2 = A$ *Little*). Results indicated that on average participants reported their peers as

influential on past bullying attitudes ($M = 2.54$, $SD = 0.81$). To further explore the relationship

between Peer Influence and Bullying Attitudes, another three by one ANOVA was conducted as

part of the factorial ANOVA previously described for Hypothesis 2. The only difference was that

for Hypothesis 4, the analysis involved three levels of Peer Influence (low, moderate, and high)

instead of three levels of Parental Influence. The aim of Hypothesis 4 was to determine whether

participants who report low, moderate, or high levels of Peer Influence also tended to hold

different past attitudes toward bullying. The results showed no significant differences between

groups $F(2, 54.985) = .520$, $p = .595$. In other words, participants who reported low, moderate, or

high levels of Peer Influence did not significantly differ in their self-reported Bullying Attitudes

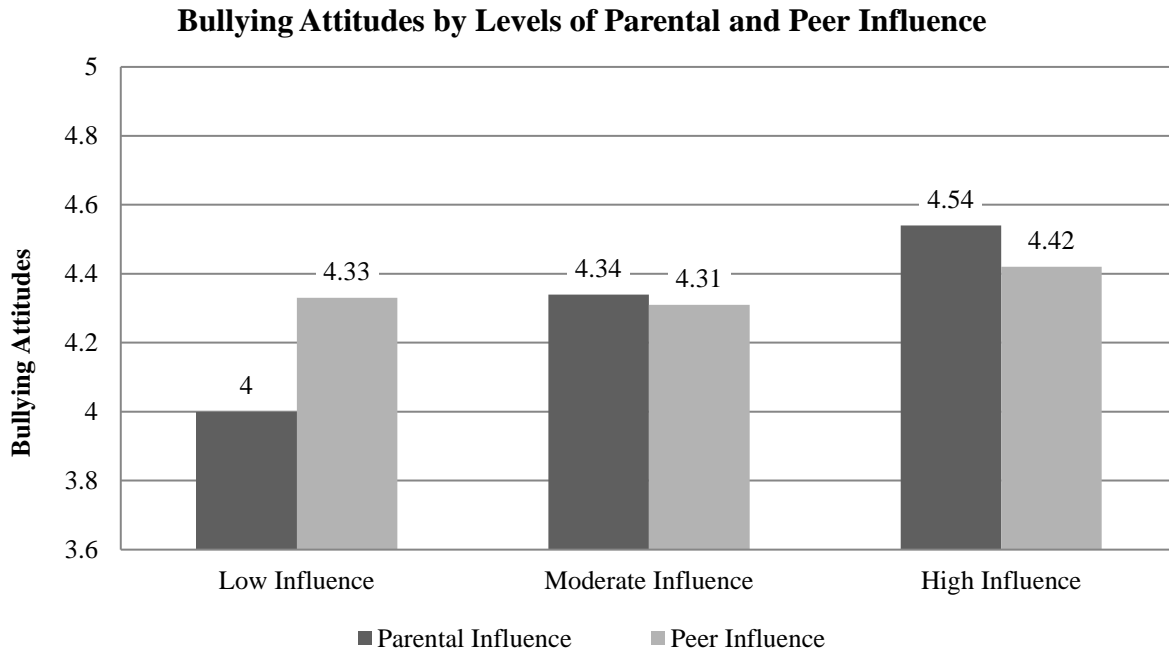($M = 4.33$, $M = 4.31$, $M = 4.24$, respectively; Figure 1).

Bullying Attitudes by Levels of Parental and Peer Influence

Figure 1. *Bar Graph of Bullying Attitudes by Levels of Parental and Peer Influence*

In addition to guarding against type I errors, the factorial ANOVA used to simultaneously test Hypotheses 2 and 4 allowed for the assessment of interactions between parental and peer influences. Although probing for these interaction effects was not initially hypothesized or planned as part of this study, once they became manifest in the analysis results, it was decided to discuss them due to their potential importance. Specifically, the factorial ANOVA revealed that there was a significant interaction between Parental and Peer Influence on Bullying Attitudes, $F(4, 54.985) = 2.914$, $p = .022$, $\eta^2 = 0.047$, with an effect size falling between small (.01) and moderate (.06; Cohen, 1988). To better understand the interaction effect, a simple effects test was conducted which indicated that when low levels of parental influence were reported, moderate and high levels of peer influence were associated with significantly weaker anti-bullying attitudes (low level $M = 4.24$, moderate level $M = 3.94$, high level $M = 3.82$). Furthermore, at moderate or high levels of parental influence, peer influence did not have a statistically significant impact on participants' bullying attitudes (Figure 2*)*.
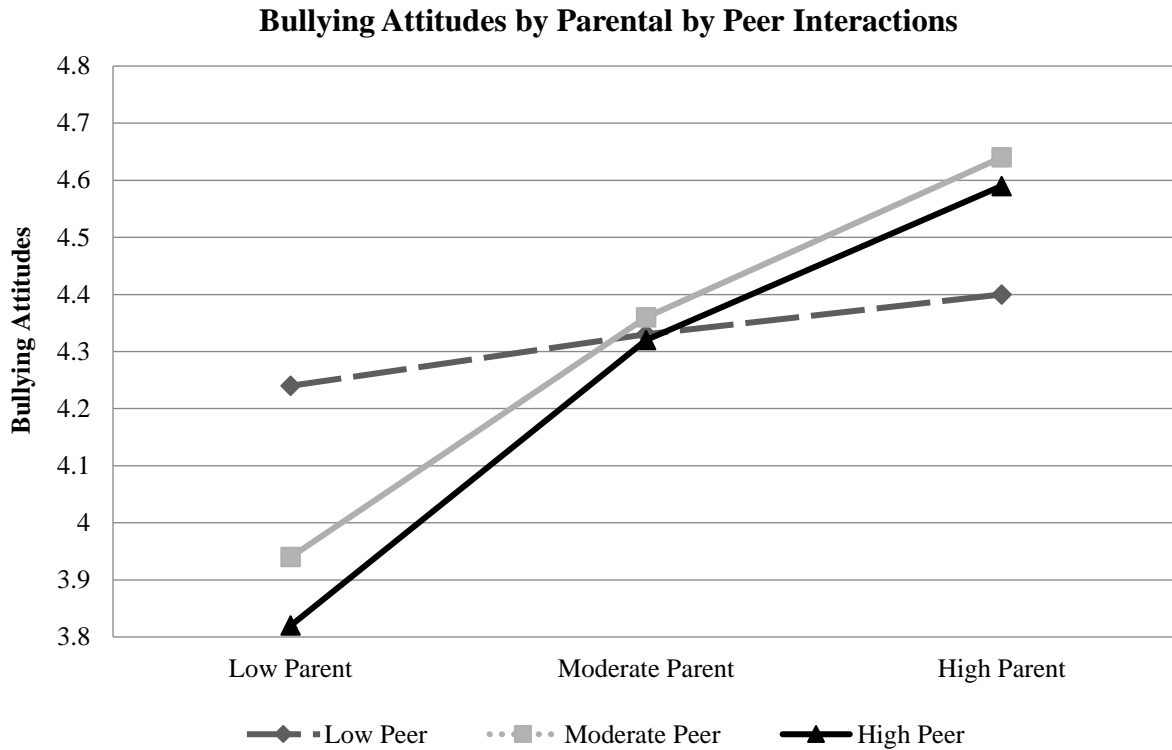
Bullying Attitudes by Parental by Peer Interactions

Figure 2. *Line Graph of Mean Bullying Attitudes by Parental by Peer Influence Interactions*

Research Question 3

As for Research Question 3, *how does Parental Influence and Peer Influence differ regarding their perceived impact on participants' past Bullying Attitudes?* a paired t-test was used to determine whether participants perceived the level of influence their parents and peers had on their past attitudes as significantly different from each other. The results did not support Hypothesis 5's prediction that participants would perceive their parents and peers as equally influential. Rather, the data indicated that participants perceived their parents as more influential on their attitudes toward bullying than their peers $t(245) = 7.646$, $p < .000$. Moreover, according to Cohen's (1988) standards, the effect size (Cohen's $d = .49$) fell slightly short of being considered a medium effect size (.50) and suggests that parents' and peers' influence differ a moderate amount.

Research Question 4

To investigate Research Question 4, *what is the relationship between SDR and Participant Role?*, simple descriptive statistics were examined and a third ANOVA was conducted. Overall, the descriptive statistics showed that the current sample's grand SDR mean fell approximately in the middle of the $0 - 16$ point range ($M = 8.52$, $SD = 2.88$). More specifically, according to Participant Role as shown in Figure 3, the uncategorizable participants had the highest SDR scores ($M = 9.27$, $SD = 2.85$), followed in descending order by defenders ($M = 8.98$, $SD = 2.66$), outsiders ($M = 8.85$, $SD = 2.79$), victims ($M = 8.41$, $SD = 3.19$), aggressors ($M = 7.93$, $SD = 3.30$), and bully-victims ($M = 6.76$, $SD = 1.96$). Furthermore, an ANOVA (six levels of Participant Role by one level of SDR) was run to investigate Hypothesis 6, which predicted that different bullying participant roles would differ in their tendencies to respond in socially desirable ways. Interpretation of the ANOVA revealed that the results were statistically significant $F(5, 240) = 10.464$, $p < .000$, $\eta^2 = .067$ and that the medium effect size suggests moderate differences between the roles (Cohen, 1988). The follow-up Tukey's HSD post hoc test revealed that participants categorized as bully-victims reported significantly lower SDR scores ($M = 6.76$, $SD = 1.96$) than defenders ($M = 8.98$, $SD = 2.66$, $p = 0.01$), outsiders ($M = 8.85$, $SD = 2.78$, $p = 0.01$), and uncategorizable participants ($M = 9.27$, $SD = 2.85$, $p = 0.01$; Figure 3).
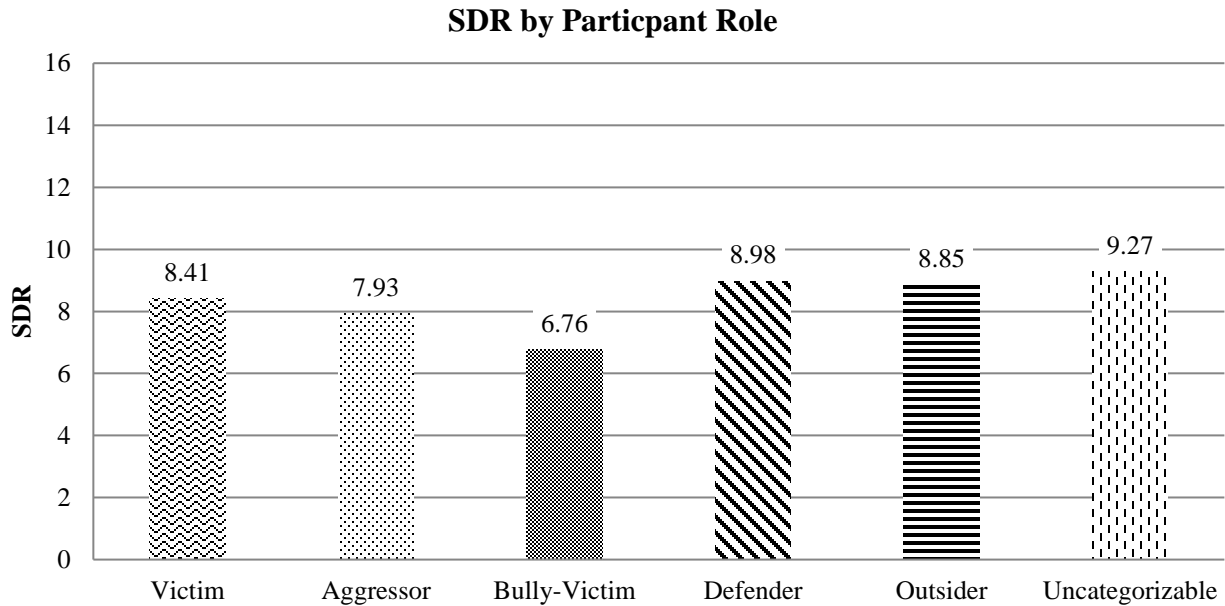
SDR by Particpant Role

Figure 3. *Bar Graph of Mean SDR Scores by Participant Role*

Research Question 5

Lastly, to address Research Question 5, *what is the relationship between SDR and Bullying Attitudes?* several analyses were conducted. The first analysis was a simple linear regression used to investigate the relationship between SDR and Bullying Attitudes. Visual analysis of the scatterplot revealed that the data was spread equally with no distinguishable pattern. The results indicated that the correlation between SDR and Bullying Attitudes was non-significant $F(1, 244) = 3.793$, $p = .053$ and did not support Hypothesis 7's prediction that there would be a significant relationship.

To test Hypothesis 8, a second set of analyses was conducted to investigate whether the relationship between SDR and Bullying Attitudes would be moderated by Participant Role. However, the first step to testing Hypothesis 8 was to determine whether mean levels of Bullying Attitudes differed by Participant Roles to begin with. To test this initial relationship, a six (six Participant Roles) by one (Bullying Attitudes) ANOVA was conducted. Due to lack of

homogeneity of variance and unequal group sizes, the Welch test and Games-Howell post hoc test were interpreted. Results showed that there was a significant difference in means according to Welch's adjusted $F(5, 90.74) = 7.64$, $p < .000$, est. $\omega^2 = 0.12$ and the medium effect size (Kirk, 1996) indicated that 12% of the total variance in Bullying Attitudes was accounted for by Participant Roles. Further examination of the results revealed that bully-victims had significantly weaker anti-bullying attitudes than pure victims ($p = .008$), defenders ($p < .000$), outsiders ($p = .019$), and uncategorizable participants ($p = .001$) but not compared to aggressors. In contrast, aggressors were only found to have significantly weaker anti-bullying attitudes compared to defenders ($p = .008$) and uncategorizable participants ($p = .039$). Lastly, results revealed that aside from the previously mentioned bully-victims and aggressors, defenders also had significantly stronger anti-bullying attitudes than outsiders ($p = .011$; Figure 4).

After establishing that there were significant differences in Bullying Attitudes by Participant Roles that justified further analysis, a moderated multiple regression analysis was conducted to investigate whether the association between SDR and Bullying Attitudes was moderated by Participant Roles. Using the PROCESS version 3.5 macro for SPSS, Hayes' (2017) Model 1 was used to regress the continuous outcome variable (Bullying Attitudes) onto the continuous focal antecedent (SDR) with inclusion of a multicategorical moderator (Participant Roles). After centering the mean for SDR and dummy coding Participant Roles (all roles were compared to the uncategorizable category), the moderated multiple regression analysis was run. The model summary showed that the added predictors (i.e., Participant Roles and SDR) accounted for 21.44% of variance in reported attitudes ($R^2 = .21$, $F(11, 234) = 5.81$, $p < .000$). However, the overall change in R^2 was non-significant (R^2 change $= .035$, $F(5, 234) = 2.08$, $p = .069$) and none of the interaction terms were statistically significant ($p = .111 - .725$).

Overall, these outcomes did not indicate that the relationship between Bullying Attitudes and

SDR was moderated by Participant Roles in the current study.

Bullying Attitudes by Participant Role
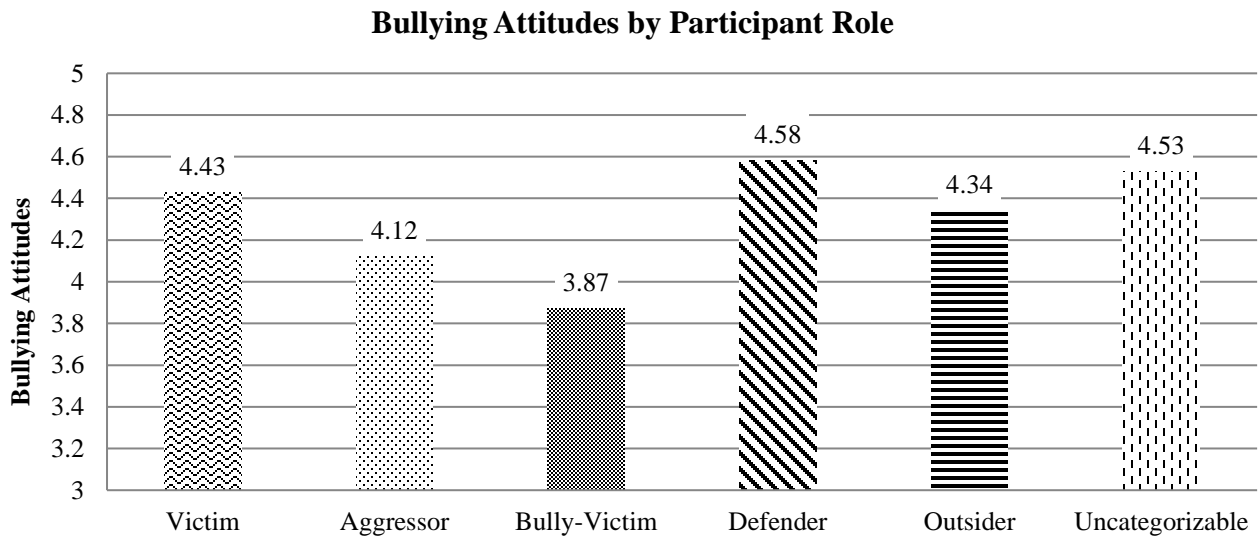
Figure 4. *Bar Graph of Mean Bullying Attitudes by Participant Role*

Chapter IV: Discussion

Although scholars have long known that social influences shape people's attitudes,

relatively little is known about the influence parents and peers play on adolescents' attitudes

toward bullying. Additionally, few studies which have investigated bullying with self-reports

have included measures to assess whether SDR impacted their results. Therefore, this study used

a retrospective self-report questionnaire to assess participants' past attitudes toward bullying,

perceptions of who influenced their attitudes, historical bullying behaviors, and tendencies to

respond in socially desirable ways.

Parental Influence on Attitudes

In response to the first research question, *what is the relationship between Parental*

Influence and participants' past Bullying Attitudes?, two hypotheses were formed. It was first

hypothesized that participants would report their parents as at least a little influential on their

past attitudes toward bullying. This was supported by the results which indicated that

participants, on average, reported their parents as moderately influential on their past attitudes.

Moreover, in the second hypothesis, it was predicted that participants' attitudes toward bullying

would vary depending on whether they reported low, moderate, or high levels of parental

influence. This prediction was also supported, and the results showed that the more participants

perceived their parents as influential on their attitudes, the stronger the participants tended to

oppose bullying.

Several possible explanations could account for the obtained results. First, it is likely that

when parents talk to their children about bullying, they tend to promote anti-bullying beliefs over

pro-bullying beliefs or instruct their children to engage in pro-social behaviors rather than anti-

social behaviors. This would explain why stronger parental influence was found to be associated

with stronger anti-bullying attitudes. Previous literature also supports this explanation and has

found that caregivers tend to suggest pro-social or passive behaviors in response to bullying

(Lester et al., 2017) and that children tend to follow their caregivers' advice (Espelage et al.,

2000; Grassetti et al., 2018). Another possibility is that parents indirectly or unconsciously

influence their children's bullying attitudes and behaviors. For instance, research has shown that

children's attitudes related to alcohol, politics, and religion correlate with their parents' attitudes

even if the children are not fully aware of their parents' attitudes or told to hold specific attitudes

(Acock & Bengtson, 1978; Wood et al., 2004). In these instances, indirect avenues of influence

were found to be operating, such as caregivers modeling certain drinking habits or monitoring

their children's whereabouts (Wood et al., 2004). Regarding bullying specifically, Espelage and

colleagues (2000) found that children's engagement in bullying was negatively related to time

spent with adult role models who advocated peaceful methods of conflict resolution and

positively associated with the use of physical discipline at home. Lastly, parental responses to children's behaviors may also condition behavior over time. For example, Wyatt and Carlo (2002) found that adolescents' self-reported engagement in anti-social behavior (e.g., delinquency and fighting) correlated with their perceptions of how they felt their parents would react to their actions.

Peer Influence on Attitudes

Research Question 2 was similar to Research Question 1 but in terms of peer influence rather than parental influence. Again, two hypotheses were proposed in response to the research question: *What is the relationship between Peer Influence and participants' past Bullying Attitudes?* The first hypothesis was supported, and results revealed that participants perceived their 7th and 8th grade peers as influential on their attitudes toward bullying at the time. This finding is consistent with previous studies that have found peers influence one another's bullying attitudes and behaviors. For example, Doehne and colleagues' (2018) longitudinal study showed that when peers with pro-bullying attitudes joined a social group, the individuals in the social group were more likely to adopt pro-bullying attitudes too. Furthermore, Cohen and Prinstein (2006) conducted an experiment to investigate whether e-confederate peers (i.e., a computer program pretending to be three peers of varying social statuses) could influence adolescents' attitudes toward aggression and health risk behaviors (e.g., bullying behaviors and substance use). They found that not only could the e-confederate peers elicit public conformity from participants but that the participants' private attitudes also significantly changed. Overall, past and current findings indicate that peers influence adolescents' attitudes toward bullying. As for the second hypothesis related to Research Question 2, the interaction effect between parental and

peer influence needs to be considered, otherwise interpretation of the main effect falsely

indicates that different levels of peer influence do not impact bullying attitudes.

Parent and Peer Interactions on Attitudes

According to the factorial ANOVA main effects, it initially appears as though

participants' attitudes vary by level of parental influence but not by peer influence. However,

upon closer inspection, an interaction effect shows that level of peer influence does matter, but

only in the absence of parental influence. In other words, when parental influence is absent or

low, peers become salient sources of influence. More specifically, when parental influence is

low, stronger peer influence is associated with more supportive attitudes toward bullying,

whereas lower peer influence is associated with average anti-bullying attitudes compared to the

overall sample. In comparison, when parental influence is moderate or high, the degree of peer

influence does not appear to affect attitudes and mean level attitudes are higher than the sample's

grand mean, indicating particularly strong anti-bullying attitudes. These findings suggest that

parents not only directly shape their children's attitudes but also exert indirect influence that

alters how their children are swayed by peers. Studies conducted on adolescent alcohol usage has

shown that parental factors (e.g., discipline, nurturance, location and activity monitoring, and

attitudes toward drinking) significantly moderate the relationship between peer influence (e.g.,

peer pressure, social modeling, and social norms) and adolescents' drinking behaviors (Marshal

& Chassin, 2000; Wood et al., 2004). These researchers concluded that not only can parents

directly alter their children's drinking but that they can moderate the impact peers have as well.

Other studies suggest that parental influence may moderate peer influence regarding anti-

social behaviors as well. For example, Laird and colleagues (2008) conducted a longitudinal

study that tracked the developmental trajectories of adolescents' delinquent behaviors (i.e.,

stealing, underage drinking, substance use, lying, and cheating) while assessing parents'

knowledge of their children's activities, whereabouts, and friends. After five years, Laird and

colleagues identified two distinct groups: one which was categorized by decreasing parental

knowledge and one which was categorized by increasing parental knowledge. The group with

decreasing knowledge was associated with more delinquent behavior and anti-social friendships,

whereas the group with increased knowledge was associated with less delinquency and fewer

anti-social friendships. These findings are critical to understanding the current results because

other studies have found that when adolescents associate with peers who hold anti-social or pro-

bullying attitudes, they are more likely to adopt similar attitudes themselves (Cohen & Prinstein,

2006; Doehne et al., 2018; Espelage et al., 2000; Sijtsema et al., 2014). Moreover, adolescents

themselves self-report that they rely more heavily on their parents to abstain from anti-social acts

than peers (Cook et al., 2009). In summary, both current and previous findings indicate that peers

are particularly effective at encouraging anti-social attitudes but that parents promote pro-social

attitudes and potentially deter anti-social attitudes by moderating peer influence.

Parental vs Peer Influences on Attitudes

        Research Question 3 asked *"how does Parental Influence and Peer Influence differ*

regarding their perceived impact on participants' past Bullying Attitudes?," and it was

hypothesized that participants would not report either their parents or peers as more influential

than the other. Results did not support this fifth hypothesis and indicated that participants

perceived their parents as significantly more influential on their past attitudes than their peers.

Although some literature suggests children are sometimes unaware of the influence their peers

have on them (Berndt, 1989), the participants in the current study, as a whole, acknowledged that

their past peers had affected them, just not as much as their parents. Studies that show

adolescents self-report parents as more influential than peers (e.g., Cook et al., 2009) suggest that participants in the current study accurately recalled the relative levels of influence their parents and peers had on them. Nevertheless, participants' perceptions could have been an artifact of retrospective recall. Unfortunately, there is a lack of research regarding whether young adults misremember the influence their parents or peers had on them.

Additionally, it was initially predicted that neither party would be reported as more influential than the other in part because the original Parental and Peer Influence scales were going to assess both encouragement and discouragement of pro-social and anti-social bullying attitudes. Under this assumption, previous literature indicated that participants would endorse parents as more influential on pro-social items (Cook et al. 2009), whereas peers would be endorsed more frequently for anti-social items (Berndt, 1979), resulting in neither party being reported as more influential than the other. However, the final Parental and Peer Influence scales focused on assessing how influenced participants' pro-social bullying attitudes were (e.g., the importance of defending victims) rather than their anti-social bullying attitudes (e.g., that bullying is fun). This change may have played an important role in the observed results because previous literature suggests that parents have a slight edge over peers in terms of influencing pro-social attitudes compared to anti-social ones (Cook et al., 2009; Wyatt & Carlo, 2002). Research has also shown that young adolescents report that their parents have legitimate authority regarding complex issues or issues of morality and safety but less authority over personal matters (e.g., preferred clothing, music, or friends; Daddis, 2008). Although Daddis (2008) did not investigate which domain bullying fell into, young adolescents may view bullying as one of the issues that fall under the purview of their parents. Overall, past findings suggest that parental

influence often extends beyond peer influence for a variety of matters, possibly including pro-social attitudes and behaviors related to bullying.

Socially Desirable Responding

Few studies have investigated the relationship between social desirability and bullying despite bullying being a well-known undesirable behavior. In response to this lacking literature, Research Question 4 was posed: *what is the relationship between SDR and Participant Role?* Based on the limited literature available, it was hypothesized that participants' tendencies to respond in socially desirable ways would vary based on their past participant roles. Specifically, it was proposed that aggressors and defenders would show significantly higher levels of SDR compared to outsiders and victims. The obtained results partially supported this hypothesis and revealed that SDR did vary according to participant roles, but not in the anticipated ways. Rather, bully-victims were found to have significantly lower SDR scores than defenders, outsiders, and uncategorizable participants. These results were quite unexpected given previous research which suggests that bully-victims are the most aggressive (Salmivalli & Nieminen, 2002) and that aggressive individuals tend to score highly on SDR measures (Ivarsson et al., 2005).

To put the current sample's SDR scores into perspective, Blake and colleagues' (2006) research, which also examined SDR scores in samples of college students using the Social Desirability Scale - 17 (SDS-17), can be used as a guide. Using multiple related studies and three different conditions, Blake and colleagues sought to determine if adult participants' SDR scores varied when they were surveyed under a standard condition (i.e., told their answers would be confidential and prompted to be truthful), fake good condition (i.e., told to answer in admirable ways), and honest condition (i.e., told the true purpose of the study and prompted to be honest). Their results showed that average SDR scores fell between 7.50 (SD = 2.94) and 8.38 (SD =

3.18) under standard conditions, between 13.57 (SD = 3.81) and 14.88 (SD = 2.00) in fake good

conditions, and at 7.20 (SD = 3.38) in the honest condition. In comparison to Blake and

colleagues' (2006) standard conditions, the current sample's grand SDR mean (M = 8.52, SD =

2.88) suggests that participants were responding in a relatively neutral way rather than

responding in an explicitly truthful or desirable way. On the other hand, bully-victims in the

current study scored lower (M = 6.76) than both Blake et al.'s standard and truthful groups,

whereas uncategorizable participants, defenders, and outsiders scored somewhat higher (M =

9.27, M = 8.89, M = 8.85, respectively) than Blake et al.'s standard averages. Nevertheless, the

uncategorizable participants, defenders, and outsiders still fell well below the averages found

when Blake and colleagues' participants purposefully responded in artificially desirable ways.

Using Blake and colleagues' (2006) results as points of reference, the current study's results

suggest that bully-victims may have responded to the survey in a slightly less desirable way,

whereas uncategorizable participants, defenders, and outsiders tended toward slightly more

socially acceptable responses. While Blake and colleagues' work is tremendously helpful for

putting the current study's SDR scores into perspective, it does not help explain why differences

in SDR scores between the roles were observed.

When trying to interpret the potential meaning behind the variation in SDR scores, it is

helpful to become familiar with the psychological constructs and mechanisms underlying SDR.

The most prevalent interpretation of SDR comes from Crowne and Marlowe (1960) who argued

that participants with high SDR scores have strong needs for social approval. Alternatively,

Block (1965) proposed that SDR scores may accurately represent the degree to which

participants engage in desirable behaviors and have outstanding characteristics. In other words,

participants who score higher on SDR scales engage in more desirable behaviors or have more positive characteristics (e.g., honesty and agreeableness) than those who score lower.

With both theories in mind, and the knowledge that researchers suggest defending or withdrawing during incidents of bullying are considered more socially desirable than aggressing (Salmivalli et al., 1996), it is possible to explain many of the observed results. First, bully-victims' lower SDR scores may indicate that they are less concerned with the social approval of others. However, it is also possible that bully-victims' SDR scores accurately reflect that they have more undesirable characteristics (e.g., pro-bullying attitudes or aggressive tendencies) than other roles. Block's alternative explanation for SDR helps explain why bully-victims in the current study obtained the lowest SDR scores, reported the weakest anti-bullying attitudes, and were assigned to the most aggressive participant role. Following similar logic, if SDR scores reflect accurate levels of socially desirable characteristics and behaviors, it makes sense why defenders, outsiders, and uncategorizable participants obtained higher SDR scores than bully-victims. Lastly, the present findings may conflict with previous literature that suggested bully-victims would have the highest SDR scores because of the design of the current study, which is discussed in the limitations section.

For the final Research Question 5, *what is the relationship between SDR and Bullying Attitudes?,* two hypotheses were formulated and tested. Hypothesis 7 predicted that there would be a significant relationship between SDR and participants' past attitudes toward bullying. However, results for Hypothesis 7 only approached significance ($p = .053$) and the current study's modest sample size may have resulted in the analysis being underpowered. Although significance was not found in the present study, previous literature suggests that self-reported aggressive attitudes and behaviors correlate with SDR scores (Henning et al., 2005; Straus,

2004). For the final prediction, Hypothesis 8, it was anticipated that the correlation between SDR

and attitudes would be moderated by participants' bullying roles. But this hypothesis was also

not supported despite literature indicating that bullies, bully-victims, and defenders tend to have

higher SDR scores and attenuate their self-reported behaviors more so than other roles (Ivarsson

et al., 2005; Oh & Hazler, 2009; Rigby & Johnson, 2006). It is possible that no correlations were

found because most students are inclined to report anti-bullying attitudes regardless of personal

characteristics or past behaviors (e.g., Boulton et al., 1999; Pouwels et al., 2017; Rigby &

Johnson, 2006), or in this case, their participant roles or needs for social approval. The results

may also have been due to the design of the study or the current sample, with both possibilities

being explored in the limitations section.

Chapter V: Limitations and Future Directions

No study is perfect, and the current work is no exception. When considering the

presented findings, there are several considerations to keep in mind. To start, the correlational

design of the study means that causal relationships between variables can only be speculated at

best. Further research is needed to substantiate directional relationships. For example, a future

study could incorporate open-ended questions regarding influence to explore how participants

thought their parents and peers shaped their attitudes and behaviors. Longitudinal studies would

also greatly aid in revealing what parental and peer actions precede changes in adolescents'

attitudes and behaviors.

The substantial delay in recall should also not be forgotten when drawing conclusions

from the current study because it may have impacted any or all of the examined variables. For

example, the prevalence rate of aggressors and bully-victims in the current sample was only 24%

compared to prevalence rates calculated using samples of children which range from 32.8% -

34.5% (Pouwels et al., 2016; Salmivalli et al., 1996). Instead, current participants tended to

indicate that they were past defenders or outsiders. This tendency for participants to underreport

their aggression and overreport more desirable defending and passivity may have been due to

retrospective recall and SDR. It is possible that reporting on past behaviors as an adult may result

in a tendency to recall one's self as a defender or outsider rather than an aggressor, particularly

for individuals with higher SDR scores as was the case for the defenders, outsiders, and

uncategorizable participants in the current study. A related factor to consider is that participants'

past roles were being compared to their current levels of SDR as adults. This may have produced

different results than would have occurred had their past roles been compared to their past levels

of SDR as adolescents because research shows that levels of SDR sometimes significantly

increase with age (Soubelet & Salthouse, 2011; Vigil-Colet et al., 2013) or decrease with age

(Dadds et al., 1998; Mwamwenda, 1995). To clarify the relationships between SDR, recall, and

participant roles, a future study may want to concurrently assess students' participant roles and

levels of SDR. Lastly, some literature suggests children are sometimes unaware of the influence

others have on them (Berndt, 1989), but the participants in the current study appeared to be

aware that their parents and peers affected the attitudes they held in 7th and 8th grades. While it is

possible that participants' recollections are accurate reflections of their pasts, they could have

also been altered by time, recall, and phenomenon like hindsight bias (Fischhoff & Beyth, 1975).

Additionally, it should be noted that the survey used in the current study was

administered remotely online. Not only is this modality noteworthy because it is less common in

bullying research, but it may be especially relevant because social desirability was examined.

Past literature suggests that altering how measures are administered can impact participants'

tendencies to respond in socially desirable ways (Meehl & Hathaway, 1946). In comparison to

previously mentioned literature that had school staff or research assistants administer

assessments in-person (Ivarsson et al., 2005; Salmivalli & Nieminen, 2002), participants in the

current study may have responded to the bullying items or SDR items differently because they

felt shielded by their anonymity. Relatedly, the fact that the participants in the current study were

adults rather than children may have affected SDR scores because adults may feel less pressured

to respond in socially desirable ways than children who may feel pressured to please or conform

in a world controlled by adults (Crandall et al., 1965). To further explore some of the relatively

novel results presented in the current study, researchers may want to consider designing similar

studies but recruit school-age children or administer the assessments in-person. Results from

such studies could reveal whether the current findings were impacted by retrospective recall or

anonymity and could have important implications.

Aside from age, additional characteristics of the current sample should be noted when

contemplating results and implications. As with many studies conducted in the United States,

most of the participants identified as White, under 30, a binary gender (i.e., man or woman), and

were enrolled in a psychology course. Aside from the typical concerns (e.g., generalizability to

other groups), the fact that the participants all came from psychology courses, which often teach

students about common biases such as SDR, may have impacted results. A future study would do

well to tap into naïve populations and populations representative of different types of people.

Lastly, the measures selected, or designed, for the present study also impose their own

limitations. Although the SDS-17 developed by Stober in 1999 was used because it was a

modern iteration of the widely used Marlowe-Crowne Social Desirability scale from the 1960s, it

was nevertheless 21 years old at the time of the current study. As a result, some of the items may

not have reflected modern social standards. For instance, the item "I sometimes litter" may not

be adequate to identify SDR in certain populations (e.g., young, environmentally conscious

college students) as it may be truly incomprehensible to litter in some people's opinions.

Moreover, as a general concern regarding SDR scales, there is sparse literature to guide

interpretation of SDR scores. Future efforts to establish guidelines or reference norms would

greatly aid in the interpretation and comparison of SDR scores. Lastly, the poor internal

consistency for the outsider subscale on the PRQ suggests that there may be two types of

outsiders, those who actively choose to be uninvolved and those who are passively uninvolved

due to a lack of awareness of bullying. Future researchers may want to investigate or take into

consideration the possibility that the outsider group may be heterogeneous.

Chapter VI: Implications

Despite the limitations of the present study, the results can still provide valuable insight

into bullying, social influences, and social desirability. The current study's findings reveal how

influential parents and peers can be in shaping adolescents' attitudes toward bullying. This is

important to recognize, especially for intervention efforts, due to prior research that has

established that individuals' attitudes toward bullying are related to their bullying behavior (e.g.,

Boulton et al., 1999; Cohen & Prinstein, 2006; Eslea & Smith, 2000). Furthermore, the results

support implications regarding social desirability's impact on self-reports in bullying research

that may be important to future researchers interested in the topic.

The results clearly demonstrated that participants recalled their parents and peers as

influential on their past attitudes toward bullying. This highlights the importance of considering

social forces when addressing bullying. For decades, researchers have shown that group

processes underlie bullying among children and have advocated implementing interventions that

extend beyond the traditional bully-victim dyad (Salmivalli et al., 1996; Ttofi & Farrington,

2011). Moreover, the findings in the current study suggest that when left unchecked by more pro-social adults, peer influence is associated with stronger anti-social attitudes and behaviors. With this knowledge in mind, efforts to curb bullying may be more effective if parents, and potentially teachers according to some studies (e.g., Ttofi & Farrington, 2011), work to guide children in a pro-social direction. In fact, Ttofi and Farrington (2011), conducted a comprehensive meta-analysis and found that bullying interventions are more effective when parents are actively engaged in the anti-bullying efforts through parent trainings and meetings. Additionally, they found that anti-bullying programs that also included teacher trainings, classroom rules prohibiting bullying, and a school-wide anti-bullying policy were more effective than those without such features. Overall, Ttofi and Farrington's findings align with the current study's implications, namely that targeting peers school-wide and involving adults in intervention efforts is likely best practice in terms of curbing bullying.

The second general aim of the study, to assess the impact of social desirability on bullying self-reports, also led to a couple of implications. First, levels of SDR appeared to vary by participant role, which raises the question of whether different participant roles tend toward responding to non-item related factors in bullying research. This is particularly concerning given researchers' reliance on accurate self-reports about potentially sensitive information (e.g., past victimization and aggression). Interestingly, the results also supported an alternative possibility that SDR scores may be honest reflections of participants' admirable qualities and actions, or lack thereof. Although this interpretation is less well-known and empirically supported compared to traditional interpretations proposed by researchers like Crowne and Marlowe (1960), the current results support it. However, regardless of which interpretation is favored by the results, further investigation is needed to determine what different SDR scores represent.

Furthermore, although results showed a non-significant relationship between SDR and reported attitudes under stringent adherence to a p-value of less than exactly .050, the relationship still approached significance despite the modest sample size and numerous factors that are speculated to lessen SDR. Namely, anonymity, remote administration online, and the adult-status of the participants rather than the minor-status that is more typical in bullying research. Given the near significance, prudent researchers in the future may want to take measures to guard against SDR when studying bullying (e.g., ensure anonymity, emphasize honesty, etc.) or include an SDR scale in their assessment battery.

In conclusion, the current study may have generated more questions than answers, but future researchers certainly have a variety of options to choose from for future investigations. In particular, it may be important to further explore how parents and peers influence adolescents and if concurrent measures of SDR and bullying attitudes or behaviors covary. Additionally, efforts to create guidelines for interpreting SDR scores may greatly benefit not only research into bullying but a variety of other socially sensitive topics too. Overall, the present findings indicate that there is much left to understand about bullying, social desirability, and social influence.

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Appendix A

Table A1

Sample Characteristics

Characteristic	Frequency	Percent of Sample
Gender		
Men	54	22.0%
Women	187	76.0%
Nonbinary/Other	5	2.0%
Age		
18	77	31.3%
19	41	16.7%
20	30	12.2%
21	27	11.0%
22	15	6.1%
23	3	1.2%
24	6	2.4%
25	3	1.2%
26	4	1.6%
27	1	0.4%
28	5	2.0%
29	3	1.2%
30+	28	10.8%
Status in College		
Freshman	122	49.6%
Sophomores	43	17.5%
Juniors	35	14.2%
Seniors	37	15.0%
Other	9	3.7%
Ethnicity		
White	210	85.4%
American Indian or Alaska Native	10	4.1%
Latinx	10	4.1%
Black or African American	5	2.0%
Asian	4	1.6%
Bi-Racial or Multi-racial	7	2.8%
Participant Role		
Victim	34	13.8%
Aggressor	30	12.2%
Bully-Victim	29	11.8%
Defender	49	19.9%
Outsider	74	30.1%
Uncategorizable	30	12.2%

Table A2

Descriptive Statistics of Variables

Measure	Range	Mean	Standard Deviation
Bullying Attitudes	1.70 – 5	4.29	0.53
Parental Influence	1 – 4	2.92	0.86
Peer Influence	1 – 4	2.54	0.81
SDR	2 – 16	8.51	2.88

Table A3

Bullying Attitudes by Levels of Influence

Measure	N	Mean	Standard Deviation
Parental Influence			
Low	93	4.00	0.61
Moderate	64	4.34	0.44
High	89	4.54	0.52
Peer Influence			
Low	94	4.28	0.50
Moderate	69	4.33	0.50
High	83	4.42	0.57

Table A4

Bullying Attitudes by Parental x Peer Interactions

Level of Influence	Low Parent	Moderate Parent	High Parent
Low Peer	4.24	4.33	4.40
Moderate Peer	3.94	4.36	4.64
High Peer	3.82	4.32	4.59

Table A5

Analysis of Variance of SDR by Roles

	df	SS	MS	F	p
Between groups	5	135.86	27.17	3.44	.005
Within groups	240	1897.62	7.91		
Total	245	2033.48			

Table A6

Tukey's HSD Post Hoc of SDR by Roles

Participant Role	Victim	Aggressor	Defender	Outsider	Bully-Victim	Uncategorizable
Victim	-	-	-	-	-	-
Aggressor	.48	-	-	-	-	-
Defender	-.57	-1.05	-	-	-	-
Outsider	-.44	-.92	.13	-	-	-
Bully-Victim	1.65	1.18	2.22**	2.09**	-	-
Uncategorizable	-.86	-1.33	-.29	-.42	-2.51*	-

Note: *$p < .003$, **$p < .001$

Table A7

Welch's Test of Bullying Attitudes by Roles

	df1	*df2*	*F*	*p*
Welch	5	90.743	7.642	.000

Table A8

Games-Howell Post Hoc of Bullying Attitudes by Roles

Participant Role	Victim	Aggressor	Defender	Outsider	Bully-Victim	Uncategorizable
Victim	-	-	-	-	-	-
Aggressor	.32	-	-	-	-	-
Defender	-.15	-.47**	-	-	-	-
Outsider	.09	-.22	.24*	-	-	-
Bully-Victim	.56**	.24	.71***	.47*	-	-
Uncategorizable	-.09	-.41*	.05	-.19	-.66***	-

Note: *$p < .05$, **$p < .01$, *** $p < .001$

Appendix B

Demographic Information

1. **What age are you?** [drop down menu for age selection] 18 - 99

2. **What gender do you identify as?**

   Woman | Man | Non-binary/other

3. **What year of college are you in?**

   Freshman | Sophomore | Junior | Senior | Other

4. **What race or ethnicity do you identify as?**

White	Asian	Other
Black or African-American	Native Hawaiian/Other Pacific Islander	
American Indian/Alaska Native	Latinx	

Appendix C

Attitudes Towards Bullying

Instructions: For each of the following questions, please consider how much you would have agreed or disagreed with the following statements about bullying **when you were in grades 7 and 8**. Then, after each statement, mark how much you think your parent/guardian(s) and friends influenced how you felt **when you were in grades 7 and 8**. For example, parents or friends may have said or done things in the past that influenced how you felt about the following statements about bullying when you were in 7th and 8th grade.

Throughout this survey, "bullying" is defined as when one student is repeatedly exposed to harassment and attacks from one or several other students. Harassment and attacks may be, for example, shoving or hitting, calling them names, making jokes about them, leaving them outside of a group, taking their things, or any other behavior meant to hurt them. It is not bullying when two students of equal strength or power have a fight, or when someone is occasionally teased, but it is bullying when the same student is intentionally and repeatedly hurt.

Please note we are only referring to bullying that happens in person and not bullying that occurs online or via social media.

Please try to recall what your attitudes toward the following statements would have been **when you were in grades 7 and 8** and how much your parents and friends would have influenced your attitudes.

1. **One should try to help the bullied victims.**

Strongly Disagree | Slightly Disagree | Neutral | Slightly Agree | Strongly Agree

       1a. How much do you think your parent/guardian(s) would have influenced your answer to the previous question (#1)?

None | A Little | A Moderate Amount | A Lot

       1b. How much do you think your friends would have influenced your answer to the previous question (#1)?

None | A Little | A Moderate Amount | A Lot

2. **Bullying may be fun sometimes.**

Strongly Disagree | Slightly Disagree | Neutral | Slightly Agree | Strongly Agree

       2a. How much do you think your parent/guardian(s) would have influenced your answer to the previous question (#2)?

None | A Little | A Moderate Amount | A Lot

2b. How much do you think your friends would have influenced your answer to the previous question (#2)?

None | A Little | A Moderate Amount | A Lot

3. It is the victims' own fault that they are bullied.

Strongly Disagree | Slightly Disagree | Neutral | Slightly Agree | Strongly Agree

3a. How much do you think your parent/guardian(s) would have influenced your answer to the previous question (#3)?

None | A Little | A Moderate Amount | A Lot

3b. How much do you think your friends would have influenced your answer to the previous question (#3)?

None | A Little | A Moderate Amount | A Lot

4. Bullying is stupid.

Strongly Disagree | Slightly Disagree | Neutral | Slightly Agree | Strongly Agree

4a. How much do you think your parent/guardian(s) would have influenced your answer to the previous question (#4)?

None | A Little | A Moderate Amount | A Lot

4b. How much do you think your friends would have influenced your answer to the previous question (#4)?

None | A Little | A Moderate Amount | A Lot

5. Joining in bullying is the wrong thing to do.

Strongly Disagree | Slightly Disagree | Neutral | Slightly Agree | Strongly Agree

5a. How much do you think your parent/guardian(s) would have influenced your answer to the previous question (#5)?

None | A Little | A Moderate Amount | A Lot

5b. How much do you think your friends would have influenced your answer to the previous question (#5)?

None | A Little | A Moderate Amount | A Lot

6. It is not that bad if you laugh with others when someone is being bullied.

Strongly Disagree | Slightly Disagree | Neutral | Slightly Agree | Strongly Agree

6a. How much do you think your parent/guardian(s) would have influenced your answer to the previous question (#6)?

None | A Little | A Moderate Amount | A Lot

6b. How much do you think your friends would have influenced your answer to the previous question (#6)?

None | A Little | A Moderate Amount | A Lot

7. One should report bullying to the teacher.

Strongly Disagree | Slightly Disagree | Neutral | Slightly Agree | Strongly Agree

7a. How much do you think your parent/guardian(s) would have influenced your answer to the previous question (#7)?

None | A Little | A Moderate Amount | A Lot

7b. How much do you think your friends would have influenced your answer to the previous question (#7)?

None | A Little | A Moderate Amount | A Lot

8. Making friends with the bullied victim is the right thing to do.

Strongly Disagree | Slightly Disagree | Neutral | Slightly Agree | Strongly Agree

8a. How much do you think your parent/guardian(s) would have influenced your answer to the previous question (#8)?

None | A Little | A Moderate Amount | A Lot

8b. How much do you think your friends would have influenced your answer to the previous question (#8)?

None | A Little | A Moderate Amount | A Lot

9. It is funny when someone ridicules a classmate over and over again.

| Strongly Disagree | Slightly Disagree | Neutral | Slightly Agree | Strongly Agree |

9a. How much do you think your parent/guardian(s) would have influenced your answer to the previous question (#9)?

| None | A Little | A Moderate Amount | A Lot |

9b. How much do you think your friends would have influenced your answer to the previous question (#9)?

| None | A Little | A Moderate Amount | A Lot |

10. Bullying makes the victim feel bad.

| Strongly Disagree | Slightly Disagree | Neutral | Slightly Agree | Strongly Agree |

10a. How much do you think your parent/guardian(s) would have influenced your answer to the previous question (#10)?

| None | A Little | A Moderate Amount | A Lot |

10b. How much do you think your friends would have influenced your answer to the previous question (#10)?

| None | A Little | A Moderate Amount | A Lot |

Appendix D

Bullying Experiences

Instructions: In the next section, you will be answering questions about **bullying when you were in grades 7 and 8**. We say a student is being bullied when they are repeatedly exposed to harassment and attacks from one or several other students. Harassment and attacks may be, for example, shoving or hitting, calling them names, making jokes about them, leaving them outside of a group, taking their things, or any other behavior meant to hurt them. It is not bullying when two students of equal strength or power have a fight, or when someone is occasionally teased, but it is bullying when the same student is intentionally and repeatedly hurt.

Please note we are only referring to bullying that happens in person and not bullying that occurs online or via social media.

Please try to recall your behavior in **grades 7 and 8** when bullying occurred to answer the following questions:	**Never**	**Sometimes**	**Often**
1. How often did you start the bullying?	○ **0**	○ **1**	○ **2**
2. How often did you assist the bully?	○ **0**	○ **1**	○ **2**
3. How often did you tell the others to stop bullying?	○ **0**	○ **1**	○ **2**
4. How often did you find new ways of harassing the victim?	○ **0**	○ **1**	○ **2**
5. How often did you join in the bullying when someone else had started it?	○ **0**	○ **1**	○ **2**
6. How often did you not take sides with anyone?	○ **0**	○ **1**	○ **2**
7. How often did you help the bully, maybe by catching the victim?	○ **0**	○ **1**	○ **2**
8. How often did you come around to see (watch) the bullying situation?	○ **0**	○ **1**	○ **2**
9. How often did you laugh at the bullying situation?	○ **0**	○ **1**	○ **2**
10. How often did you stay outside the situation?	○ **0**	○ **1**	○ **2**
11. How often did you make others join in the bullying?	○ **0**	○ **1**	○ **2**
12. How often did you try to make others stop the bullying?	○ **0**	○ **1**	○ **2**
13. How often did you encourage the bully by shouting or saying things like: "Show him/her"?	○ **0**	○ **1**	○ **2**
14. How often did you comfort the victim, maybe by encouraging the victim to tell the teacher about the bullying?	○ **0**	○ **1**	○ **2**
15. How often were you not really present in bullying situations?	○ **0**	○ **1**	○ **2**

16. When thinking about your experiences in grades 7 and 8, how often do you believe you were bullied?
    o I was not bullied during grades 7 or 8
    o It only happened once or twice
    o 2 or 3 times a month
    o About once a week
    o Several times a week

Appendix E

Below you will find a list of statements. Please read each statement carefully and decide if that statement describes you or not. If it describes you, check the word "true"; if not, check the word "false".	True	False
1. I sometimes litter.	○ **1**	○ **0**
2. I always admit my mistakes openly and face the potential negative consequences.	○ **1**	○ **0**
3. In traffic I am always polite and considerate of others.	○ **1**	○ **0**
4. I always accept others' opinions, even when they don't agree with my own.	○ **1**	○ **0**
5. I take out my bad moods on others now and then.	○ **1**	○ **0**
6. There has been an occasion when I took advantage of someone else.	○ **1**	○ **0**
7. In conversations I always listen attentively and let others finish their sentences.	○ **1**	○ **0**
8. I never hesitate to help someone in case of emergency.	○ **1**	○ **0**
9. When I have made a promise, I keep it--no ifs, ands or buts.	○ **1**	○ **0**
10. I occasionally speak badly of others behind their back.	○ **1**	○ **0**
11. I would never live off other people.	○ **1**	○ **0**
12. I always stay friendly and courteous with other people, even when I am stressed out.	○ **1**	○ **0**
13. During arguments I always stay objective and matter-of-fact.	○ **1**	○ **0**
14. There has been at least one occasion when I failed to return an item that I borrowed.	○ **1**	○ **0**
15. I always eat a healthy diet.	○ **1**	○ **0**
16. Sometimes I only help because I expect something in return.	○ **1**	○ **0**