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The Relation Between Patterns of Beliefs About Fighting and Social Information-Processing: Differences in Cognitions, Goals, and the Response-Decision Process in Adolescents

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THE RELATION BETWEEN PATTERNS OF BELIEFS ABOUT FIGHTING AND SOCIAL INFORMATION-PROCESSING: DIFFERENCES IN COGNITIONS, GOALS, AND THE RESPONSE-DECISION PROCESS IN ADOLESCENTS

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by

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Abstract

THE RELATION BETWEEN PATTERNS OF BELIEFS ABOUT FIGHTING AND SOCIAL INFORMATION-PROCESSING: DIFFERENCES IN COGNITIONS, GOALS, AND THE RESPONSE-DECISION PROCESS IN ADOLESCENTS

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Beliefs about aggression play a key role in how youth interpret and respond to social situations and are related to aggressive behavior. Adolescents may report beliefs supporting aggression and engage in aggression due to reinforcement within their environment, rather than due to maladaptive social information-processing (SIP) biases. The purpose of this study was to examine adolescents' patterns of beliefs about aggression and how these patterns relate to SIP. This study used latent class analysis (LCA), the Articulated Thoughts in Simulated Situations paradigm, and a Problem Solving Interview to examine differences in SIP between adolescents with varying patterns of beliefs about aggression. Participants included 435 sixth and seventh grade students (45% male, 63% African American, 22% Caucasian) from two urban schools and a semi-rural school. A LCA of the beliefs about aggression measure identified four classes of adolescents: (a) a Beliefs Against Fighting (*Against*) class that opposed the use of aggression

(21% of the sample); (b) a Fighting is Sometimes Necessary (*Sometimes*) class that endorsed beliefs that fighting is sometimes inevitable (31%); (c) a Beliefs Supporting Fighting (*Support*) class that supported aggression across multiple contexts (33%); and (d) a Low Responders class that disagreed with all items (12%). Differences among classes were found on gender and race/ethnicity. As hypothesized, significant differences were found such that the *Sometimes* and *Against* classes differed from the *Support* class in reporting that it is ok to fight in response to non-physical aggression and effectiveness ratings of physical aggression and effective nonviolent responses. The *Sometimes* class was also less likely than the *Support* class, but more likely than the *Against* class to report behavioral intentions for aggression, revenge goals, and aggression as a first response to problem situations. Contrary to the hypotheses, classes did not differ in several areas, including hostile and benign intent attributions and generation of prosocial responses. These differences suggest the need for using prevention approaches that address multiple patterns of beliefs about aggression, such as interventions that improve SIP for adolescents with beliefs supporting aggression and universal prevention programs that address school climate for adolescents with beliefs that fighting is sometimes necessary.

The Relation Between Patterns of Beliefs About Fighting and Social Information-Processing: Differences in Cognitions, Goals, and the Response-Decision Process in Adolescents

Adolescence has been identified as a period of increased risk for negative, social, and behavioral outcomes (US Department of Health and Human Services [USDHHS], 2001). During adolescence youth violence and aggression become particularly problematic as the frequency of aggression peaks (Dryfoos, 1990; Roughman, 1981). This is reflected in the rates of aggression and violence occurring during middle and high school. For example, the Centers for Disease Control's (CDC, 2010) reported that 20% of a nationally-representative sample of high school adolescents reported being bullied at school in the 12 months prior to the survey with higher rates occurring during middle school (2010). In addition, youth violence is the second leading cause of death and is responsible for over 720,000 injuries in youths between the ages of 10 and 24 in the United States (CDC, 2008).

Aggression during adolescence has been linked to a variety of negative outcomes, including harmful life trajectories of antisocial behavior and maladaptive psychological functioning (Coie & Dodge, 1998). Research has also revealed strong relations between youth violence and other problem behaviors including drug abuse (Elliott, Huizinga, & Menard, 1989; USDHHS, 2001) and delinquency (Crick, Ostrov, & Werner, 2006). Studies suggest that aggression is not only related to, but often precedes these problem behaviors (e.g., Farrell, Sullivan, Esposito, & Meyer, 2005).

The high prevalence and significant impact of youth aggression underscore the need for a clear understanding of risk factors for the development of aggression. One useful framework for understanding the development of aggression is the social information-processing model. Maladaptive social information-processing biases have consistently been related to increased aggression (e.g., Pettit, 1997). Crick and Dodge (1994) developed the social information-processing model to provide a framework for describing how youths select and implement responses to social situations. This model proposes that individuals enter a social situation with a set of their own biological capabilities and a database of memories from past experiences. They receive an array of cues from the situation and respond based on their processing of those cues. According to the social information-processing model, responses in problem situations are based on a series of mental steps that include encoding and interpreting cues, selecting goals, accessing and constructing responses, and deciding on a response. For example, research has found that youths who reported using aggression have been shown to jump to conclusions and attribute hostile intentions to others in ambiguous situations (Crick & Dodge, 1994; Dodge & Frame, 1982; Dodge, Price, Bachorowski, & Newman 1990). Previous research has also found that highly aggressive youths were less likely to rate the consequences of rule-breaking behavior as important, probable, and severe, than youths who reported low rates of aggression in an African American sample of high school students (Guerra, 1989; Guerra & Slaby, 1989).

According to the social information-processing model, youths' beliefs, particularly beliefs about aggression, also play a key role in how they interpret and respond to social situations and are strongly related to aggression. Beliefs are a component of a youth's database, which consists of memories, acquired rules, and social schemas and knowledge (Huesmann, 1988). These beliefs play an important role in the social information-processing model by

influencing each step within the model through multiple feedback loops. Cognitive scripts are programs for behavior that are stored in a person's memory (Huesmann, 1988). Huesmann suggested that aggressive behavior is largely dependent upon the extent to which scripts are encoded, rehearsed, stored, and retrieved. Research has suggested that aggressive youths have more aggressive scripts than nonaggressive youths.

Normative beliefs about aggression are a specific type of belief that has frequently been examined in its relation to aggressive behavior. Normative beliefs are the filter through which cognitive scripts suggest behavior to individuals (Huesmann, 1988). Normative beliefs impact behavior by filtering out inappropriate behaviors, impacting an individual's emotional reaction to others' behaviors, and stimulating the use of previously learned scripts for behavior. Normative beliefs about aggression represent individual beliefs regarding the acceptability and legitimacy of using aggressive behaviors. Normative beliefs about aggression include whether it is okay or necessary to engage in aggression under varying situations of context, time, and targets. Research findings have suggested that children's normative beliefs about aggression increase over time and that this increase is predictive of increased aggression through adolescence (Huesmann & Guerra, 1997). Normative beliefs about aggression have been shown to relate to the use of multiple forms of aggression including physical, verbal, and indirect aggressive behaviors (Lim & Ang, 2009). For example, one study found that antisocial-aggressive high school adolescents held beliefs supporting the use of aggression, including beliefs that aggression is a legitimate response, helps avoid a negative image, and does not lead to suffering (Slaby & Guerra, 1988).

The majority of current studies and existing measures of beliefs about aggression assume a single underlying dimension representing the extent to which aggression is considered

appropriate. Existing measures may include items that address how beliefs about aggression may vary based upon the context of the social situation, but the scores do not reflect this multidimensionality (e.g., Huesmann & Guerra, 1997). For example, one of the most widely used measures of beliefs about aggression, the Normative Beliefs about Aggression Scale (NOBAGS), includes items that assess how situational factors are related to beliefs about aggression and more specific beliefs about the appropriateness of using aggression in retaliation to specific provocations (Huesmann & Guerra, 1997). Within most analyses, however, all items are combined into either a single score or two scores reflecting general beliefs about aggression and beliefs about retaliation.

Studies suggesting that beliefs about aggression may be multidimensional raise concerns about the appropriateness of measures of beliefs about aggression that assume a unidimensional construct. Recent qualitative studies have suggested that a complex structure of beliefs better represent beliefs about aggression than a single factor (Farrell et al., 2008, 2010). Farrell and colleagues found multiple patterns of normative beliefs about aggression, including beliefs that fighting is sometimes necessary or inevitable, beliefs that involved rules of engagement dictating when fighting may be appropriate, and beliefs that fighting is justified or even necessary in response to specific provocations. For example, youths described the necessity of fighting in response to specific acts of provocation (e.g., someone says something about a member of your family). Youths also gave reasons why fighting might be necessary within specific situations (e.g., beliefs that fighting may be critical to survival). This suggests that youths may hold different normative beliefs about aggression depending upon the context of the situation.

Environmental and cultural factors supporting aggression may influence the development of different belief patterns about aggression. Research has suggested that the most conducive

environments for learning and maintaining aggressive behavior are those where youths are reinforced for aggression (e.g., Patterson, 1986). In one study using a primarily African American sample of fifth grade children living in a high crime urban environment, perceived neighborhood danger predicted strong positive beliefs about aggression (Colder, Mott, Levy, & Flay, 2008). Colder and colleagues suggested these findings were due to learned normative beliefs that aggression is necessary for self-protection and instrumental goal attainment within this culture. Qualitative studies by Farrell and colleagues (2010) found peer support for aggression such that approximately half of the adolescents interviewed reported friend's support for fighting, peer pressure for fighting, and bystander pressure to fight in a primarily African American urban sample. Previous research has also demonstrated the influence of the environment through modeling and reinforcement of aggressive behaviors in rural environments (e.g., Larsen & Dehle, 2007). For example, one study found that witnessing violence mediated the relation between parenting practices and aggressive behavior for ninth graders within rural communities (Mazefsky & Farrell, 2005).

Environmental modeling and support for aggression can range in proximity from directly experiencing support for aggression from peers or parents to being part of a school or neighborhood community where aggression is normative, such as using aggression for protection due to safety concerns (e.g., Duckworth, Hale, Clair, & Adams, 2000). For example, the school environment can provide reinforcement for the use of aggression on multiple levels. One study of middle school students found multiple school-level predictors of aggression, including school-level norms opposing aggression, interpersonal climate, and school responsiveness to violence (Henry, Farrell, Schoeny, Tolan, & Dymnicki, 2011). These results highlight the importance of

considering environmental influences on beliefs about aggression and suggest that these beliefs may be more complex than just support for or against aggressive behavior.

Farrell and colleagues (2012) explored the connection between patterns of beliefs and specific individual and environmental risk factors associated with aggression through the development of a multidimensional measure of beliefs about aggression. Their findings supported the hypothesis that adolescents would respond with a complex structure of beliefs. More specifically they found three patterns of beliefs about aggression: (a) a general pattern of beliefs against fighting; (b) a pattern of beliefs that fighting is sometimes necessary, including beliefs that reflected opposition to fighting in response to provocation or to achieve instrumental goals; and (c) a general pattern of beliefs supporting fighting, including beliefs that fighting is sometimes necessary and that fighting is justified in response to provocation, but also reflected some beliefs against fighting in specific contexts, such as to achieve instrumental goals. They also found differences among these classes based on demographics, behavior, adjustment, and values and beliefs. For example, adolescents who believed fighting was sometimes necessary reported slightly lower levels of aggressive behaviors compared to the group that generally supported aggression. On the other hand, these same adolescents judged the effectiveness of physically aggressive and nonaggressive responses similar to adolescents who reported beliefs against aggression. Adolescents who believed that fighting was sometimes necessary reported both peer and parental support for the use of aggression that was higher than adolescents who reported beliefs against aggression and parental support for nonviolence that was similar to adolescents who reported beliefs against aggression.

Differences in these patterns of beliefs about aggression may be related to distinct trajectories of aggression and antisocial behavior. Moffitt (1993) argued that there are two

distinct trajectories of aggression, life-course persistent and adolescent-onset aggression. Life-course persistent or early-onset aggression is related to severe aggression and a stable pattern of aggressive behaviors from early youth through adulthood. Adolescent-onset aggression develops during middle to late adolescence and discontinues during development into young adulthood (Moffitt & Caspi, 2001). Youths with general beliefs supporting aggression may be representative of life-course persistent aggressors. Youths with slightly lower levels of aggressive behavior, who identify beliefs that fighting is sometimes necessary, may be representative of adolescent-onset aggressors. Research has shown that adolescent-onset aggressors may display similar behaviors to early-onset youth, but their behavior is temporary and frequently has distinct causes.

Although research has not examined relations between social information-processing patterns and different patterns of beliefs about aggression, differences in the role of social information-processing biases have been found between life-course persistent and adolescent-onset aggressors. Life-course persistent aggression begins with the interaction of neurological impairment and environmental factors that creates deficits in language-based verbal skills and executive functions and leads to maladaptive social information-processing and a restricted behavioral repertoire (Caspi & Moffitt, 1995; Moffitt, 1993). In contrast, Moffitt (1993) suggested that the development of adolescent-onset aggression is not explained by the social information-processing model. Research has indicated that adolescent-onset aggressors do not show the same pattern of maladaptive biases in specific components of the social information-processing model, such as increased hostile attribution bias and decreased behavioral repertoire and prosocial alternatives, as life-course persistent aggressors (e.g., Caspi & Moffitt, 1995; Crick & Dodge, 1996; Erdley & Asher, 1998; Slaby & Guerra, 1988). Adolescent-onset aggression

begins during puberty when adolescents have biologically matured, but do not have mature privileges and responsibilities and is related to reinforcement and punishment contingencies (Moffitt & Caspi, 2001). During this time, aggression becomes normative as a means for adolescents to hasten social maturation, gain autonomy due to conflicts with their parents, and win affiliation with peers (Moffitt & Caspi, 2001; Pettit et al., 1988). Building upon these findings, adolescents who believe that fighting is sometimes necessary may have specific risk factors for aggression that are similar to adolescent-onset aggressors, such that they become aggressive in response to reinforcement in their environment rather than maladaptive social information-processing.

The purpose of this study was to examine the relations between adolescents' patterns of beliefs about fighting and differences in social information-processing. More specifically, this study examined differences in social information-processing cognitions and the response-decision process between adolescents with distinct patterns of responses on a multidimensional measure of beliefs about aggression. This study built upon the previous study by Farrell and colleagues (2012) that focused on determining if adolescents displayed different patterns of beliefs about aggression and whether there were significant differences between these groups. This study extends the findings by examining relations between social information-processing variables and patterns of beliefs about aggression.

The present study was also designed to address several limitations of studies that have examined the relations between social information-processing patterns and normative beliefs about aggression. In particular, this study sought to improve upon previous work by using a more appropriate measure of social information-processing. Existing measures of social-information processing provide important information regarding social information-processing

patterns, but the content, timing, and structure of many of these measures limit the information they provide. For instance, social information-processing has typically been measured using structured interviews and self-report measures about youth's cognitions and response decisions in response to hypothetical vignettes (e.g., Crick & Ladd, 1990; Dodge, Bates, & Pettit, 1990). It is unclear whether these hypothetical situations are meaningful and difficult to handle for youth. The structure and timing of questions also do not permit respondents to share spontaneous thoughts or responses generated by placing themselves within the situation.

This study addressed these limitations by using two novel measures of cognitions and the response-decision process. The first of these is the Articulated Thoughts in Simulated Situations (ATSS) paradigm to assess social information-processing cognitions. ATSS is a think-aloud approach that allows participants to report their cognitions as they occur while listening to an audiotape that places the participant within the situation. ATSS has been used successfully to examine a range of cognitions within a variety of samples (e.g., Bettencourt, 2010). This study specifically examined cognitions regarding the importance of a tough image and reputation, hostile and benign intent attributions, beliefs about when it is acceptable to fight, beliefs about right, wrong, and fairness, and nonviolent and aggressive behavioral intentions. This study also used a measure of the response-decision process that (a) incorporates situations that are relevant and meaningful to study participants and (b) provides respondents with an opportunity to generate and evaluate their own responses. This measure assesses the types of goals, generation of responses, evaluation of responses, and outcome expectancies for responses that participants generate and for physically aggressive, provocative, and nonviolent responses.

This study also addressed gaps in the literature by examining differences in social information-processing cognitions and the response-decision process between adolescents with

distinct patterns of beliefs about aggression. Previous research has primarily focused on examining differences in social information-processing patterns between aggressive and non-aggressive youth (Crick & Dodge, 1994). No research to date could be found that has examined the relation between youths' social information-processing abilities and multiple, distinct patterns of beliefs about aggression. This study addressed this limitation by examining how adolescents with distinct patterns of beliefs (i.e., beliefs against fighting, beliefs that fighting is sometimes necessary, and beliefs supporting fighting) differ or are similar in their social information-processing cognitions and use of the response-decision process.

This study has important implications for prevention approaches aimed at reducing youth involvement in aggression. Understanding differences in social-information-processing based upon patterns of aggressive belief structures is vital given that many current interventions are focused on reducing aggression through improving social information-processing skills. For example, youths who have general beliefs supporting aggression may benefit from intervention components targeted towards changing maladaptive social information-processing biases. On the other hand, youths who have beliefs that fighting is sometimes necessary may already have problem solving patterns that are similar to their nonaggressive peers and therefore, prevention approaches within this group may need to focus on changing external supports for aggression (e.g., creating a positive classroom culture) in order to successfully to reduce aggression.

Review of the Literature

This section reviews the literature on the prevalence and impact of youth aggression, how social information-processing is related to aggression, patterns of beliefs about aggression, and how beliefs about aggression are related to social information-processing. First the research on the prevalence and impact of aggression is discussed. Next, research is presented on the social information-process, including how maladaptive biases in social information-processing are related to aggression. Next, literature on normative beliefs about aggression is discussed, including the measurement of beliefs about aggression, how these beliefs are impacted by culture, and support for multiple beliefs structures about aggression. Lastly, literature on the relations between patterns of beliefs about aggression and social information-processing is presented.

Adolescent Aggression

Adolescence has been identified as a period of increased risk for negative, social, and behavioral outcomes due to biological, psychological, social, and developmental changes (USDHHS, 2001). During adolescence involvement in aggression peaks and becomes an increasingly significant problem (Dryfoos, 1990; Roughman, 1981). This section documents the high prevalence and impact of adolescent aggressive behavior and defines different forms and functions of aggression. The high prevalence rates and negative consequences related to aggression underscore the importance of examining predictors of this construct in adolescents.

According to the CDC, youth violence and aggressive behavior in the United States are a significant problem. Youth violence represents the second leading cause of death and is responsible for over 720,000 violence-related injuries for individuals between the ages of 10 and 24 (CDC, 2008). In 2009, 32% of American high school students reported being in a physical fight in the past year (CDC, 2010). In addition, 11% of students reported fighting on school property and 18% reported carrying a weapon in the previous month. Forty-three percent of high school freshmen described hitting another student in the past 6 months (Kingery, McCoy-Simandle, & Clayton, 1997; Saner & Ellickson, 1996). In a survey of high school students, high rates of aggression were found with 16 to 20% of students reporting carrying a weapon and approximately 33 to 50% reporting physically fighting one or more times in the past month (Maguire & Pastore, 1999). Research has suggested that the highest rates of aggression and bullying occur during middle school (CDC, 2010). Moreover, reports from the CDC suggest that rates of bullying may be increasing. In 1998, 11% of students between the sixth and tenth grades reported being the victim of bullying and another 6% of students reported being both the bully victim and aggressor (Nansel et al., 2001). Comparatively, in 2009, 20% of a nationally-representative sample of high school adolescents reported being victims of bullying that occurred on school property in the 12 months prior to the survey (CDC, 2010). These high national statistics may be underestimates, underscoring the importance of addressing the prevalent problem of youth aggression (Snyder & Sickmund, 1999).

Given the prevalence of aggression, it is important to consider its long term consequences for adolescents. Studies examining aggression have consistently demonstrated its relation to a variety of adverse outcomes, including externalizing and internalizing difficulties. For example, aggression during adolescence has been linked to harmful life trajectories of antisocial behavior

and maladaptive psychological functioning (Coie & Dodge, 1998). Symptoms of disruptive behavior disorders and externalizing problems have been associated with multiple forms of aggression in adolescents (Prinstein, Boergers, & Vernberg, 2001). Aggression during adolescence has also been related to less education and higher levels of self-reported delinquency and substance use in young adulthood (Crick et al., 2006; Elliott et al., 1989; Pulkkinen & Pitkaenen, 1993; USDHHS, 2001). The research evidence suggests that aggression is not only related to, but precedes these problem behaviors. For example, one study found that the frequency of aggression during the sixth grade predicted subsequent changes in both delinquent behavior and drug use, but not vice versa. (Farrell, Sullivan, Esposito, & Meyer, 2005). A study examining physical aggression in seventh grade students also found that physical aggression predicted the development of maladjustment, such as low academic competence, low popularity, and low affiliation, in late adolescence and early adulthood (Xie, Swift, Cairns, & Cairns, 2002).

Research has also found a consistent pattern of strong relations between youths who bully others and negative outcomes. For example, youths who engage in bullying are more likely to experience peer rejection, conduct problems, anxiety, academic difficulties, and engage in rule-breaking behavior than youths who do not engage in bullying (Moffitt, Caspi, Harrington, & Milne, 2002; Pepler, Jiang, Craig, & Connolly, 2008). Youths who bully others are also likely to be victims of bullying themselves. A recent study found that about one third of children who bullied others were identified as bully-victims (Marini, Dane, Bosacki, & YLC-CURA, 2006). Youths who are bully-victims have been found to experience both social and emotional problems (e.g., anxiety, depression, peer rejection, and a lack of close friendships) that are similar to youths who are victimized only (Marini et al, 2006; Schwartz, Protcor, & Chien, 2001).

Aggression is a multifaceted behavior and contains many subtypes. Aggression has been defined as behavior suggestive of anger or irritation with the intention of an individual or group to harm others (Archer & Coyne, 2005; Brook, Rosenberg, Brook, Balka, & Meade, 2004; Davis, Sheeber, Hops, & Tildesley, 2000). This harm can be done verbally, physically, or interpersonally, and often leads to injury of another individual or their property. Examples of aggression include yelling, hitting, gossiping, or arguing (Davis et al., 2000).

Aggression can be classified as physical or relational based upon the intended goal and manner of harm used (Crick & Grotpeter, 1995). Physical aggression has been defined as physical behaviors directed at individuals with the intent to harm them, such as pushing or kicking (Coie & Dodge, 1998). For physical aggression, the cause of harm is actual or threatened physical damage (Geiger, Zimmer-Gembeck, & Crick, 2004). In contrast, relational aggression has been defined as using the removal or threat of removal of relationships to harm others' relationships or feelings of acceptance, friendship or group inclusion, or as a form of retaliation (Crick, Casas, & Ku, 1999; Crick & Grotpeter, 1995; Murray-Close, Ostrov, & Crick, 2007). Relational aggression includes behaviors like gossiping, spreading rumors, ignoring, and directly or secretly excluding a peer from an activity (Crick et al., 1999; Crick & Grotpeter, 1995). Relational aggression includes both confrontational and non-confrontational behaviors. During adolescence, most studies have suggested that boys have higher rates of physical aggression (Bartlett, 2003), whereas boys and girls exhibit comparable rates of relational aggression (Prinstein et al., 2001; Skara et al., 2008).

Aggression can also be categorized as proactive or reactive (Crick & Dodge, 1996; Dodge, 1991; Dodge & Coie, 1987). Proactive aggression has been defined as unprovoked aggression that is used to gain dominance over others. Proactive aggression is also goal-directed

and deliberate. In contrast, reactive aggression has been defined as provoked aggression that is used in response to provocation or threat and is often accompanied by anger (Crick & Dodge, 1996; Dodge, 1991; Dodge & Coie, 1987).

Life-course persistent and adolescent-onset aggression are two patterns of aggression that have been recognized in the literature. Life-course persistent or early-onset aggression is related to severe aggression and a stable pattern of aggressive behaviors from early youth through adulthood (Moffitt, 1993). Life-course persistent aggression is associated with serious aggressive behavior during adolescence and can develop into a stable pattern of criminality in adulthood. In contrast, adolescent-onset aggression develops during middle to late adolescence and discontinues during development into young adulthood (Moffitt & Caspi, 2001). Research has shown that although youths in both trajectories may display similar behaviors, adolescent-onset aggression is temporary and has distinct causes from life-course persistent aggression. For example, life-course persistent aggression is formed based upon the interaction between neurological impairment and environmental factors that results in deficits in executive functions, social information-processing, and a pattern of aggressive behavior (Caspi & Moffitt, 1995; Moffitt & Caspi, 2001; Moffitt, 1993). In contrast, adolescent-onset aggressors do not demonstrate the same pathological background as life-course persistent aggressors, and the development of aggression is related to reinforcement and punishment contingencies (Moffitt & Caspi, 2001).

Social Information-Processing and Aggression

Given the high prevalence and significant impact of youth aggression, it is important to understand the risk factors that lead to the development and maintenance of aggressive behavior. Maladaptive patterns in social information-processing or the way that youths respond to problem

situations are risk factors that have consistently been related to increased aggression (e.g., Pettit, 1997).

Social Information-Processing Theory. Crick and Dodge (1994) developed the social information-processing model to provide a framework to describe how youths select and implement responses to social situations, including instances of peer aggression and victimization. This model proposes that individuals enter a social situation with a set of their own biological capabilities and a database of memories from past experiences. Individuals then receive an array of cues from the situation and respond to the situation based upon their processing of those cues. Their responses to the situation are based upon a series of six mental steps that include: (a) the encoding of internal and external cues, (b) interpretation and mental representation of those cues, (c) selection or clarification of a goal, (d) generation of responses based on previous experience or construction of new responses, (e) deciding on a response, and (f) enacting the response.

Each step of the social information-processing model incorporates many simultaneous and circular information processes, including multiple feedback loops and the constant influence of the database of schemas and memories for past experiences. Initially, individuals selectively attend to external and internal situational cues and then encode and interpret these cues. The cue interpretation process may include one or more of the following independent processes: (a) personalized mental representations of situational cues that have been stored in long term memory; (b) an analysis of events that occurred in the situation to determine causation (causal attributions); (c) assumptions about others' perspectives in the situation (intent attributions); (d) evaluation of the self and others; and (e) evaluation of whether goals from previous social situations have been attained. These interpretational processes are significantly impacted by the

individual's internal database (acquired rules, social schemas, and social knowledge). The individual's engagement in the interpretational processes may in turn result in subsequent revisions to the information stored in memory.

After interpreting the situation, the individual selects a goal or desired outcome for the situation (e.g., getting revenge). These goals help orient the individual towards producing the desired outcome. Individuals bring goal orientations or tendencies to the situation, but also revise those goals and construct new goals in response to cues in the current situation.

Finally, the individual selects, evaluates, and enacts a response. After goals have been established, individuals access response strategies from their memory or construct new behaviors in response to social cues in novel situations. The responses generated may or may not be related to the goals identified in the previous step. Individuals then evaluate the previously generated or accessed responses using a variety of processes. This response evaluation includes an assessment of the quality and acceptability of a given response based on structured knowledge and past experiences. Response evaluation also incorporates an estimation of the expected outcome for a given response and an assessment of self-efficacy (i.e., an individual's own ability to enact the response). In the final step, the chosen response is enacted. Following this process, the internal and external feedback from the situation are processed and encoded, and the process begins again.

Although other models of social information-processing have been proposed, they all rely upon the underlying structure of Crick and Dodge's (1994) original model. For example, Lemerise and Arsenio (2000) developed a revised model of social information-processing that combines both cognitive and emotional processes by describing the role of emotion in each of the six social information-processing steps. Fontaine added to the social information-processing

model by considering antisocial motives and adding components of sociomoral congruence (2007). These models have been used as guidelines for the measurement of social information-processing skills and understanding how aggressive and nonaggressive youth differ.

Maladaptive Social Information-Processing Patterns. Youths' social information-processing patterns have been consistently related to their beliefs about aggression and their rates of aggressive behaviors. Research in social information-processing and aggression originated from an interpersonal cognitive problem-solving model that emphasized the relations between aggressive behavior and maladaptive ways of solving problems, including means-ends thinking and difficulty generating solutions and generating consequences (Shure & Spivak, 1976; Spivak & Shure, 1974). Research has demonstrated relations between aggressive behavior and biases in identifying cues within problematic situations (Dodge & Newman, 1981). For example, research has shown that youths who use aggression also jump to conclusions and have difficulty understanding social situations, such as attributing hostile intentions to others in ambiguous situations (Crick & Dodge, 1994; Dodge & Frame, 1982; Dodge et al., 1990). Response generation has also been found to relate to aggressive behavior. For example, elementary school students that engage in high rates of aggression generated fewer prosocial responses and more aggressive and ineffective responses in response to peer conflicts than did their less aggressive peers (Richard & Dodge, 1982; Rubin, Bream, & Rose-Kransor, 1991). Additionally, research has found that adolescents with high rates of aggression and delinquency were less likely to rate the consequences of rule breaking behavior as important, probable, and severe than adolescents who were low on these behaviors in an African American sample of high school students (Guerra, 1989; Guerra & Slaby, 1989).

Intervention research has provided a rigorous test for the association between social information-processing skills and aggression by experimentally testing the effectiveness of interventions that target changes in aggression through improving social information-processing skills. Reviews of school-based violence prevention programs have indicated that the majority of programs include components that focus on addressing social-cognitive patterns (Boxer & Dubow, 2001). Evaluations of these programs provide additional support for the impact of social information-processing on aggression based upon the assumption that changes in these patterns will in turn decrease aggression. For example, an intervention based on the social-cognitive development model found that changes in aggression following the intervention were directly related to changes in social information-processing (Slaby & Guerra, 1988). In this study, the intervention group received social information-processing lessons and showed improved social problem solving skills, decreased endorsement of beliefs supporting aggression, and decreased aggressive, impulsive, and inflexible behaviors. The Coping Power program has also been found to create changes in delinquency, substance use, and aggressive school behavior that were mediated by changes in social-cognitive processes in a sample of fourth and fifth grade students rated as aggressive and disruptive by their teachers (Lochman & Wells, 2002). The findings from these intervention studies suggest that changes in maladaptive social information-processing patterns can lead to decreases in aggressive behavior.

Other intervention studies, however, suggest that the relations between social information-processing and aggression may not be as clear as previously suggested. In particular, intervention programs attempting to change aggressive beliefs and through addressing social information-processing patterns have not been consistently effective. For example, intervention studies with urban or minority populations have been less successful in producing changes,

particularly when the primary focus has been on teaching children to generate alternative solutions (Weissberg et al., 1981). For instance, the LIFT program is a prevention program that targets aggression through changes in social information-processing. Evaluations of the LIFT program, however, have found that results were inconsistent and varied by age (Reid et al., 1999). The Fast Track Program, a 10-year intervention for high and moderate risk youth, led to a decrease in aggression and related externalizing symptoms for youths who were identified as being at the highest risk for aggression initially, but not for those who were a moderate risk (Bierman et al., 2007). Similar results have been found for other prevention programs. For example, another school-based universal intervention found that the intervention was associated with increases in aggression for youths who were initially rated as low risk, but was related to decreases in aggression for youths who were initially rated as high risk (The Multisite Violence Prevention Project, 2009). These findings suggest that additional factors may influence the relations between social information-processing and aggression, especially when considering different environmental contexts (e.g., high exposure to community violence or negative school climate).

Understanding the mixed results from these intervention studies can be difficult as many intervention studies do not measure social information-processing. This lack of measurement is problematic as violence prevention programs are not consistently effective in decreasing aggression. Therefore, it is not clear whether these programs are not successful in their attempts to change social information-processing patterns or whether changes in social information-processing patterns are not sufficient to produce decreases in aggression. For instance, intervention programs that do not address differences in aggressive youths based upon their varying patterns in beliefs about aggression may not be effective in making changes for all

aggressive youth. For example, the LIFT, Fast Track, and the Multisite Violence Prevention Project programs were not consistently effective in changing aggressive behavior, but it is not clear whether social information-processing skills were changed and if these changes impacted aggression as social information-processing patterns were not measured within these studies (Bierman et al., 2007; The Multisite Violence Prevention Project, 2009; Reid et al., 1999).

In addition to considering whether social information-processing relates to and creates changes in aggression, it is also important to consider whether these relations may change over time or vary based upon adolescents' environments. One longitudinal study examined the stability of social information-processing and assessed hostile attribution bias, justification of aggression, and rates of aggressive behavior (Goldweber et al., 2011). This study found four classes of youth based upon stability and changes within these variables. Two groups remained stable in their level of hostile attribution bias (either high or low) throughout the course of a year, and two groups either decreased or increased in their level of hostile attribution bias. This study found that youth whose hostile attribution bias, aggression, and beliefs that aggression is justified increased during the year, had a higher prevalence of witnessing community violence than youth who declined or remained low in these variables. Goldweber and colleagues suggested that witnessing community violence increased youths' hostile attribution bias, which in turn impacted their beliefs about and rates of aggression. These findings suggest that making assumptions about youths based upon the level of hostile attribution bias, general beliefs about aggression, and rates of aggression at one time point could be misleading. For instance, in this study youths who started out with similar patterns of beliefs, social information-processing patterns, and rates of aggression showed different patterns of change over the course of the school year.

Normative Beliefs about Aggression

Youths' beliefs, particularly their beliefs about aggression, play a key role in how they interpret and respond to social situations within the social information-processing model. These beliefs are a component of the database, which consists of memories, acquired rules, and social schemas and knowledge. Beliefs play an important role in the social information-processing model by constantly influencing each step within the model through multiple feedback loops. Social schemas reduce the workload required by processing information in a situation by simplifying the situation and context. Cognitive scripts are schemas that have been defined as programs for behavior that are stored in a person's memory. Scripts are used as guides for behavior and social problem solving that have been learned during a person's early development (Huesmann, 1988). Huesmann suggested that aggressive behavior is largely dependent upon the extent to which scripts are encoded, rehearsed, stored, and retrieved. Research has suggested that aggressive youth have more aggressive scripts than nonaggressive youth. Once encoded these scripts are believed to account for the stability in aggressive behaviors.

Normative beliefs are the filter through which scripts suggest behavior to youths. Normative beliefs have been defined as self-regulating beliefs or individualistic cognitive standards about the appropriateness and acceptability of social behaviors (Huesmann, 1988). Normative beliefs impact behavior by filtering out inappropriate behaviors, impacting an individual's emotional reaction to others' behaviors, and stimulating the use of appropriate previously learned scripts for behavior. Normative beliefs about aggression are a specific type of belief that has frequently been examined in its relation to aggressive behavior. Normative beliefs about aggression represent individual beliefs regarding the acceptability and legitimacy of using

aggressive behaviors, such as whether it is okay or necessary to engage in aggressive behaviors under varying situations of context, time, and targets. Individual normative beliefs about aggression are frequently similar to normative beliefs by peers, social groups, and societal institutions, but do not have to be consistent with the prevailing social norms.

Theory and research have consistently suggested a strong association between aggressive behavior and normative beliefs about the use of aggression. It has been suggested that aggressive youths differ in the types and content of scripts that have been learned during their early development (Huesmann, 1988). Huesmann suggested that aggressive youths have more aggressive scripts and rely more heavily upon those scripts than nonaggressive youth. Aggressive scripts develop from a combination of enactive learning (i.e., learning as a result of one's own behavior) and observational learning (i.e., learning by viewing how others' behave). It has been hypothesized that this reliance upon aggressive scripts may be due to youths being less adept at processing problem situations. Normative beliefs and cognitive scripts can be both situation specific (e.g., It's okay to hit others if they say something about your family) or general (e.g., It's okay to hit others).

Huesmann also suggested that the influence of normative beliefs may change throughout development (1988). For instance, normative beliefs about aggression are initially unstable in early childhood. These beliefs stabilize by about 10 or 11 years old and consequently become reliable predictors of aggression. Over time, individuals with stronger normative beliefs supporting the use of aggression become more aggressive. In turn, increases in aggressive behavior further strengthen normative beliefs about aggression. Individuals frequently rely upon their well-learned scripts in chaotic environments (e.g., environments that include randomness, disorder, and emotional distress) or during a confusing problem situation (e.g., Schneider &

Chein, 2003). Consequently, youths frequently engage in automatic rather than controlled processing during confusing situations due to the presence of high stress.

Normative beliefs supporting the use of aggression may be especially present in individuals within environments where aggression is considered normative and appropriate. For example, neighborhoods that are characterized by high rates of youth violence have been described as including subcultural groups that follow a code of violence (Anderson, 1990). Research findings have suggested that in high-risk urban environments, children as young as first grade learn that aggression may be an appropriate response in order to survive in a peer culture where aggression is endemic (Huesmann, 1988). For example, one study of high-risk youths ages 14 to 24 years old found that aggression was adaptive within this culture, especially for popular youth (Goldweber, 2009). Previous research has also found similar environmental supports for youths within a rural environment, such as aggression being adaptive for youths who witness community violence (Francisco, 2003).

Research testing Huesmann's model of normative beliefs about aggression has found a consistent association between normative beliefs about aggression and frequencies of aggression as reported by parents, teachers, and peers. For example, Huesmann, Guerra, Miller, and Zelli (1992) found a significant relation between acceptance of aggression and subsequent aggressive, bullying, and delinquent behavior. Research has consistently found that youths who reported beliefs approving the use of aggression have been rated as more aggressive by others, including their parents (e.g., Zelli, Dodge, Lochman, Laird, & Conduct Problems Prevention Research Group, 1999), teachers (e.g., Bellmore, Witkow, Graham, & Juvonen, 2005), and peers (e.g., Erdley & Asher, 1998) than other youths.

An examination of the association between beliefs about aggression and self-reported aggressive behavior suggests a similar pattern. Huesmann and Guerra (1997) found longitudinal associations between normative beliefs supporting aggression and later aggressive, bullying behavior in a sample of elementary students from urban neighborhoods and low income families. They suggested that children's normative beliefs become stable by fourth and fifth grade. Once stable, these normative beliefs predict aggressive, bullying behavior through young adulthood. Another study found that approval of aggressive beliefs was related to aggressive and bullying behaviors in an Asian sample of elementary and middle school students (Ang, Ong, Lim, & Lim, 2009). Findings from another study of a primarily Caucasian sample of third through seventh grade students found that beliefs that encouraged aggression assessed in the fall predicted aggression over the school year (Egan et al., 1998). A ten year longitudinal study of a national probability sample of youths ages 11 to 17 established that beliefs that legitimized aggression significantly predicted aggression at each of the seven subsequent waves (Nash & Kim, 2007). One study found that antisocial-aggressive adolescents in high school often held beliefs supporting the use of aggression (Slaby & Guerra, 1988). These beliefs supporting aggression included beliefs that aggression is a legitimate response, helps avoid a negative image, and does not lead to suffering by the victim. A cross-sectional analysis conducted by Bellmore and colleagues (2005) also found that youths who reported beliefs in the appropriateness of aggression were more likely to select hostile/aggressive response options that resulted in subsequent bullying behavior compared to youths who did not report these beliefs in an ethnically diverse sample of sixth grade students.

In addition to impacting overall rates of aggression, research has suggested that normative beliefs about aggression are consistently related to the rates of specific forms of

aggression. For example, multiple studies have found that overall normative beliefs about aggression were related to physical, verbal, and indirect aggressive behaviors (Kikas, Peets, Tropp, & Hinn, 2009; Lim & Ang, 2009). Research has also shown that beliefs about a specific form of aggression are directly related to engaging in that form of aggression. One study found that beliefs about physical aggression were associated with increased rates of physical aggression in a primarily Caucasian sample of middle schools students (Goldstein & Tisak, 2010). The same study also found that general beliefs about relational aggression were associated with increased rates of relational aggression. Within this study, adolescents reported distinct beliefs about the acceptability of varying relational aggressive behaviors, such as exclusion being more acceptable than gossiping. Beliefs about the acceptability of each specific behavior were related to engaging in that behavior. Another study of a primarily Caucasian sample of undergraduate college students found that beliefs demonstrating greater acceptance of relational aggression predicted high rates of relational aggression (Linder, Werner, & Lyle, 2010). More recently, research examining beliefs about cyber aggression in young adults has shown that normative beliefs about the use of cyber aggression were related to both relational and verbal forms of cyber aggression six months later (Wright, 2013).

Measurement of Beliefs about Aggression. The majority of previous studies and existing measures of beliefs about aggression assume a single underlying dimension regarding the appropriateness of fighting and aggression. This is not consistent with the notion that beliefs about fighting may vary across contexts (e.g., Bandura, 1973). Although some measures incorporate situational variables, they typically combine items into a single score. For example, items on the Beliefs About the Aggression and Nonviolent Alternatives Scale reflect different situational contexts, but items are used to create an overall score reflecting beliefs supporting

aggression and beliefs supporting nonviolent alternatives (Henry & Chan, 2010). By assuming that beliefs about aggression are a unidimensional construct, these studies and measures do not reflect contextual or experiential variables that may influence aggression-encouraging or discouraging cognitions. This assumption of a single underlying construct may not accurately represent complex beliefs about aggression present in social environments that provide support for the expectations that aggression will be rewarded.

One of the most widely used measures of beliefs about aggression is the Normative Beliefs about Aggression Scale (NOBAGS; Huesmann & Guerra, 1997). Multiple dimensions of beliefs about aggression were considered in the creation of the scale, but it is commonly scored to reflect two dimensions of beliefs about aggression. This scale focuses on the approval of aggression and acceptability of specific aggressive behaviors. During its development, the scale developers considered multiple dimensions based on Fishbein and Ajzen's (1975) categorization of social behaviors on the basis of "action, target, context, and time." The initial scale thus described aggressive acts that varied in these characteristics and type of provocation. Following revisions, the original seven scales/subscales were combined to form two subscales. One measured general beliefs about aggression (e.g., “It is usually OK to push or shove people around if you are angry.”). The other measured retaliation for both weak and strong provocation (e.g., “If a boy says something bad to another boy, John. Do you think it is OK for John to hit him?”). Despite the inclusion of items that incorporate context (e.g., asking about aggression against and by boys versus girls), most studies using this scale have combined the items into a single score representing total approval for aggression or two scores representing the general subscales described previously (e.g., Ang et al, 2009; Bellmore et al., 2005; Henry et al., 2000, Huesmann & Guerra, 1997; Zelli et al., 1999). This practice is counter to findings that the

patterns of relations between each of the normative beliefs scales and peer-nominated aggression broken down by gender and ethnic group varied based upon the specific scale/subscale (Huesmann & Guerra, 1997).

Other measures used to assess beliefs about aggression follow a similar approach of combining a variety of types of items into a single scale of aggression-encouraging cognitions when analyzing how beliefs about aggression predict aggression. For example, the Legitimacy of Aggression Questionnaire has been used to examine the relation between beliefs about the legitimacy of aggression and aggressive, withdrawn, and prosocial behavior (e.g., Erdley & Asher, 1998; Slaby & Guerra, 1988). This scale assesses five beliefs supporting physical and verbal aggression based upon types of provocation (e.g., physical provocation, dislike for another child) or motivation (e.g., self-defense, to get even), but combines these items into a single score. In the scale development study, however, all five subscales were useful in predicting whether a participant was classified as low on aggression, high on aggression, or antisocial. Post hoc comparisons also indicated significant differences in the youths endorsing two of the five subscales, beliefs in the legitimacy of aggression and the use of aggression helped to avoid a negative image (Slaby & Guerra, 1988). These findings indicate the potential utility of using each subscale as a unique type of normative belief about aggression.

Similarly, the Justifications for Acceptability of Beliefs about Aggression Scale has been used to examine the relation between beliefs and justifications of physically or relationally aggressive behavior and rates of physical and relational aggression (Goldstein & Tisak, 2009). This measure has been used to assess beliefs about multiple behaviors (e.g., gossip, exclusion, hitting, shoving).To assess beliefs, respondents were asked to indicate how wrong they perceived the behavior to be. To assess justification, youth were provided with judgments they made and

asked to explain their response. These responses were coded as moral (defined as reference to matters of fairness and rights or to others' psychological or physical welfare), conventional (defined as reference to social coordination, social norms, politeness, authority jurisdiction, and avoidance of punishment), personal choice (defined as reference to the act being within personal jurisdiction, preference, or prerogative), relationship maintenance (defined as reference to the preservation of a relationship), and retaliation (defined as reference to retaliating for another individual's actions). One study assessed the prevalence of each form of justification and found significant differences in the beliefs about the acceptability of different aggressive behaviors (e.g., youths generally rated gossiping as more problematic than peer exclusion, both which are components of relational aggression). For all further analyses, however, these scales were combined into one-dimensional measures of beliefs about physical aggression and beliefs about relational aggression.

Whereas the previous measures reflected the importance of context in the construction of items, other measures have not addressed context. For example, Beliefs Supporting Aggression (Bandura, 1973) is a scale highlighted by the CDC's Youth Violence Compendium that was designed to measure agreement with normative beliefs about aggression. This scale includes six items that reflect how respondents might feel or react to different forms of aggression. The items, however, do not reflect varying contexts (e.g., different levels or types of provocation). For instance, items in this scale include: "It makes you feel big and tough when you push someone around" and "If you back down from a fight, everyone will think you are a coward." Existing measures have been used to predict levels of aggression, but a unidimensional construct of beliefs about aggression may miss important distinctions that exist between groups of aggressive youth.

Impact of the Environment on Beliefs about Aggression. Bandura (1986) suggested that cognitions are predictive of behavior only to the extent that interactions within the environment are supportive of those cognitions. Therefore, if the social environment provides support for expectations that aggression will be rewarded, then aggression will be encouraged rather than suppressed. In these cases youths may hold both positive and negative beliefs regarding the acceptability of aggression depending upon the situations that are supported by the environment. For example, aggression has been positively correlated with measures of high status and can be considered a means of attaining and maintaining prominence within a peer group and to achieve social goals (Cillessen & Mayeux, 2007). These positive effects of aggression may therefore promote the belief that aggression is acceptable within certain peer situations.

Recent research has questioned whether a unidimensional construct of beliefs about aggression sufficiently captures complex structures of beliefs that exist within different environments. One recent qualitative study including a low-income African American sample of sixth and seventh graders living in neighborhoods with high rates of crime and violence found that urban adolescents have a complex structure of beliefs about aggression (Farrell et al., 2008, 2010). Within this study youths not only reported general beliefs that either supported or were against aggression, but also reported beliefs that fighting is sometimes necessary or inevitable, beliefs that involved rules of engagement dictating when fighting may be appropriate, and beliefs that fighting is sometimes justified. For example, adolescents described the necessity of fighting in response to specific acts of provocation (e.g., someone touches you or someone says something about a member of your family). Adolescents also described reasons why fighting might be necessary within specific situations (e.g., beliefs that standing up for oneself or that

fighting may be critical to survival). Therefore, youths may hold varying normative aggressive beliefs that are activated depending upon the context of the current situation. For example, the belief that fighting is sometimes necessary may be typical of youths living within certain environments where physical aggression is necessary to prevent further conflict or for survival. These types of beliefs may generalize to other environments that provide support for aggression in response to physical or specific types of verbal provocation. These normative beliefs about aggression may also be impacted by environmental factors such as the importance of standing up for oneself or the belief that fighting is critical to survival.

Environmental factors supporting aggression may be crucial to the development of patterns of beliefs about aggression. Research has suggested that the most conducive environments for learning and maintaining aggressive behavior are those where youths are reinforced for aggression (e.g., Patterson, 1986). Individuals internalize the cultural or environmental normative beliefs, and these beliefs become predictors of behaviors. One study found that African American youths were more likely to use aggressive behaviors and hold beliefs that legitimize aggression than African youths from St. Thomas (Marcelli, 2002). Marcelli suggested that these differences in beliefs and behavior were based upon differences in learning. For instance, in St. Thomas, participants reported religious cultural support for decreased aggression (e.g., church attendance). In comparison, participants reported increased modeling of aggression (e.g., aggressive discipline by parents) within the American culture. In a study using a primarily African American sample of fifth grade participants living in a high crime urban environment, perceived neighborhood danger was predictive of strong positive beliefs about aggression (Colder, Mott, Levy, & Flay, 2008). Colder and colleagues suggested that this finding was due to normative beliefs that aggression is necessary for self-protection and

instrumental goal attainment that were developed in response to their environment. Restrictive discipline was also related to high levels of aggression. The researchers suggested that these relations resulted from the transmission of fear and internal standards that aggression is an appropriate means of assuring self-protection within a high crime environment. Observing others' use of aggression (Eron, Huesmann, Lefkowitz, & Walder, 1972) and being the target of aggression (e.g., Dodge et al., 1990) have also been shown to lead to a cultural environment that increases beliefs supporting aggression.

Similarly, environmental factors supporting aggression have also been found with rural environments. For example, one study found that witnessing violence mediated the relation between parenting practices and aggressive behavior for ninth graders within rural communities (Mazefsky & Farrell, 2005). Another study of children ages 7 to 13 years found that exposure to community violence was related to maladaptive social information-processing biases and both reactive and proactive aggression within a rural setting (Francisco, 2003). A study of predictors of verbal and physical aggression in rural middle school students found that rural youths may experience similar environmental support for the use of aggression as their non-rural peers, including influence by both family and peers (Swaim, Henry, & Kelly, 2006). Social disorganization in both rural and urban areas has been shown to be related to increased aggression such that prosocial opportunities (e.g., part-time jobs and after-school activities) may be lacking and instead youths learn aggression through exposure to violence and as way to assert control over their surroundings (Bursik & Grasmick, 1993; Osgood & Chambers, 2000).

An environment with strong peer support for aggression has been found to strongly relate to patterns of beliefs about aggression and the use of aggression. Peer support for aggression may be especially influential during middle school given the increased importance of peers during

adolescence (Dishion & Andrews 1995). The increased importance of peers has been found to increase adolescents' vulnerability to the influence of negative peers. For example, a qualitative study of a primarily African American sample by Farrell and colleagues (2010) found peer support for aggression such that over half of the youths interviewed reported friend's support for fighting, peer pressure for fighting, and bystander pressure to fight. Research has also found that peer bystanders are nearby during most bullying episodes and can provide support for the cycle of violence (Kochenderfer & Ladd, 1997). For instance, peer bystanders may encourage retaliation against the perpetrator and therefore encourage ongoing aggression. Peer support for aggressive retaliation has been found to exacerbate ongoing conflicts and is related to both beliefs about when to use aggression and the frequency of aggression (Terranova, 2009). As a consequence of these findings, middle school environments may contain social norms that support violence as an appropriate and acceptable path, such as for goals focused on achieving social status or seeking revenge for perceived injustices (Fagan & Wilkinson 1998).

Additionally, the school environment is an area that can either provide support for or discourage beliefs supporting and the use of aggression. Research has consistently demonstrated the influence of a variety of school-level factors on aggression. For example, one study of middle school students found that school norms opposing aggression and favoring nonviolence and interpersonal climate (e.g., student-teacher and student-student relationships) were predictive of self-efficacy for nonviolent responses, beliefs supporting aggression, and individual-level physical aggression (Henry et al., 2011). Another study demonstrated that perceived school safety was related to perpetration of both physical and relational aggression (Astor, Meyer, Benbenishty, Marachi, & Rosemond, 2005). Some studies, however, have emphasized that the school environment may uniquely influence different forms of aggression. For example, one

study found that similar to physical aggression, perceptions of the overall school environment were related to the perpetration of relational aggression (Elsaesser, Gorman-Smith, & Henry, 2013). On the other hand, the school climate was not predictive of relational aggression.

It is important to note that environments may provide mixed messages regarding the use of aggression. In the same qualitative study conducted by Farrell and colleagues (2010), adolescents also reported support from peers and parents for nonviolent alternatives to aggression. Adolescents reported parental values against fighting that served as a support for nonviolent behavior (25% of youth) or as a barrier against fighting (42% of youth). More than half of participants also reported proximal support from an adult authority figure within their home that served as a support for nonviolent behavior or a barrier against fighting. Within this study, 89% of youths indicated that their friends' support for nonviolent behavior would serve as a support for the use of nonviolent behavior, and 40% of youths reported that support for nonviolent behavior would deter them from fighting. Therefore, this qualitative study found that adolescents' peers and parents within the same community may provide support for both aggression and nonviolent alternatives. It is important to note that some research has suggested that conditions that support aggression can exist in all settings, but may be more likely to exist in the inner-city environment than in rural or suburban environments due to severe economic and social deprivation (McLoyd, 1990). For example, African-American, Hispanic, and other minority youth disproportionately grow up in inner-city environments, placing these youth at higher risk for developing aggressive and violent behavior and beliefs supporting the use of aggression. On the other hand, other researchers have suggested that environmental support for aggression occurs strongly in both rural and urban settings, but may have distinct risk factors and developmental trajectories of aggressive behavior (Larsen & Dehle, 2007).

Further support for the influence of the environment upon beliefs about aggression is provided by research that found that gender-specific support for aggression may lead to gender differences in beliefs about aggression and the use of aggression. For example, research has characterized adolescent boys who were frequently victimized as physically weak and ineffectual (Egan & Perry, 1998; Hodges, Malone, & Perry, 1997; Olweus, 1978). Within environments that hold these beliefs, boys who are victimized may be punished for their attempts to be assertive or aggressive. One study using a primarily Caucasian sample of youths in the third through seventh grades found that for boys only, aggression-encouraging cognitions (especially aggressive values) fostered aggression when boys began the school year with above-average aggression and low victimization (Egan & Perry, 1998). The researchers hypothesized that boys who previously engaged in aggression and continued to hold beliefs supporting aggression had experienced ongoing support and reinforcement from their environment for their aggressive thoughts and actions. These findings contrasted boys who were initially high on victimization and received discouragement for aggressive behaviors. In contrast, Egan and colleagues found differing environmental support for girls' aggression, such that girls' cognitions were less strongly related to their aggressive behavior and these cognitions were most predictive of aggression when girls were victimized. The researchers suggested that within this environment, aggression is generally considered to be unacceptable for girls, but may become acceptable when the girls were victimized (Perry, Perry, & Weiss, 1989).

Environmental influence may largely explain the complex findings in the relation between beliefs about aggression and aggressive behavior in studies that examine these relations between boys and girls. For example, research examining gender differences has found different results depending on the race/ethnicity of the sample. Egan and colleagues (1998) found strong

gender differences in the support for aggression and relations between beliefs about aggression and subsequent aggression in a primarily Caucasian sample. In contrast, studies using samples from different environments or other cultures have sometimes found different patterns (e.g., similar relations for boys and girls). For example, researchers have suggested that in the African American culture, girls and boys may be socialized to be androgynous due to similar gender roles and beliefs (Belgrave, 2009). Girls within this culture have been found to be more assertive, strong, and independent causing gender neutrality to be the norm compared to girls in other cultures and environments (Hill & Sprague, 1999; Peters, 1988). Therefore girls and boys may have fewer differences in their rates and impact of aggression. These results highlight the importance of considering culture and environmental influences on beliefs about aggression. In addition, these beliefs may be more complex than just support for or against aggressive behavior.

Multiple Belief Structures about Aggression. Farrell and colleagues (2012) used a person-centered approach to examine whether beliefs about aggression reflected a unidimensional or multidimensional construct. In their study, normative beliefs about aggression were assessed using items that were written to reflect different patterns of beliefs about aggression described by youths in previous qualitative studies (Farrell et al., 2008, 2010). In the study by Farrell and colleagues (2012), findings suggested that beliefs about aggression are multidimensional such that adolescents displayed multiple patterns of beliefs regarding fighting and retaliation. A latent class analysis supported a three class model of normative beliefs about aggression. This study suggested three patterns of beliefs about aggression: beliefs against fighting (30% of the sample), beliefs that fighting is sometimes necessary (39%), and beliefs supporting fighting (30%). No gender differences were found in class membership. The majority of students agreed with items that reflected opposition to fighting (e.g., "Fighting usually causes

more problems than it solves"), although there was some variation in the frequency of these beliefs across groups. In addition, all groups had somewhat low probabilities of endorsing items reflecting beliefs supporting fighting to achieve instrumental goals (e.g., "It's okay to use physical force to get someone to do what you want").

There were also significant differences between the three patterns of beliefs about aggression. The first class reported a general pattern of beliefs against fighting. Adolescents in this class endorsed responses that reflected opposition to fighting, but did not endorse beliefs that fighting was sometimes necessary or that fighting was justified in response to provocation or to achieve instrumental goals. The second class endorsed a pattern of beliefs that fighting is sometimes necessary. Adolescents in this class agreed with responses that reflected beliefs that opposed fighting and beliefs that fighting is sometimes necessary (e.g., "Sometimes a person doesn't have any choice but to fight"). These adolescents did not report beliefs that fighting is justified in response to provocation or to achieve instrumental goals. The third class reported a general pattern of beliefs supporting fighting. This class included responses that reflected beliefs that opposed fighting, that fighting is sometimes necessary, and fighting is justified in response to provocation (e.g., "It's okay to fight someone if they spread a rumor about you"). This class did not endorse beliefs that fighting is justified to achieve instrumental goals.

Farrell and colleagues (2012) built upon their finding by identifying characteristics that differentiated youths with each pattern of beliefs. For example, in examining differences in behavior and adjustment, youths who reported beliefs that fighting is sometimes necessary did not show the same high frequency of aggression or consistent patterns of adjustment problems that are typical of youths with general beliefs supporting the use of aggression. Youths who reported beliefs that fighting is sometimes necessary also differed from youths who held beliefs

against the use of aggression such that they reported higher levels of anxiety and poorer management of anger. Youths who reported beliefs that fighting is sometimes necessary had an increased likelihood of making a physically aggressive response, increased self-efficacy for aggression, and were more concerned about their popularity and image among their peers when compared with adolescents reporting beliefs against fighting. However, these same beliefs were lower than among youths with general beliefs supporting aggression.

Farrell and colleagues (2012) also found differences between groups based on cognitions about the use of aggression. Adolescents with beliefs that fighting is sometimes necessary and beliefs against aggression rated physically aggressive responses as less effective than those with beliefs supporting aggression. Youths who reported beliefs that fighting is sometimes necessary and youths who reported beliefs against fighting also reported similar cognitions related to the use of nonviolent strategies, such as similar intentions for using nonviolent responses, expectations for the effectiveness of nonviolent responses, and self-efficacy for nonviolent responses. These findings suggest that youths who believe fighting is sometimes necessary were more similar to youths with beliefs against the use of aggression in their evaluation of physically aggressive and nonviolent responses compared to youths with beliefs supporting the use of aggression.

An examination of environmental variables indicated that youths who believed that fighting is sometimes necessary reported mixed support for both aggressive and nonviolent behavior. For example, youths reporting beliefs that fighting is sometimes necessary indicated increased peer and parental supports for fighting compared with youths with beliefs against fighting. These findings suggested that youths who believe fighting is sometimes necessary may have external supports for aggression (i.e., parents and peers). Youths with beliefs that fighting is

sometimes necessary also reported levels of parental support for nonviolence that were similar to youths with beliefs against aggression.

It is important to note that within the study by Farrell and colleagues (2012) there was a fairly high level of endorsement of beliefs against the use of fighting even among adolescents who felt it was sometimes necessary and those who held general beliefs supporting aggression. All groups had a greater than 65% probability of agreeing with beliefs against aggression. The combination of frequent endorsement of beliefs against fighting by all youths and distinct classes with respect to other beliefs about aggression suggests that beliefs about fighting are multidimensional.

Given the impact of environmental influences on beliefs about aggression described previously, it is not surprising that Farrell and colleagues (2012) found differences in class membership based upon race/ethnicity and family structure (i.e., two-parent family, single mother, single father, etc.). African American youths were more likely than Caucasian youths to belong to the class that endorsed general beliefs supporting aggression (i.e., fighting is sometimes necessary and fighting is justified in response to provocation) relative to the class that only endorsed beliefs against aggression, but there were no differences between African American and Caucasian adolescents in class membership between beliefs against aggression and beliefs that fighting is sometimes necessary. Additionally, adolescents living with a single mother and another adult (not the biological father) were more likely to be in either the class that endorsed general beliefs supporting aggression or that fighting is sometimes necessary.

Recent longitudinal research assessing different groups of youths based upon their beliefs about aggression have also found multiple patterns of beliefs about aggression for aggressive youth. For example, one study including youths in the third through sixth grades found that

internal thought process and judgments were not consistent for all youths engaged in elevated levels of aggression (Frey, 2011). Another longitudinal study assessing hostile attribution bias, justification of aggression, and rates of aggressive behavior found four groups of youths that differed based upon the stability of these constructs. In this study, two groups remained stable throughout the course of a year and two groups either decreased or increased in these variables during the year (Goldweber, Bradshaw, Goodman, Monahan, & Cooley-Strickland, 2011). Goldweber and colleagues also found that youths who increased in aggression and in their beliefs that aggression is justified had a higher prevalence of witnessing community violence than youths who declined or remained low in these variables. Based on these findings, the researchers suggested that knowledge of youths' rates of aggression at one time point was not sufficient to understand how the aggressive behavior developed or might change over time.

Patterns of Beliefs about Aggression and Social Information-Processing

Differing patterns of beliefs about aggression may reflect different patterns of risk factors and may be related to different trajectories of aggression (i.e., early-onset and adolescent-onset aggression; Moffitt, 1993). Youths with general beliefs supporting aggression may be representative of early-onset aggression with a life-course persistent pattern of aggression. Youths with slightly lower levels of aggressive behavior that identified beliefs that fighting is sometimes necessary and demonstrated similar judgments about nonviolent behavior as nonaggressive youth may be representative of adolescent-onset aggression. Youths with adolescent-onset aggression may display similar behaviors to early-onset youth, but their behavior does not extend into adulthood and frequently has distinct causes (Moffitt & Caspi, 2001). Research examining the development of aggression separately for boys and girls has indicated that there is a gender difference in the percentage of youths from each gender in either

group of aggression. For example, one study found that boys were more likely than girls to be categorized as adolescent-onset (26% and 18%, respectively) and life-course persistent (10% and 1%, respectively) aggressors (Moffitt & Caspi, 2001).

Given the strong association between social information-processing patterns and aggression, it is important to understand differences in cognitions and responses to social situations between groups of youth who report varying beliefs about or rates of aggression. Research comparing differences between life-course persistent aggressors and adolescent-onset aggressors have found differences in the role of social information-processing in the development of aggression. Life-course persistent aggression begins with the interaction of neurological impairment (e.g., neurological abnormalities, decreased intelligence scores, decreased reading ability, and decreased memory; Moffitt & Caspi, 2001) and environmental factors. This interaction creates deficits in language-based verbal skills and executive functions that lead to maladaptive social information processing and a restricted behavioral repertoire (Caspi & Moffitt, 1995; Moffitt, 1993). For example, one study examining the development of life-course persistent aggression found that social problem-solving (increased likelihood of generating aggressive responses and decreased likelihood of generating relevant or prosocial responses) was significantly related to aggression (Pettit, et al., 1988). Life-course persistent aggression is maintained as youths who engage in aggressive behaviors at an early age are kept separate from conventional social outlets and opportunities (Pettit et al., 1988). This leads to a lack of opportunity to develop prosocial skills and increased tracking towards deviant peers who have similar cognitions and provide models for and reinforcement of aggression.

In contrast, research has suggested that adolescent-onset aggression develops due to a different set of risk factors. Moffitt (1993) suggested that the onset of adolescent-onset

aggression is not explained by the social information-processing model, but is related to reinforcement and punishment contingencies. In addition, research has found that adolescent-onset aggressors have a more normative development in terms of parenting, neurocognitive risk, temperament, and inattention-hyperactivity and do not demonstrate the same pathological background as life-course persistent aggressors (Moffitt & Caspi, 2001). Research has also suggested that adolescent-onset aggression begins during puberty during which time healthy adolescents engage in aggressive behaviors due to the experience of dysphoria during relatively roleless years when they have biologically matured, but do not have mature privileges and responsibilities (Moffitt & Caspi, 2001). During this time, aggression becomes normative as a means for adolescents to gain autonomy due to conflicts with their parents, win affiliation with peers, and hasten social maturation (Moffitt & Caspi, 2001; Pettit et al., 1988). For example, research has found that youths who engage in adolescent-onset aggression gravitate towards peer groups that promote behaviors at odds with parental standards and conventional structures (Pettit et al., 1988) and have a strong personality trait of social potency (Moffitt et al., 1996).

The development of adolescent-onset aggression has also been linked to the timing of puberty and the importance of delinquent peers (Caspi et al., 1993; Moffitt et al., 2001). For example, Werner and Crick (2004) have described association with delinquent peers as a risk factor for aggression. Their study found that youths who befriended aggressive peers became increasingly aggressive themselves between the third and fourth grades. Moffitt (1993) suggested that early maturing boys and girls may also engage in adolescent-onset aggression and delinquent behavior as they attempt to close the "maturity gap." This gap occurs as youths who biologically mature early are not afforded social maturity or adult social status. In order to bridge this gap, early-maturing youths engage in aggressive and delinquent behaviors that allow them to

increase their feelings of autonomy, independence, and freedom from their parents' control. For example, youths who come from single-parent households may be expected to take on mature responsibilities at home (e.g., cleaning, providing care for younger siblings) (Seltzer, 1994), and may therefore be at greater risk for engaging in adolescent-onset aggression. Consistent with these findings, youths who described patterns of beliefs that fighting is sometimes necessary reported increased importance of popularity and tough image with peers than youths who only held beliefs against fighting (Farrell et al., 2012). In addition, youths from a household with a single mother and another adult (not the biological father) reported more beliefs that fighting is sometimes necessary than beliefs against aggression. This suggests that these adolescents may be reasonably adjusted, but may behave in an aggressive way to gain social status or to prevent further confrontations.

Moffitt (1993) suggested that life-course persistent aggressors demonstrate maladaptive social information-processing patterns that are not present among adolescent-onset aggressors. Other research has extended these findings to examine the differences between life-course persistent and adolescent-onset aggressors in specific components of the social information-processing model. For example, an examination of differences in cognitions found that life-course persistent aggressors concentrate on hostile or aversive social cues Crick & Dodge, 1996; Pettit et al., 1988). Another study of young children demonstrated that social information-processing biases mediated the relation between early environment and aggression (Dodge et al., 1990). This study found that maltreatment in early childhood was related to a bias towards hostile intent attributions and decreased attentiveness to social cues. These biases were then predictive of an early-onset of aggression consistent with life-course persistent aggression.

Research has also found differences in response generation and goals between life-course persistent and adolescent-onset aggressors. Generally life-course persistent aggressors demonstrate a restricted behavioral repertoire in response to a problem situation (Caspi & Moffitt, 1995; Moffitt, 1993). In addition, research has found that early-onset aggressive youths have a higher likelihood of generating aggressive responses (Pettit et al., 1988). Early-onset aggressive youths also have a lower likelihood of generating relevant responses and prosocial responses in response to problem situations (Pettit et al., 1988; Slaby & Guerra, 1988). In examining differences in goals, aggressive children seek instrumental goals (e.g., getting what they want) and revenge or retaliation goals against individuals who present obstacles to those goals (Erdley & Asher, 1998; Slaby & Guerra, 1988). Research has not focused on examining other components of the social information-processing model (e.g., outcome expectancy) or differences between youths with different normative beliefs about aggression.

Statement of the Problem

The purpose of this study was to establish whether adolescents' patterns of beliefs about fighting are related to differences in their social information-processing. In order to achieve this goal, the study used a multidimensional measure of beliefs about aggression that reflects the notion that beliefs about fighting may vary based upon the specific situation. This study also used sensitive and interactive measures of social information-processing.

One limitation of previous research is that the majority of studies have focused on assessing beliefs about aggression as a single underlying dimension. This focus has limited the ability to examine cultural patterns in beliefs about aggression and differences in youths based upon their belief patterns. Existing measures either (a) do not consider or reflect beliefs about the appropriateness of fighting that may be influenced by context (e.g., Bandura, 1973) or (b) incorporate situational variables, but group items together into an overall score reflecting beliefs about aggression (e.g., Huesmann & Guerra, 1997). Consequently, existing measures do not sufficiently assess the complexity of adolescents' beliefs about aggression. This finding is reflected in recent qualitative research that has found that beliefs about the appropriateness of fighting are multidimensional and the patterns of beliefs about aggression may vary depending upon the specific sample (e.g., Farrell et al., 2012). Examining differences between groups of youths with varying beliefs about aggression is critical. For instance, current interventions may only be successful in changing cognitions and behaviors of chronically aggressive youths who generally support aggression and may not be targeting external variables that are more influential

for youths who believe fighting is sometimes necessary. This study addressed the limited focus and measurement limitations of previous studies by separating adolescents into classes that differ by their beliefs about aggression in order to examine unique differences that occur between each group.

Existing measures of social information-processing contain limitations that reduce their impact and utility. Although they may provide important information, their content, structure, and timing is limited. Previous studies have generally used structured interviews and self-report measures linked to hypothetical vignettes (e.g., Crick & Ladd, 1990; Dodge et al., 1990; Zelli et al., 1999). Hypothetical vignettes are typically selected based on their supposed relevance to social situations experienced by youths within the study (Crick & Dodge, 1994). Although there is evidence that the chosen situations are relevant, it is unclear whether they represent problems that the participants consider meaningful and difficult to handle. For example, measures assessing the interpretation of cues (e.g., intent attributions, self-evaluations, and evaluations of others) and the response-decision process (e.g., response generation) have frequently been assessed using variations of situational vignettes developed by Dodge and Frame (1982). These vignettes include both negative-outcome stories directed at the participant (e.g., standing on the playground and getting hit hard in the back with a ball thrown by a peer) and ambiguous-outcome stories (e.g., losing a pencil and then later seeing a peer holding it in his hand). These situations may be relevant for youths being assessed, but may not represent the most frequently encountered or salient types of situations encountered by participants.

The content of measures assessing the response-decision process has also been limited by a narrow focus on only a few individual components of social information-processing rather than multiple steps of the model. For example, the Adolescent Social Problem Solving Scale is a self-

report measure that assesses the ability to generate a variety of responses and the quality/effectiveness of those responses (Kennedy, 1983). This measure does not, however, assess other components of the process. Other measures include multiple components, such as response generation, response selection, and outcome expectancy, but do not assess other steps of the model, such as goals (Marsh, Serafica, & Barenboim, 1980). This narrow focus has limited the ability to see how individual components of the social information-processing model are interrelated. Evaluating the relations between components is important given that the social information-processing model is an ongoing interactive process between the steps. For example, when evaluating the effectiveness of a response, it is important to consider each child's individual goals for the situation.

The structure and timing of questions about the situations have also limited the responses youths could select and has not permitted respondents to share spontaneous thoughts or responses generated by placing themselves within the situation. In measures using hypothetical vignettes, youths are frequently asked about a series of specific responses related to each vignette. By providing specific responses or goals for students to select from, these measures limit the variety of ways youths can respond to and evaluate a situation. This structure does not permit respondents to share spontaneous thoughts or responses generated by placing themselves within the situation. For example, one measure used to assess the response-decision process asked participants questions about goals, responses and consequences, but these questions were close-ended (i.e., followed by specific responses for respondents to choose from rather than asking them to generate their own; Slaby & Guerra, 1988). In other measures, respondents have been asked to respond in a variety of close-ended formats, including Likert-type scales in self-report questionnaires (e.g., VanOostrum & Hovarth, 1997).

Other measures are structured to allow a greater variety of responses, but the coding of responses is limited and may not reflect the richness of responses. For example, a measure used by Crick and Dodge (1994) has been used frequently to assess outcome evaluation by presenting respondents with hypothetical situations and asking respondents "what would happen" if they responded to the problem situations by selecting from a variety of provided responses. Despite the potential variety of responses, researchers have typically only assessed the number of possible reasonable outcomes youths were able to generate or whether the outcome content was desired or not. Another measure using a similar procedure asked youths how they would respond to a problem situation, but only coded the number of separate appropriate responses rather than coding themes that reflected the diversity of responses (Marsh et al., 1980). Limitations of such methods highlight the need for a different approach to the assessment of social information-processing cognitions and the response-decision process. In other words, existing measures impose a structure that may not provide youths an opportunity to articulate the particular factors that characterize their thought processes or openly generate and evaluate their goals and responses to situations that are meaningful and relevant.

This study addressed the measurement limitations of previous studies by using innovative approaches to assess social information-processing patterns. Specifically, this study examined the database, step one (encoding of cues), step three (clarification of goals), step four (response access or construction), and step five (response decision through response evaluation) within the social information-processing model. Social information-processing cognitions and adolescents' internal database were assessed by an ATSS measure of social information-processing skills. The ATSS is a think-aloud approach to cognitive assessment that measures cognitions by having participants verbalize their thoughts and responses out loud as they occur. In the ATSS

procedure, participants listen to an audio-taped scenario that is divided into five to eight brief segments (10-15 seconds). Following each segment, participants are prompted to verbalize what they are currently thinking during a 30-second response segment (Rayburn & Davison, 2002). The use of audio-taped simulations allows participants to develop their own images of the situation, which makes the situations personally meaningful and relevant. The ATSS approach has a couple of advantages over paper-and-pencil measures and structured interview formats. The unstructured format of ATSS gives participants greater freedom in the content of their responses compared to self-report questionnaires where choices are provided. In addition, asking participants to think aloud immediately after brief audio segments of a situation allows immediate cognitive processing to be recorded. ATSS also provides the experimenter with control over the types of situations presented while facilitating the gathering of data on participant's situation-specific responding (Davison, Vogel, & Coffman, 1997).

The ATSS has been used to assess cognitions related to a variety of behaviors and used successfully with both adults (e.g., Eckhardt, Barbour, & Davison, 1998; Eckhardt & Jamison, 2002; Eckhardt, Jamison, & Watts, 2002) and youths (DiLiberto, Katz, Beauchamp, & Howells, 2002; O'Brien, Margolin, John, & Krueger, 1991; Rayburn et al., 2007). For example, the ATSS paradigm was used to assess cognitions of an ethnically diverse sample of aggressive and non-aggressive high school age adolescents using simulated depictions of provocative peer interactions (DiLiberto et al., 2002). This study found that males expressed more aggressive intent compared to their female counterparts and aggressive youths expressed more anger and aggressive intent compared to nonaggressive youths. The ATSS was also used successfully with the same sample as the current study to examine differences in cognitions between four groups

of youth: aggressive-victims, aggressors, passive-victims, and well-adjusted youths (Bettencourt, 2010).

This study also assessed the response-decision process (i.e., real-time responses, goals, and evaluation of social situations) using a novel measure. The interview-based measure builds upon previous measures using hypothetical vignettes, but addresses the previously described limitations. To ensure their relevance to participants, situations used for this measure were selected based upon their demonstrated relevance and difficulty for youths in previous qualitative studies (Farrell et al., 2006; Farrell, Erwin et al., 2007). Participants were also provided the opportunity to tailor these situations to fit their own experiences. The interview also provides participants with the opportunity to demonstrate their ability to use the social information-processing model by having youths provide and evaluate their own responses to problem situations. For example, this measure assesses similar components of the social information-processing model as a commonly used interview by assessing hostile attribution bias, response generation, response evaluation, and assessment of goals (Dodge, Laird, Lochman, & Zelli, 2002). The interview that was used for the current study builds upon this measure by asking participants to evaluate their own responses and generate their own goals rather than only responding to questions about predetermined responses and goals. In addition, consistent with previous measures of the response-decision process, the interview for this study also asked participants to evaluate a variety of predetermined responses. Analyses were designed to reflect the richness of youth responses. For example, consequences generated for responses were coded to reflect the number of unique responses generated, to describe the content of the generated consequences, and to assess the accuracy of generated consequences.

The purpose of the current study was to determine how adolescents that display distinct patterns of beliefs regarding fighting differ in their social information-processing cognitions and response-decision processes. This study builds upon the previous study by Farrell and colleagues (2012) that focused on determining if adolescents displayed different patterns of beliefs about aggression and whether there were significant differences among these groups. This study was conducted using secondary analyses based upon the same data set and participants. The study by Farrell and colleagues was conducted using the first wave of data collected in 2008. This study used subsequent waves of data to replicate the beliefs structure found previously. In addition, this study extended the findings of the previous study by examining differences in social information-processing variables between the patterns of beliefs about aggression.

It was hypothesized that this study would replicate the findings by Farrell and colleagues (2012) and that three groups of adolescents would emerge: (a) adolescents who hold beliefs against fighting; (b) adolescents who hold beliefs generally supporting fighting; and (c) adolescents who hold beliefs that fighting is sometimes necessary. This hypothesis is supported by qualitative research that also found similar themes of beliefs about aggression (e.g., Farrell et al., 2008, 2010).

In general, it was hypothesized that adolescents who hold beliefs that fighting is sometimes necessary would demonstrate social information-processing skills similar to adolescents who hold beliefs against fighting and more developed and less maladaptive social information-processing biases than adolescents who hold beliefs that generally support aggression. It was hypothesized that youths develop and maintain these different patterns of beliefs and aggressive behaviors through distinct risk factors and reinforcing supports (see Figure 1). This general hypothesis is supported by research that differentiates life-course persistent

aggressors from adolescent-onset aggressors or non-aggressive youths based upon social information-patterns. For example, the current literature has demonstrated that maladaptive social information-processing patterns are related to increased rates of aggression (Shure & Spivak, 1976; Spivak & Shure, 1974). Research examining environmental influences, however, has suggested that aggression can be adaptive, and therefore it is hypothesized that adolescents who hold beliefs that fighting is sometimes necessary will not show the same biases in problem solving as their aggressive behaviors may be appropriate considering the supports within their environment (e.g., Fagan & Wilkinson 1998).

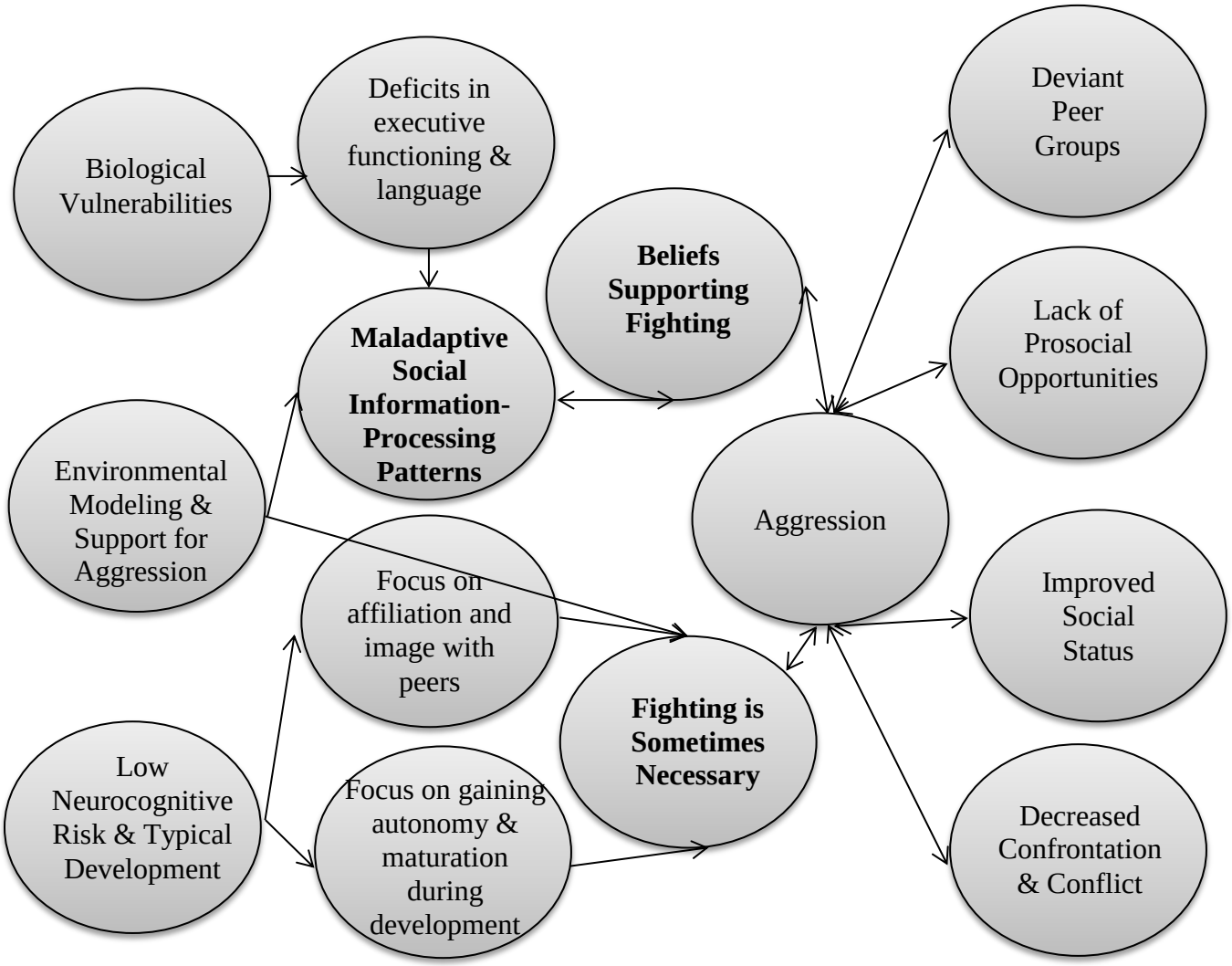

*Figure 1.*Hypothesized development of aggressive behaviors for youths with beliefs supporting fighting and that fighting is sometimes necessary.

More specifically, it was hypothesized that adolescents who generally support aggression would more often report cognitions of hostile attribution bias and behavioral intentions of aggressive behavior than adolescents who believe fighting is sometimes necessary or hold general beliefs against aggression. These hypotheses are supported by previous research that found that life-course persistent aggressors concentrate on hostile or aversive social cues and that reactively aggressive children are prone to misinterpreting peers' intentions (Crick & Dodge, 1996; Pettit et al., 1988). In addition, it was hypothesized that adolescents who hold beliefs against fighting would be more likely to hold benign intent attributions and intentions for nonviolence than members of the other groups.

It was hypothesized that cognitions regarding beliefs about the use of aggression assessed by the ATSS would replicate that of the three patterns of beliefs about fighting from the self-report measure. For example, it was hypothesized that both adolescents with beliefs supporting aggression and that fighting is sometimes necessary would more frequently report that it is okay to fight in response to physical aggression than adolescents with beliefs against aggression. It was also hypothesized that adolescents generally supporting aggression would more frequently report that it is okay to fight in response to nonphysical aggression than members of the other groups. In addition, it was hypothesized that all groups would report some beliefs against fighting on the ATSS. It was hypothesized, however, that adolescents with beliefs supporting aggression would be less likely to report beliefs against aggression on the ATSS than members of the other groups. These hypotheses are supported by differences in beliefs about physically aggressive and nonviolent responses initially found by Farrell and colleagues between the three patterns of beliefs about aggression (2012).

It was also hypothesized that adolescents who hold beliefs that fighting is sometimes necessary would be more likely to generate cognitions focused on maintaining a tough image and reputation than adolescents who generally oppose fighting or generally support fighting. This hypothesis is supported by research that indicated adolescent-onset aggressors were more focused on social potency, affiliation with their peers, and appearing to be more mature than their peers (Moffitt et al., 1996). This study also included exploratory analyses to examine differences in beliefs about right, wrong, and fairness related to the pattern of beliefs about aggression.

In comparing the response-decision process between groups with different patterns of normative beliefs about aggression, it was hypothesized that adolescents who hold beliefs supporting aggression would generate more goals focused on revenge and instrumental-control (getting what the youth desires in that situation), more aggressive responses, and fewer prosocial alternatives with fewer numbers of responses in general than adolescents with other patterns of beliefs about aggression. These hypotheses are supported by research describing differences in the development between life-course persistent and adolescent-onset aggressors (Caspi & Moffitt, 1995; Crick & Dodge, 1996; Erdley & Asher, 1998; Moffitt, 1993; Pettit et al., 1988; Slaby & Guerra, 1988).

Previous research has not compared youths with varying patterns of aggression or normative beliefs about aggression on their open-ended evaluation of aggressive and prosocial responses. It was hypothesized that adolescents with beliefs supporting the use of aggression would be less likely to evaluate positively and use prosocial responses compared to adolescents with beliefs that fighting is sometimes necessary and beliefs against aggression. It was also hypothesized that there would be no significant differences between the remaining two groups.

Additionally, it was hypothesized that adolescents with beliefs that fighting is sometimes necessary would be less likely to evaluate positively and use physical aggression than adolescents with beliefs supporting aggression, but more likely than adolescents with beliefs against aggression. These hypotheses are based upon differences in the ratings of physically aggressive and nonviolent responses found between groups by Farrell and colleagues (2012). Previous qualitative research has also found support for youths being exposed to and using nonviolent responses within this environment (Farrell et al., 2010). Research has also shown that youths with high levels of aggression do not rate nonviolent responses as effective as youths with lower levels of aggression (Farrell et al., 2012).

Method

Participants

This study involved secondary analyses of data from sixth and seventh grade students from two urban middle schools and a semi-rural middle school in an adjoining county located in the Southeastern United States who participated in the Inclusive Violence Prevention Project (IVP; Sullivan, Sutherland, & Farrell, 2009). IVP evaluated the impact of a school-based violence prevention curriculum. Potential participants in this study included all students in the sixth grade from 2008-2009 and the seventh grade from 2009-2010 who were not in self-contained homerooms. The urban schools served a predominantly African American student population (83-85%). The semi-rural county middle school was located in a rural setting within close proximity to the urban area (i.e., classified as "Rural Fringe" by the Census Bureau). This school served a significantly more diverse student population (i.e., a high percentage of both African American and Caucasian participants, $p < .01$) than the urban schools. There were also significant differences in family structure between the urban and semi-rural county middle schools. The majority of students in the urban schools did not live with both parents (23-28%). In contrast, the majority of students in the semi-rural county middle school lived in two-parent families (54-59%).

Participants in IVP completed a battery of measures including the Beliefs about Fighting Scale at the beginning and end of the sixth and seventh grades. A randomly selected subset of students ($N = 148$) completed ATSS and PSI at the end of the seventh grade. An additional

randomly selected subset (N = 160) completed the ATSS at the end of the sixth grade. The current study made use of all available data for each set of hypotheses. This involved three samples drawn from the same data set, including (a) a latent class derivation sample; (b) the ATSS sample; and (c) the PSI sample.

The latent class sample included all students who completed the Beliefs about Fighting Scale (N = 435). In order to have concurrent measures, survey data from Wave 2 were included for those students who completed ATSS in the sixth grade and data from Wave 4 for those who completed ATSS and the Problem-Solving Interview (PSI) in the seventh grade. Next, if participants only completed the Beliefs about Fighting scale at either Wave 2 or Wave 4, than that wave of data was used. A randomization procedure was used to select Wave 2 or Wave 4 survey data for students who did not complete ATSS or PSI. Table 1 reports sample demographics for the latent lass sample by setting. The sample was about evenly divided between boys and girls (46% male), and all trends for each setting described previously were maintained for this sample. Given the lack of published research using the ATSS and PSI interviews, additional self-report measures of behavioral intentions for effective nonviolent responses and physical aggression, perceived effectiveness of effective nonviolent responses and physical aggression, values or goals (i.e., revenge and prosocial) were included in the study. The latent class sample was also used for these comparisons as these self-report measures were completed at the same time as the Beliefs about Fighting measure.

The ATSS sample included the subset of students in IVP who completed the ATSS interview at either Wave 2 or 4. Participants were randomly selected from each school roster and the sample was evenly divided across type of school and gender. After the consent and assent process, 308 students completed the ATSS interview. Of those students, 160 participants

Table 1.

Latent Class Analysis Sample Demographics by Setting

Variable	City	County	Total	Statistic	df	*p*
Number of Participants	236	198	434			
Age (M, SD)	12.80 (0.79)	12.73 (0.68)	12.77 (0.74)	0.83[a]	428	0.406
Gender				0.03	1	0.865
% Boys	45.8	44.9	45.4			
Race/Ethnicity				139.41	4	0.000
% African American	84.5	38.4	63.3			
% Caucasian	0.9	46.0	21.6			
% Hispanic/Latino	1.7	1.0	1.4			
% Multiracial	11.2	10.6	10.9			
% Other	1.7	4.0	2.8			
Family Structure				60.90	4	0.000
% Two parent	20.7	55.2	36.4			
% Single mother with other adult	35.8	17.0	27.2			
% Single mother without other adult	25.4	15.5	20.9			
% Father without mother	6.5	8.2	7.3			
% Other	11.6	4.1	8.2			
Special Education Status				0.02	1	0.899
% Yes	16.1	15.7	15.9			
Intervention Condition				3.07	1	0.08
% Control	58.9	50.0	55.1			

Note. Test statistics are chi-square values except where noted.
[a] Independent sample t-test.

completed the ATSS interview in the spring of 2009, and 148 completed the ATSS interview in the spring of 2010. Four of these students who completed the interview in the spring of 2010 had missing data on the Beliefs about Fighting measure and were therefore not included in the analyses. The final ATSS sample had 304 participants. The ATSS sample was a subsample of the latent class sample and had similar demographics (see Table 2). A comparison of participants in the ATSS sample to those participants not included in the ATSS sample using chi-square tests indicated that these samples were not significantly different on gender, ethnicity, family structure, special education status, or intervention condition ($p > .05$). Participants in the ATSS sample were significantly younger than participants not included in the ATSS sample χ^2 (4) =

15.611, $p = .004$. This finding reflects the fact that the ATSS sample included more participants that were interviewed in the sixth grade than in the seventh grade.

Table 2.

ATSS Sample Demographics by Setting

Variable	City	County	Total	Statistic	df	*p*
Number of Participants	165	139	304			
Age (M, SD)	12.78 (0.74)	12.62 (0.63)	12.71 (0.70)	1.91[a]	301	0.057
Gender				0.06	1	0.813
% Boys	41.8	43.2	42.4			
Race/Ethnicity				101.15	4	0.000
% African American	85.9	39.6	64.6			
% Caucasian	1.2	47.5	22.5			
% Hispanic/Latino	0.6	1.4	1.0			
% Multiracial	11.7	7.9	9.9			
% Other	0.6	3.6	2.0			
Family Structure				43.84	4	0.000
% Two parent	21.5	57.7	38.0			
% Single mother with other adult	35.0	16.1	26.3			
% Single mother without other adult	22.7	14.6	19.0			
% Father without mother	8.6	7.3	8.0			
% Other	12.3	4.4	8.7			
Special Education Status				0.48	1	0.488
% Yes	15.8	12.9	14.5			
Intervention Condition				3.04	1	0.08
% Control	62.4	52.5	57.9			

Note. Test statistics are chi-square values except where noted.
[a] Independent sample t-test.

The PSI sample included 148 students randomly selected to participate in the Problem-Solving Interview. All these students completed the PSI in the seventh grade (Spring 2010). Four of these students had missing data on the Beliefs about Fighting measure and therefore were not included in the analyses. The final sample of 144 participants was similar demographically to the two previous samples (see Table 3). A comparison of participants in the PSI sample to participants not included in the PSI sample using chi-square tests indicated that these samples were not significantly different on gender, ethnicity, family structure, special education status, or

intervention condition ($p > .05$). Participants in this sample were significantly older than participants not included in the PSI sample $\chi^2 (4) = 51.46$, $p < .001$. This reflects the fact that this sample only included seventh graders.

Table 3.

PSI Sample Demographics by Setting

Variable	City	County	Total	Statistic	df	*p*
Number of Participants	68	76	144			
Age (M, SD)	13.28 (0.58)	13.02 (0..42)	13.15 (0.52)	2.16[a]	141	0.002
Gender				0.05	1	0.868
% Boys	44.1	46.1	45.1			
Race/Ethnicity				44.28	4	0.000
% African American	83.8	38.2	59.7			
% Caucasian	2.9	50.0	27.8			
% Hispanic/Latino	1.5	0.0	0.7			
% Multiracial	11.8	9.2	10.4			
% Other	0.0	2.6	1.4			
Family Structure				15.34	4	0.004
% Two parent	21.2	52.0	37.6			
% Single mother with other adult	28.8	16.0	22.0			
% Single mother without other adult	30.3	18.7	24.1			
% Father without mother	7,6	8.0	7.8			
% Other	12.1	5.3	8.5			
Special Education Status				3.56	1	0.071
% Yes	22.1	10.5	16.0			
Intervention Condition				0.22	1	0.636
% Control	61.8	57.9	59.7			

Note. Test statistics are chi-square values except where noted.
[a] Independent sample t-test.

Procedures

Students were recruited as a part of the larger IVP project. All study procedures were reviewed and approved by the Institutional Review Board of Virginia Commonwealth University. Students in all non-self-contained homerooms were approached individually or in small groups to introduce the project and review assent and consent forms. During the consenting process, participants were informed of their rights, including the option to decline or

limit their participation at any time with no negative consequences. Adolescents and their parents received copies of the consent forms that included contact information for study staff and for the University's Office of Research Subjects' Protection. Students received a $5 gift card (i.e., Walmart) for showing the consent form to their parents and returning it to research staff, regardless of whether they or their parents agreed to participate. Once active parental consent and student assent were obtained, students were scheduled to complete assessments at the participating middle schools. Students also received a $10 gift card for participating in the survey, whether or not they opted to limit their participation.

The current study was conducted as a part of a larger study investigating risk and protective factors for aggressive and nonviolent behaviors from the fall of 2008 to the spring of 2010. The IVP project incorporated Second Step, a middle school violence prevention program focused on building prosocial skills and assertive, nonphysical methods of addressing conflict. Self-report measures were collected using a Computer Aided Personal Interview (CAPI). Questions were displayed visually on the computer screen while students listened to audio recordings of each question through headphones worn by participants in order to compensate for any reading difficulties. Students independently responded to questions using the laptop mouse or touch pad to select their answers for each question. Research assistants were available to assist participants who had questions or experienced difficulties and read instructions regarding the purpose of the testing, confidentiality, and the option not to participate prior to administering the measure. Students who chose not to participate in the study were asked to leave the room.

Participants were randomly selected from those who completed the CAPI measures to complete the ATSS interview in the spring of 2009 or both the ATSS and PSI interviews in the spring of 2010. The consent and assent forms previously completed for the CAPI measures

indicated that students may be selected to complete an additional assessment. Revised consent and assent forms were required for a subset of participants who were selected for this study and were also selected to complete a separate interview on their reactions to the intervention. All interviews were conducted during students' elective periods in order to minimize disruption of classroom instruction. Students received an additional $10 gift card for participating in the interview, whether or not they opted to limit their participation.

Measures

Beliefs about Fighting Scale. (Farrell et al., 2012). This self-report measure consists of 27 items that reflect four dimensions of beliefs about fighting. Respondents are asked to indicate how much they agreed with each statement on a four-point scale ranging from 1 (*Strongly disagree*) to 4 (*Strongly agree*). Scores are calculated based on the mean value of items in each scale where a high score represents stronger beliefs.

The subscale measuring Beliefs Against Fighting (6 items) has good reliability ($\alpha = .84$) and reflects normative beliefs that aggressive behaviors are either not acceptable or functional within different situations. Sample items include "Fighting is just wrong; it's a bad thing to do," and "Fighting usually causes more problems than it solves." The Fighting is Sometimes Necessary subscale (8 items) has good reliability ($\alpha = .89$) and reflects beliefs that there are situations where fighting is necessary to avoid negative problems (e.g., becoming or remaining the victim of physical or verbal aggression). Sample items include "If you don't fight some kids, they'll just keep picking on you," and "If you back down from a fight, people will think you are a coward." The Reactive Aggression subscale (8 items) has good reliability ($\alpha = .88$) and reflects beliefs that aggression is acceptable in response to provocation by others. Sample items include "If someone pushes you, you should push them back," and "It's okay to fight someone if they

call you names or tease you." The Instrumental Aggression subscale (5 items) also has good reliability (α = .80) and reflects beliefs that aggression is acceptable when used to achieve instrumental goals. Sample items included "It's okay to threaten someone if they won't do what you want," and "It's okay to fight someone if they have something you want."

Responses to Problem Situations Scale. (Farrell et al., 2012). This self-report measure consists of 26 items that reflect how likely the respondent would be to make each response in the given situation (behavioral intention), and how well they think each response would work (perceived effectiveness). Subscales include: (a) behavioral intentions for effective nonviolent responses (7 items); (b) behavioral intentions for physical aggression (6 items), (c) perceived effectiveness for effective nonviolent responses (7 items), and (d) perceived effectiveness for physical aggression (6 items). For the items assessing behavioral intentions, respondents are asked to indicate how likely they were to engage in a response on a five-point scale ranging from 1 (*Definitely not*) to 5 (*Definitely would*). For the items assessing perceived effectiveness, respondents are asked to indicate how well they thought each response would work on a five-point scale ranging from 1 (*Not at all*) to 5 (*Really well*). Scores are calculated based on the mean value of items in each scale where a high score represents stronger behavioral intentions or increased perceived effectiveness. All subscales had acceptable reliability during both waves of data being used for the current study (behavioral intentions for effective nonviolent responses, α = .82-.87; behavioral intentions for physical aggression, α = .89-.90; perceived effectiveness for effective nonviolent responses, α = .82-.84; perceived effectiveness for physical aggression, α = .88-.91).

Situations on this measure were problematic peer situations that were identified as occurring frequently and rated as difficult to handle in a previous qualitative study of urban

adolescents (Farrell et al., 2006). A sample situation includes, "Somebody is spreading a rumor about a student and you got blamed for it. Now you have a big problem with this person who thinks you were talking about them behind their back". Rated responses include effective nonviolent responses (e.g., "I'd talk it out with the person the rumor was started about and explain I didn't start it") and physical aggression (e.g., "I would fight the person").

Internalized Values, Goals, and Motivations. This self-report measure consists of 21 items that reflect four values, goals, or motivations. Two of these subscales were used for the current study including: (a) revenge goals (5 items) and (b) prosocial values (8 items). Respondents are asked to indicate how important values or goals are on a four-point scale ranging from 1 (*Not at all important to me*) to 5 (*Extremely important to me*). Scores are calculated based on the mean value of items in each scale where a high score represents stronger increased importance of value or goal. Reliability of all subscales was assessed during both waves of data used for the current study. The Revenge subscale has good reliability (α = .88-.89) and examines the extent to which the respondent has a goal to get revenge on peers who have provoked them. Sample items include "You get back at kids who disrespect you," and "You get even." The Prosocial subscale has good reliability (α = .83-.84) and reflects values placed on building trust, treating others fairly, and staying out of trouble. Sample items include "Others are treated fairly," and "You stick up for your friend."

Articulated Thoughts in Simulated Situations (ATSS). (Bettencourt, 2010). ATSS was used to assess youth's social information-processing cognitions. It involves participants listening to four audio-taped situations broken down into five to nine 15-second segments (see Appendix A). After each segment, participants are prompted to engage in a monologue of their thoughts, feelings, and reactions to the segment for 30 seconds (Davison et al., 1997). At the beginning of

the interview respondents are encouraged to put themselves in the situation, pretending that it was actually happening to them. Participants were randomly assigned to one of six gender-specific ATSS protocols that included a practice situation followed by a randomized order of three peer victimization situations. Students were directed to respond verbally at the designated points.

Participants listened to one neutral audio track of a situation involving a peer unintentionally breaking an item and three provocative audio tracks of peer victimization situations, including verbal and physical victimization. The verbal victimization situation involves the participant witnessing several peers teasing another peer about his/her family. At the beginning, the teasing is relatively benign (e.g., "I heard your mama is so fat she can't fit through the doorways in your house.") and escalates during the situation culminating in the victim of the teasing storming out of the lunch room. The first of two physical victimization situations involves a peer trying to fight the participant while a group of students surround them and boost up the fight. The second physical victimization situation begins with two peers asking the participant why he/she did not fight a peer who had previously teased the participant. This other peer bumps into the participant in the hallway and begins getting in the participant's face, which leads to the participant's friends encouraging him/her to fight this peer. Appendix A includes complete versions of each script.

The number of scenarios reflects recommendations from previous ATSS research that has used between one and three scenarios to reliably assess participant cognitions (Davison et al 1997; DiLiberto et al., 2002). Using this method, adolescents describe detailed information about their reasoning and problem-solving thinking in real time as they listen to problem situations. For this study, six scripts representing four peer victimization situations from previous work were

selected. The situation descriptions that served as the basis for these ATSS scripts were derived from qualitative studies that identified peer, school, and peer-school problem situations and determined which situations were particularly relevant, frequent, and difficult for urban African American youths (Farrell et al., 2006; Farrell, Erwin et al., 2007). Given the salience and difficulty of stressful events that occur within the context of interpersonal relationships (Crean, 2004; Farrell et al., 1998), problems within the peer domain were made the exclusive focus of the ATSS measure.

The development, recording, and pilot testing of the scripts are described by Bettencourt (2010). Interviewers were trained using procedures similar to Farrell, Erwin et al. (2007). These procedures included training in developmental and cultural considerations, building trust and rapport, and engaging respondents in spontaneous role-playing.

Analyses of the psychometric properties of the ATSS were conducted to determine the best way to score these data (Bettencourt, 2010). Although respondents were presented with four situations, the practice situation was designed to orient youth to the procedure, and was therefore not included in the scoring. A number of scoring options were considered, including whether to examine the number of segments in which a code was present or if the code was present within each situation as a whole. Consistent with previous research using these data, it was determined that it was most meaningful to focus on the presence or absence of each code within each of the four situations.

For the current study, the distributions of ATSS variables were examined to determine whether variables were skewed or included sufficient variability to be treated as continuous. It was determined that the ATSS variables examining behavioral intentions for physical aggression, beliefs against fighting, and beliefs about right, wrong, and fairness were relatively normally

distributed across participants and could be treated as continuous. All other ATSS variables were converted into ordered categorical variables that indicated whether participants did not identify a code, identified the code once, or identified the code more than once.

Table 4 contains the specific themes to be examined in this study along with examples of each theme. Participants' responses were audio-taped, transcribed, and coded for predetermined themes by coders that were blinded to the youths' reports on other scales. Appendix B contains the complete coding manual and definitions for each theme to be examined in this study. Inter-rater reliability was conducted for 20% of interviews in a previous study using the same participants and ATSS protocol (Bettencourt, 2010). Acceptable reliability was found for all themes, which was indicated by a kappa coefficient of .40 or greater and 80% or higher agreement between coders (Hartmann, 1977; see Table 5).

Table 4.

ATSS Themes and Examples

Theme Name	Example of Theme
Okay to fight in response to physical aggression	Belief that physical aggression justifies retaliatory aggression
Okay to fight in response to non-physical aggression	Belief that certain instances of non-physical aggression justify using physical aggression
Beliefs against fighting	Fighting is wrong or "stupid"
Beliefs about right, wrong, and fairness	Belief that being kind and helpful is the right thing to do and leads to positive outcomes
Tough image and reputation	Perception of a threat to tough image or status motivates specific responses chosen
Benign intent attributions	Judgments that a peer's intentions are non-threatening
Hostile intent attributions	Judgments that a peer's intentions are purposefully mean
Behavioral intentions for nonviolent behavior	Expression of intent to walk away, talk it out
Behavioral intentions for physical aggression	Expression of intent to hit, fight

Table 5

.

Inter-Rater Reliabilities for ATSS Codes

Theme Name	Kappa	Percent Agreement
Okay to fight in response to physical aggression	.74	93%
Okay to fight in response to non-physical aggression	.83	97%
Beliefs against fighting	.61	85%
Beliefs about right, wrong, and fairness	.59	82%
Tough image and reputation	.53	91%
Benign intent attributions	.57	95%
Hostile intent attributions	.54	83%
Behavioral intentions for nonviolent behavior	.40	85%
Behavioral intentions for physical aggression	.75	89%

Although the ATSS interview being used for this study is a novel measure and lacks significant research, previous research has demonstrated that this is a valid method for assessing cognitions that reflect the social information-processing database. A review of studies that have used the ATSS found that the measure was an effective think-aloud approach to validly assess on-line assessment of cognitions (Davison et al 1997). For example, initial validation studies were completed that demonstrated construct validity of the ATSS process by comparing the response latencies and types of beliefs generated when comparing more stressful situations to neutral ones (e.g., Ring & Davison, 1996). In addition, previous research has demonstrated the validity of the ATSS approach by proving it to be superior to more standard paper and pencil measures in testing previously established cognitive theories (e.g., Davison et al., 1991). Lastly the current ATSS measure has been used successfully with the same sample as the current study to examine differences in cognitions between four groups of youth: aggressive-victims, aggressors, passive-victims, and well-adjusted youths (Bettencourt, 2010).

Problem-Solving Interview (PSI). The PSI is a semi-structured interview that assesses responses to two relationally provocative situations (being teased by a peer and having a close friend say something negative about the participant's family) (Appendix C). The interview process involves asking students to: (1) describe how the situation might happen to them; (2) brainstorm responses and evaluate their first response (i.e., effectiveness and consequences); (3)

describe their goals; (4) evaluate the likelihood of their first response reaching each of their goals and five specific goals described by the interviewer (i.e., result in a fight, hurt your image, get revenge, get in trouble, and stop the problem); and (5) describe consequences for a set of specific provocative, aggressive, and effective nonviolent responses. The interview includes both open-ended questions and 5-point Likert-type rating scales assessing the relevance of the situation and students' evaluations of their first response. The PSI was administered together with ATSS for students who were in the seventh grade, with the PSI being administered first. Prior to the interview, participants were randomly assigned to one of two problem solving protocols that differed in the order of the peer victimization situations. The PSI interview was audio-taped, transcribed, coded, and scored. To ensure accurate transcription, a minimum of 20% of interviews were verified for accuracy for each transcriptionist. In addition, all interviews were coded at least twice in order to assess for inter-rater reliability.

The PSI was initially developed during a pilot study that used an approach modeled after the Social Competence Interview, which has been demonstrated to validly assess stress and coping in vulnerable youth (Ewart & Kolodner, 1991). An initial pilot of the PSI was conducted in the spring of 2008 with 46 sixth grade students from the two urban middle schools used for the current study (Titchner et al., 2009). A second pilot was conducted in the spring of 2009 with 53 sixth grade students from the two schools used for the present study and a semi-rural county middle school in an adjoining county (Titchner, Pugh, Mehari, & Farrell, 2010). Although the overall validity of the PSI has not yet been established due to its recent development and novel approach, there is some support for its validity. Social-cognitive variables coded from the PSI showed the expected pattern of relations to measures of behavior suggesting validity of the PSI with the small samples used for the pilot studies. In addition, using the current interview and

sample, the PSI was useful in distinguishing between the impact of peer and parental messages on social information-processing skills (Titchner et al., 2012).

Several limitations identified in the pilot protocols were addressed in the development of the final protocol. These included (a) a lack of depth in specific areas of the problem solving process (e.g., the response-decision process); (b) too much focus on the situation descriptions; and (c) having participants identify their own situations and only evaluate their own responses. The third limitation complicated comparisons across adolescents who responded to different situations. The following revisions were made to the address the limitations for the version used in the current study: (a) all students were provided with the same two situations which represented those that were most frequently selected in the pilot (one peer and one friend); (b) the interview focused on obtaining details of the response-decision process for the first response each student identified; and (c) the interviewer asked students to evaluate their own response and to evaluate three predetermined responses. The PSI was also streamlined to only include questions that were not being assessed by other self-report measures. The order of questions was also changed to ensure the interview did not lead students. For example, although assessment of goals should occur prior to response-decisions within the problem solving model, the order was changed to assess students' responses prior to their goals to ensure that the interview did not lead students to consider their goals when selecting a response.

Problem situations chosen for the PSI were derived from qualitative studies that identified peer, school, and peer-school problem situations and determined which situations were particularly relevant for urban African American youths (Farrell et al., 2006; Farrell, Erwin et al., 2007). The situations chosen for this study were selected from those that were the most frequently experienced and were rated as the most difficult to handle (Farrell et al., 2006). Ten

situations, five involving peers and five involving close friends, were initially chosen. Results of the initial pilot supported the relevance of the selected situations such that: (a) the situations selected had previously happened to 79% of the students and (b) all but one participant indicated that the situation would bother him/her at least "a little" (57% said it would bother them "a lot" or "couldn't be worse"; Titchner et al., 2009). Students also identified a range of emotions in response to the situations including anger (81% of participants), sadness (62% of participants), and betrayal (23% of participants).

For the current study, a lower percentage of students reported experiencing the situation and the peer situation was reported as distressing by fewer students as compared to the previous pilots. A higher percentage of students reported experiencing the close friend situation (47%) than the peer situation (33%). The majority of students (62%) reported experiencing at least one of the situations, but only 19% of students reported experiencing both situations. Over half of students (52%) indicated that the close friend situation would bother them "a lot" or "couldn't be worse" as compared to the peer situation, whereas the corresponding percentage for the peer situation was somewhat lower (43%). The mean rating for how much each situation would bother the participants were in between a "somewhat" and "a lot" rating for both situations.

Interviewer Training. PSI interviewers were trained using procedures similar to Farrell et al. (2007). All interviewers attended two trainings that incorporated training in general interviewing skills (e.g., developmental and cultural considerations and building trust and rapport), how to use the recording devices, and how to handle concerning interviews. Interviewers reviewed the purpose of the interview, observed a sample interview, and practiced in pairs and as a group. All interviewers were assigned a supervisor to review their practice tapes and interviews used in the study. Supervisors were graduate students in clinical psychology that

were involved in the development of the interview. Following each training, all interviewers met individually with their supervisor for an individual training session to complete a practice interview and to review each interviewer's progress and address any problems. In addition, interviewers practiced a minimum of 2 to 3 hours and conducted a practice interview that was recorded and reviewed by their supervisor prior to each individual training session. Interviewers did not begin data collection until their supervisors considered them competent both in the protocol and in their ability to communicate effectively. Each interviewer received feedback for at least their first three interviews. If the supervisors were concerned with the quality of the interview, interviewers received additional one-on-one training with their supervisor prior to returning to the middle schools. After three satisfactory interviews, supervisors reviewed random samples of interviews to continue to provide feedback and ensure that interview quality continued.

Coding Development. This study specifically examined the type of goal identified, the number of aggressive and effective nonviolent responses generated, the total number of responses generated, and the evaluation of nonviolent and aggressive responses. A priori codes were assigned to all variables. Table 6 lists the themes and codes examined in this study and Appendix D contains the complete coding manual. Goals were coded using a priori codes previously identified in response to hypothetical peer situations (Rose & Asher, 1999) and suggested by qualitative research (Farrell et al., 2008, 2010). The codes for responses were identified based upon frequently reported responses in previous qualitative research and incorporated all possible types of responses. Responses were also rated for effectiveness using guidelines developed during previous qualitative studies that assessed the effectiveness of common responses to problem situations (Farrell, Kliewer et al., 2007). A priori codes for

consequences were developed by considering potential outcome expectations for aggressive and nonaggressive responses and confirming these codes with open coding during the initial pilot. To create examples for the coding manual, a team of four graduate students and post-doctoral fellows coded examples from the pilot study using the coding manual. Examples where codes were agreed upon by at least three of the four raters were used as examples for the coding manual.

Prior to coding, all coders completed a training process to achieve acceptable reliability. This training process included reviewing the manual and completing practice examples taken from the pilot studies as a group and individually. Coders continued reviewing independent practice items until they reached acceptable reliability between themselves and a coding standard. Comparable with the ATSS codes, an acceptable level of reliability was indicated by a kappa of .40 or greater and 80% or higher agreement between coders (Hartmann, 1977). To develop coding standards for training, two expert coders involved in the development of the interview and coding manuals independently coded all practice items. Coding standards were based on codes that were either assigned by both coders or arrived at by discussion when the experts' initial codes did not agree. An acceptable level of reliability was reached for all training codes.

Ratings were based on two to four coders depending on the number needed to achieve acceptable inter-rater reliability. An acceptable kappa was found for all codes and percent agreement was acceptable for goal and response categories (see Table 7). Although the consequences code had a lower percent agreement, 90-94% of the time two of three or three of

Table 6.

PSI Themes and Codes

Theme	Combined Category[a]	Codes[b]

Goal		Instrumental Control
		Revenge
Response Generation	Aggressive Responses	Physical aggression
		Direct verbal aggression
		Relational Aggression
		Confrontational
		Unspecified Aggression
	Prosocial Responses	Conflict Resolution
		Defend Reputation
		Seek help from peers, adults, or others
	Fighting/Escalation	Fight or argument
		Retaliation against the respondent
		Provocative/teasing by other person
		Injury/hurt
Consequences	Other Negative Consequences for Student	Hurt respondent's image or reputation
		Get in trouble at home or school
		Problem defined by the situation would not stop
		Negative impact on relationship
		Negative emotional response
		Other Negative
	Positive Consequences	Problem defined by the situation would stop
		Positive impact on relationship
		Apology
		Negative outcome would not occur
		Other positive

[a] Combined categories used for analyses.
[b] Examples and anchors are included in complete coding manual (see Appendix D).

four coders agreed upon a code. When all or the majority of coders agreed upon the code, that code was used as the final rating. When there was a discrepancy an additional independent rater was used.

Scoring of PSI Scale. An examination of the psychometric properties of the PSI variables was conducted to determine the most appropriate way to score these data. Several scoring options were considered including (a) whether to combine scores within or across

Table 7.

Inter-Rater Reliabilities for PSI Codes

Theme Name	Kappa	Percent Agreement

Goal Categories[a]	.53-.88	68-91%
Response Categories	.87	89%
Consequences Categories[b]	.61-.65	65-68%

[a] Based on three coders.
[b] Based on four coders.

situations and (b) whether to calculate the proportion, presence/absence, or number generated for a specific type of response, goal, or consequence. Consistent with the approach used for the ATSS variables, it was determined that calculating the presence or absence of a variable would be the most meaningful. For instance, by calculating the presence or absence of a variable, participants' verbal fluency should not be as likely to impact the findings. In addition, because it was decided that the presence of a variable within a specific situation was not as critical as the presence of a variable across situations binary variables were used. Three PSI variables showed limited variability and in each case there was insufficient variability to allow for comparison of the groups (i.e., first response was physically aggressive, not generating positive consequences for an effective nonviolent response, and not generating negative consequences for physical aggression). Therefore, these three variables were excluded from further analyses.

Analyses

Descriptive statistics were calculated for the Beliefs about Fighting scale, Responses to Problem Situations scale, Internalized Values, Goals, and Motivations scale, and ATSS and PSI codes to examine the distribution properties and to identify any outliers. A series of analyses using Mplus version 6.0 was conducted to identify groups of adolescents who displayed distinct patterns of beliefs about fighting on the Beliefs about Fighting scale. Analyses of the latent class sample were conducted using the same methods Farrell and colleagues (2012) used for the first wave of data for this sample. The latent class analyses were used to determine if the data collected from the sample at the end of the sixth and seventh grades replicated the same three

patterns found in the previous study (i.e., beliefs against fighting, fighting is sometimes necessary, and beliefs supporting fighting). As in the Farrell et al. (2012) study, the 27 items on the Beliefs Against Fighting scale were re-coded as binary variables (i.e. 0 = disagree or strongly disagree; 1 = agree or strongly agree) to reduce the complexity of the models.

Models were estimated using full information maximum likelihood estimates and included all participants with data on at least one variable (N = 435). Separate models specifying between one and five classes were tested, and the final model was identified based on the model fit statistics, including the Bayesian information criterion (BIC), the Lo-Mendell-Rubin Likelihood Test, the Vuong-Lo-Mendell-Rubin Likelihood Ratio Test (VLMR), and Entropy (Nylund, Asparaouhouv, & Muthen, 2007). Research has suggested that BIC performs the best of information criteria as it takes into account both model fit and number of parameters with smaller values of BIC indicating a better fit to the data and an increased probability of replication of the specific solution. The VLMR compares the relative fit of a model with k classes to a model with k-1 classes where significant values indicate that increasing the number of classes significantly improves the model fit (Lo, Mendell, & Rubin, 2001). The Lo-Mendell-Rubin Likelihood test is similar to the VLMR, but has been studied less (Nylund et al., 2007). Entropy varies from zero to one with values near one indicating better classification into groups (Clark & Muthén, 2009). Models specifying one to five classes were compared. Once the best fitting solution was chosen, individuals who completed the ATSS and/or PSI interviews were assigned to the class for which their probability of membership was highest based on their posterior class probabilities which represent each individual's probability of being in each of the latent classes based on their self-reported pattern of responses (Nylund, 2007).

Once adolescents were classified into groups, analyses were conducted using the subsamples of participants who completed each set of measures. Analyses were conducted to determine if the patterns of beliefs about fighting display the hypothesized patterns of differences. Analyses to compare differences across belief classes used different methods based on the distribution of the dependent variable. Analysis of covariance (ANCOVA) models were conducted for continuous dependent variables, logistic regression was used for categorical dependent variables (i.e., presence or absence of a code), and Poisson regression was conducted for ordered count variables that assessed whether a variable was absent, present in one situation, or present in more than one situation. Poisson regression was considered the most appropriate analysis for the count variables given that these variables occurred more rarely and had a Poisson, rather than normal, distribution.

Separate analyses were conducted for each social information-processing variable obtained from ATSS, PSI, or self-report measures as the dependent variable. The independent variable was latent class membership (i.e., Beliefs Against Fighting, Fighting is Sometimes Necessary, Beliefs Supporting Fighting, and Low responders). Differences among classes were examined, controlling for the influence of gender, age, intervention condition, race/ethnicity, and setting based on their relation to aggression in previous research. Significant main effects between class membership and social information-processing were followed up by pair-wise comparisons to determine which specific groups were significantly different. A sequentially step-down rejective Bonferroni adjustment was used to correct for multiple comparisons.

For the ATSS sample, ANCOVA and poisson regression analyses were conducted to examine group differences in the following variables: okay to fight in response to physical or nonphysical aggression, beliefs against fighting, beliefs about right, wrong, and fairness, tough

image and reputation, benign and hostile intent attributions, and behavioral intentions for nonviolent behavior, physical aggression and nonphysical aggression (see Appendix B for coded themes). For the PSI sample, ANCOVA and logistic regression analyses examined differences in the response-decision process, such as group differences in the types of responses, goals, and consequences identified by youth (see Appendix D). Lastly, ANCOVA analyses were conducted to test group differences in social information-processing using self-report measures conducted during Wave 2 and Wave 4 including, behavioral intentions for nonviolent behavior and physical aggression, perceived effectiveness of effective nonviolent behavior and physical aggression, and internalized revenge and prosocial values and goals.

Results

Analysis of the Beliefs about Fighting Scale

Descriptive Statistics. Means, standard deviations, and correlations for the four subscales of the Beliefs about Fighting Scale are reported in Table 8. Ratings were completed on a scale of one to four, where higher scores indicate stronger agreement with beliefs. All scales were significantly correlated with each other. The Reactive Aggression scale was moderately correlated with the Fighting is Sometimes Necessary (r = .69) and Instrumental Aggression (r = .55) scales. The remaining correlations among scales were relatively lower (i.e., rs = absolute value of .16 to .40).

Table 8.

Means, Standard Deviations, and Correlations for Beliefs about Fighting Scale

Scale	Mean	SD	1[a]	2[a]	3[a]
1. Beliefs Against Fighting	3.07	0.73	1.00		
2. Fighting is Sometimes Necessary	2.52	0.86	-0.16**	1.00	
3. Reactive Aggression	1.98	0.74	-0.40**	0.69**	1.00
4. Instrumental Aggression	1.38	0.50	-0.32**	0.31**	0.55**

Note. Ns ranged from 388 to 408 due to missing data. The superscript [a] indicates correlations between variables.
*p < .05, **p < .01.

Latent Class Analysis. A series of analyses was conducted to identify groups of adolescents who displayed distinct patterns of beliefs about fighting on the 27 items of the Beliefs about Fighting scale.

Comparison of Models. Table 9 displays fit statistics across the five models. The one class solution included every participant in the same group and is only reported for comparison

purposes. The two-, three-, four-, and five-class solutions will be discussed in more detail. The two-class solution fit the data significantly better than the one-class solution, based on a significant VLMR and Lo-Mendell-Rubin fit tests ($p < .01$) and decreased BIC (ΔBIC = 1,557). The three-class solution further improved the fit based on a significant VLMR and Lo-Mendell-Rubin fit tests ($p < .01$) and decreased BIC (ΔBIC = 284). The four-class solution fit the data significantly better than the three-class solution, which was indicated by significant VLMR and Lo-Mendell-Rubin fit tests ($p < .01$) and decreased BIC (ΔBIC = 163). The five-class solution did not further improve the fit relative to the four-class solution. More specifically, the five-class solution had a higher BIC (ΔBIC = 10) and the VLMR ($p = .58$) and Lo-Mendell-Rubin fit ($p = .58$) tests were not significant.

Table 9.

Fit Statistics for Latent Class Models of the Beliefs About Fighting Scale

Number of Classes	BIC	VLMR	Lo-Mendell-Rubin	Entropy
One	12,287.91	Not Applicable	Not Applicable	Not Applicable
Two	10,730.58	-6,061.94**	1,717.34**	0.88
Three	10,446.49	-5,198.22**	451.55**	0.88
Four	**10,283.55**	**-4,971.12****	**331.10****	**0.90**
Five	10,293.54	-4,804.59	159.19	0.87

Note. N = 435. BIC = Bayesian Information Criterion. VLMR = Vuong-Lo-Mendell-Rubin. *$p < .05$, **$p < .01$

The two-class model included a group of adolescents that were more likely to report beliefs generally supporting aggression and a group of adolescents that generally held beliefs against fighting (see Figure 2). Adolescents in Class 1 ($n = 227$, 52%) tended to agree with items supporting beliefs against fighting and beliefs that fighting is sometimes necessary and disagree with items reflecting instrumental aggression. The adolescents in Class 1 tended to endorse beliefs supporting reactive aggression with the exception of two items, "It's okay to push or shove other people around if you're mad" and "It's okay to fight someone if they do something to

make you mad". Adolescents in Class 2 (*n* = 208, 48%) tended to agree with items supporting beliefs against fighting and disagree with items reflecting beliefs that fighting is sometimes necessary and beliefs supporting reactive aggression. Compared to adolescents in class 1, those in class 2 were less likely to endorse beliefs supporting the use of fighting in any situation.

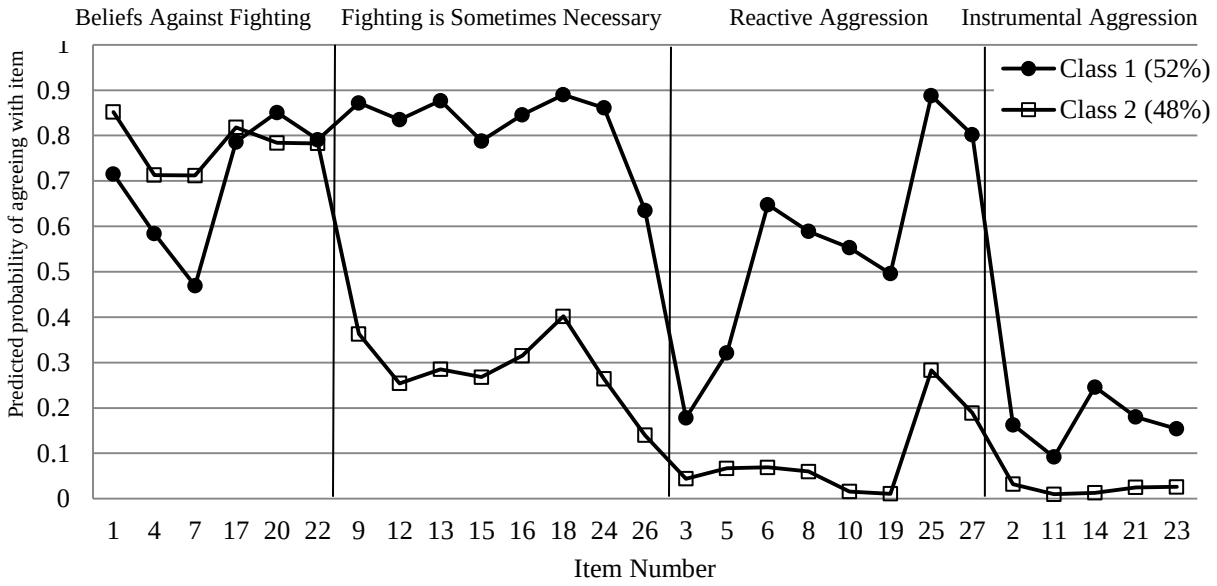

Figure 2. Two-class solution representing the mean predicted probabilities of agreeing with items on the Beliefs about Fighting scale.

Figure 3 displays the three-class model. The three-class model also included a group of adolescents who were more likely to report beliefs generally supporting aggression than adolescents in the other classes (Class 1; *n* = 155, 36%) and a group of adolescents who endorsed general beliefs against fighting (Class 3; *n* = 132, 30%). The three-class model included an additional class of adolescents who reported a pattern of beliefs that fighting is sometimes necessary (Class 2; *n* = 148, 34%). Adolescents in Class 2 tended to endorse beliefs against fighting and beliefs that fighting is sometimes necessary, but did not endorse beliefs supporting instrumental aggression. Participants in Class 2 did not typically endorse items supporting reactive aggression, but did frequently endorse "If someone pushes you, you should push them back" and "You should fight someone if they say something bad about someone in your family."

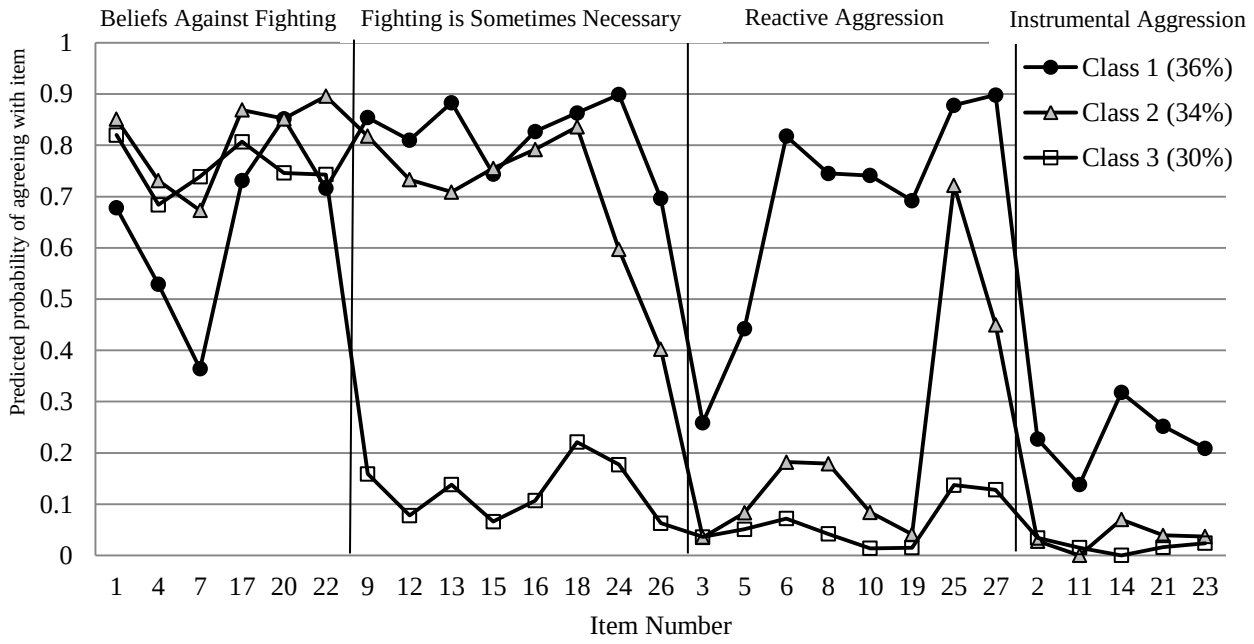

Figure 3. Three-class solution representing the mean predicted probabilities of agreeing with items on the Beliefs about Fighting scale.

Figure 4 displays the four-class model. Consistent with the three-class model, the four-class model also included a group of adolescents who were more likely to endorse beliefs generally supporting aggression than adolescents in the other classes (Class 1; *n* = 148, 34%), a group of adolescents who endorsed general beliefs against fighting (Class 2; *n* = 99, 23%), and a group of adolescents who reported beliefs that fighting is sometimes necessary (Class 3; *n* = 136, 31%). The primary difference compared to the three-class model was the addition of a class of adolescents who tended to disagree with all items (Class 4; *n* = 52, 12%).

Figure 5 displays the five-class model. Consistent with the four-class model, the five-class model also included a group of adolescents who were more likely to report beliefs generally supporting aggression than adolescents in the other classes (Class 1; *n* = 72, 17%), a group of adolescents who endorsed general beliefs against fighting (Class 4; *n* = 94, 22%), a group of adolescents who reported beliefs that fighting is sometimes necessary (Class 3; *n* = 111, 26%), and a group of adolescents who tended to disagree with all items (Class 5; *n* = 49, 11%).

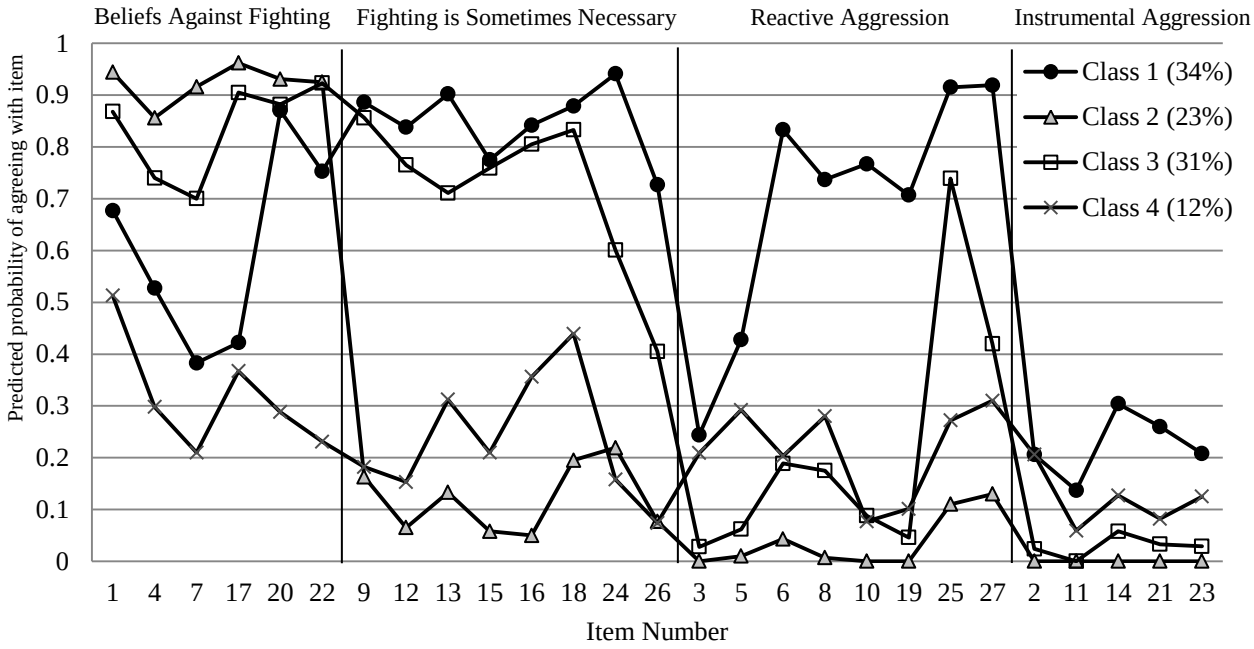

Figure 4. Four-class solution representing the mean predicted probabilities of agreeing with items on the Beliefs about Fighting scale.

The primary difference compared to the four-class model was the addition of a class of adolescents who endorsed beliefs against fighting, that fighting is sometimes necessary, and who supported the use of reactive aggression with the exception of items 3 and 5 (Class 2; n = 109, 24%). Adolescents in Class 2 did not endorse beliefs supporting the use of instrumental aggression.

Final four-class model. The four-class solution was identified as the best fitting model because it achieved a significantly better model fit compared to all other models. This model closely approximates the latent classes identified by Farrell and colleagues (2012) with one main difference, it included an additional class of low responders, where the participants in the group tended to disagree with all items on the Beliefs about Fighting scale.

The percentage of adolescents endorsing each item on the Beliefs about Fighting scale within each class in the four-class is presented in Table 10. The majority of participants in all four classes disagreed with items that supported the use of instrumental aggression and with

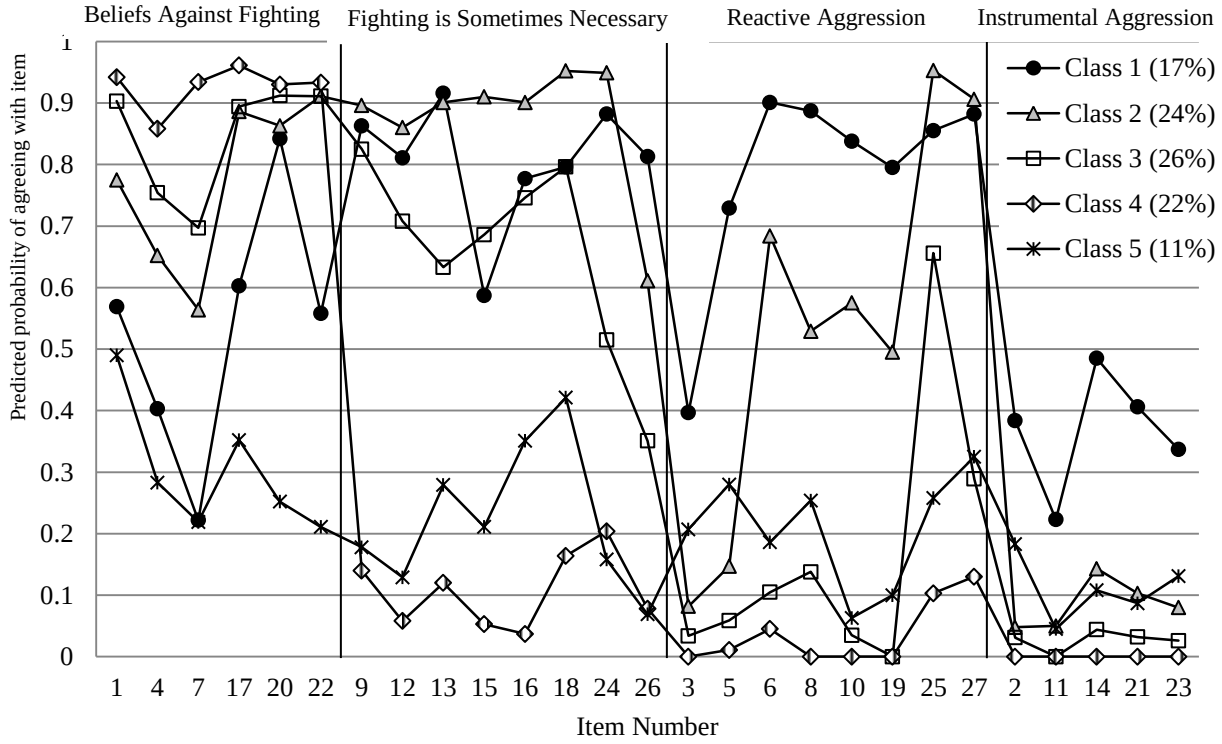

Figure 5. Five-class solution representing the mean predicted probabilities of agreeing with items on the Beliefs about Fighting scale.

items 3 and 5 of the Reactive Aggression scale (i.e., "It's okay to push or shove other people around if you're mad" and It's okay to fight someone if they do something to make you mad").

Table 10.

Percentage of Adolescents Endorsing Items on the Beliefs about Fighting Scale in Four-Class Model

#	Item	Class 1[a]	2[a]	3[a]	4[a]
	Beliefs Against Fighting Subscale				
1	Fighting usually causes more problems than it solves.	67.7	94.4	86.8	51.3
4	Fighting is a bad way to solve problems because you might get hurt.	52.7	85.6	74.0	29.8
7	Fighting is just wrong; it's a bad thing to do.	38.3	91.6	70.0	21.0
16	Fighting mostly just leads to more fighting.	42.2	96.2	90.5	36.7
20	Most of the things people fight over aren't worth fighting about.	87.0	93.1	88.2	28.8
22	There are better ways to solve most problems than by fighting.	75.3	92.5	92.3	23.1
	Fighting is Sometimes Necessary Subscale				
9	If you don't fight some kids, they'll just keep picking	88.6	16.3	85.6	18.2

	on you.				
12	When people call you names, sometimes you have to fight to stand up for yourself even if you don't want to.	83.8	6.5	76.5	15.3
13	Sometimes you have only two choices - get punched or punch the other kid first.	90.2	13.3	71.1	31.2
15	Sometimes a rumor will just get worse if you don't fight the person who started it.	77.5	5.8	75.9	21.0
17	If you back down from a fight, people will think you are a coward.	84.2	5.0	80.5	35.6
18	Sometimes a person doesn't have any choice but to fight.	87.9	19.5	83.3	43.9
24	If you don't fight someone who picks on you, other kids will never let you hear the end of it.	94.1	21.9	60.1	15.8
26	If you don't fight when someone messes with you, other kids will pick on you.	72.7	7.7	40.5	7.4
	Reactive Aggression Subscale				
3	It's okay to push or shove other people around if you're mad.	24.4	0.0	2.8	20.9
5	It's okay to fight someone if they do something to make you mad.	42.8	1.0	6.2	29.2
6	It's okay to fight someone if they call you names or tease you.	83.3	4.3	18.9	20.3
8	It's okay to fight someone if they spread a rumor about you.	73.7	0.7	17.5	28.0
10	If people do something to make you really mad, they deserve to be beaten up.	76.7	0.0	8.8	7.7
19	In general, it's okay to take your anger out on others by using physical force.	70.7	0.0	4.6	10.1
25	If someone pushes you, you should push them back.	91.5	11.0	73.9	27.2
27	You should fight someone if they say something bad about someone in your family.	91.9	13.0	42.0	31.0
	Instrumental Aggression Subscale				
2	It's okay to use physical force to get someone to do what you want.	20.6	0.0	2.4	20.6
11	It's okay to threaten someone if they won't do what you want.	13.7	0.0	0.0	5.9
14	It's okay to fight someone if they have something you want.	30.4	0.0	5.8	12.7
21	It's okay to yell at someone to get them to do things for you.	26.0	0.0	3.3	8.2
23	It's okay for you to hit someone to get them to do what you want.	20.8	0.0	2.9	12.5

[a] Probability of individuals identifying that they agree or strongly agree with this item.

Class 1 (*n* = 148, 34%) reflected a pattern of beliefs that primarily supported the use of aggression. The majority of adolescents in this class agreed with items reflecting beliefs that fighting is sometimes necessary and the appropriateness of reactive aggression, with the exception of items 3 and 5 (i.e., "It's okay to push or shove other people around if you're mad" and "It's okay to fight someone if they do something to make you mad"). The majority of adolescents in this group tended to disagree with items supporting the use of instrumental aggression. Adolescents in Class 1 did not tend to endorse items reflecting beliefs against fighting, but did endorse items 20 and 22 (i.e., "Most of the things people fight over aren't worth fighting about" and "There are better ways to solve most problems than by fighting"). Most adolescents in Class 2 (*n* = 99, 23%) endorsed items that supported beliefs against fighting, but did not endorse items reflecting beliefs supporting fighting. Adolescents in Class 3 (*n* = 136, 31%) tended to agree with items that reflected beliefs against fighting and beliefs that fighting is sometimes necessary, but disagreed with items of beliefs supporting instrumental aggression. Adolescents in Class 3 did not typically endorse items supporting reactive aggression, but the majority did endorse "If someone pushes you, you should push them back" and "You should fight someone if they say something bad about someone in your family." Adolescents in Class 4 (*n* = 52, 12%) tended to disagree with all items.

Using the final model, all participants were classified and assigned to a group based on the highest probability of being in a given class. To improve accuracy of the class fit, class assignment use information from all variables that were included in later analyses (Bray, Lanza, & Tan, 2011) and membership was regressed on demographic covariates, including intervention condition, school, age, ethnicity, gender, and family structure. Participant class membership was fairly consistent across the four-class models with and without covariates. The Kappa was 0.97

($p < .01$) and the percent agreement was 97.7. As hypothesized, there were three classes, a "*Beliefs Against Fighting*" class (*Against Fight*; $n = 97$, 22%), a "*Fighting Is Sometimes Necessary*" class (*Sometimes Fight; n* = 136, 32%), and a "*Beliefs Supporting Fighting*" class (*Support Fight*; $n = 149$, 34%). In addition, there was a "*Low responders*" class (*Low Response*; $n = 53$, 12%; see Table 11).

Table 11.

Number & Percentage of Adolescents in each Class of the Four-Class Model

Class #	Class Name	Abbreviated Class Name	# in Class	% in Class
1	Beliefs Supporting Fighting	Support Fight	148	38
2	Beliefs Against Fighting	Against Fight	99	23
3	Fighting is Sometimes Necessary	Sometimes Fight	136	31
4	Low Responders	Low Response	52	12

Demographic Differences in Class Membership. Differences in demographic variables across classes were examined. The percentage of students in each class by gender, setting, race/ethnicity, and family structure is reported in Table 12. Differences in intervention condition across classes were examined in order to control for any intervention effects. There were no significant differences in intervention condition across the four classes. The percentage of students in each class did vary, however, across school setting, gender, race/ethnic groups, and family structure. More specifically, adolescents that were male, African American, or from the urban schools were more likely to be in the beliefs supporting fighting class than adolescents that were female, races other than African American, and from the semi-rural school. Additionally, adolescents that were female, Caucasian, or from the semi-rural school were more likely to be in the beliefs against fighting class as compared to adolescents that were male, races other than Caucasian, or from the urban schools.

Interpretation of differences among classes related to school setting, race/ethnicity, and family structure was complicated because these variables tended to covary. Multinomial logistic

Table 12.

Membership (%) in Latent Classes Representing Patterns of Beliefs about Fighting by Demographic Variables

Group	N	Against Fight	Sometimes Fight	Support Fight	Low	χ^2	df	*p*
Setting						36.77	3	0.000
City	236	11.9	33.1	43.2	11.9			
County	198	33.8	30.8	23.2	12.1			
Gender						25.62	3	0.000
Boys	197	13.7	38.6	30.5	17.3			
Girls	237	28.7	26.6	37.1	7.6			
Race/Ethnicity						49.47	6	0.000
African American	273	13.2	35.2	38.8	12.8			
Caucasian	93	45.2	26.9	15.1	12.9			
Other	65	26.2	26.2	41.5	6.2			
Family Structure						31.41	12	0.000
Two-parent	155	31.6	35.5	23.2	9.7			
Mother with other adult	116	15.5	34.5	41.4	8.6			
Single mom	89	12.4	31.5	36.0	20.2			
Father without mother	31	25.8	19.4	41.9	12.9			
Other	35	22.9	22.9	40.0	14.3			
Intervention Condition						2.10	3	0.552
Control	239	21.3	33.1	36.0	9.6			
Intervention	195	22.6	30.8	31.8	14.9			

*Note. N*s ranged from 426 to 434 due to missing data. Against Fight = Beliefs Against Fighting class. Sometimes Fight = Fighting is Sometimes Necessary class. Support Fight = Beliefs Supporting Fighting class. Low = Low Responders class.

regression analyses were conducted to examine the unique contribution of each variable to predicting class membership. Within this model, there were no significant effects for school setting, $\chi^2(3) = 7.13$, $p = 0.068$, family structure $\chi^2(12) = 18.87$, $p = 0.092$, or intervention condition $\chi^2(3) = 3.38$, $p = 0.337$. There were, however, significant effects for gender, $\chi^2(3) = 29.05$, $p < 0.001$, and race/ethnicity, $\chi^2(6) = 19.81$, $p = 0.003$.

Odds ratios (OR) within the overall model were used to compare the *Support Fight*, *Sometimes Fight*, and *Low Response* classes to the *Against Fight* class on gender and

race/ethnicity. Comparisons across gender indicated that female students had a significantly higher probability than male students of being in the *Against Fight* relative to the *Support Fight* class (OR = 1.9, 95% CI = 1.0, 3.6, Wald χ^2 (1) = 4.35, p = 0.037), the *Sometimes Fight* class (OR = 3.6, 95% CI = 2.0, 6.5, Wald χ^2 (1) = 17.08, $p < 0.001$), and the *Low Response* class (OR = 5.7, 95% CI = 2.6, 12.5, Wald χ^2 (1) = 19.51, $p < 0.001$). Comparison of class membership on race/ethnicity indicated that African American students had a significantly higher probability than Caucasian students of being in the *Support Fight* relative to the *Against Fight* class (OR = 4.6, 95% CI = 1.9, 11.2, Wald χ^2 (1) = 11.40, p = 0.001) and being in the *Sometimes Fight* relative to the *Against Fight* class (OR = 3.1, 95% CI = 1.4, 6.9, Wald χ^2 (1) = 8.03, p = 0.005), but did not differ in the relative probabilities of being in the *Low Response* versus *Against Fight* classes. In addition, African American students had a significantly higher probability than students in the other race/ethnicity category of being in the *Sometimes Fight* relative to the *Against Fight* class (OR = 2.6, 95% CI = 1.1, 5.8, Wald χ^2 (1) = 5.07, p = 0.024) and being in the *Low Fight* relative to the *Against Fight* class (OR = 3.9, 95% CI = 1.1, 12.5, Wald χ^2 (1) = 4.53, p = 0.033), but did not differ in the relative probabilities of being in the *Support Fight* and *Against Fight* classes.

The latent classes were also examined to see if class membership differed across the three samples participating in the study (see Table 13). The percentage of students in each class did not differ based on whether participants completed the ATSS $\chi^2(3) = 4.95$, p = 0.176. or PSI $\chi^2(3) = 3.13$, p = 0.371. Therefore, each of the three samples had similar percentages of adolescents in each class.

Table 13.

Percentage of Adolescents in Each Latent Class by Sample

Sample	Against Fight	Sometimes Fight	Support Fight	Low
Latent Class Sample	21.3	31.1	33.3	11.6
ATSS Sample	22.4	31.6	36.2	9.9
PSI Sample	26.4	31.2	32.6	9.7

Note. Against Fight = Beliefs Against Fighting class. Sometimes Fight = Fighting is Sometimes Necessary class. Support Fight = Beliefs Supporting Fighting class. Low = Low Responders class.

Descriptive Statistics of Social Information-Processing Variables

Means, standard deviations, and the ranges for social information-processing variables are reported in Table 14. Correlations among the social information-processing variables were examined to determine the distinct nature of each construct. The majority of variables were significantly correlated with each other. The strongest relations were among ATSS or self-report cognitions that reflected similar constructs (e.g., cognitions about physical aggression). For instance, behavioral intentions for physical aggression and cognitions that it is okay to fight in response to physical aggression (r = .53), behavioral intentions for effective nonviolent behavior and rating effective nonviolent responses as effective or prosocial values (r = .68 and .54, respectively), and valuing revenge and behavioral intentions for physical aggression (r = .61) were moderately correlated. All but 6 of the 36 correlations among the ATSS variables were less than an absolute value of .30. All but 7 of the 105 correlations among PSI variables were less than an absolute value of .30. Several variables from the PSI were not significantly correlated with most of the other variables. These were hostile attribution bias, generating an instrumental-control goal, generating a revenge goal, generating positive consequences for an effective nonviolent response, and generating negative consequences for physical aggression. The majority of correlations among variables across the ATSS and PSI measures were either not significant or were fairly low (absolute value of $r \leq .25$ for all but 3 of 135 correlations). Finally,

all but 4 of the 21 correlations among self-report measures were less than an absolute value of .50. Therefore, although there was some relation between these variables, the majority of constructs were not highly related and were measuring distinct components of the social information-processing model.

Table 14.

Means and Standard Deviations for Social Information-Processing Variables

Scale	Mean	SD	Range
Behavioral Intentions Scale (*N*=391)			
Effective Nonviolent Responses	3.57	0.83	1 - 5
Physical Aggression Responses	2.67	1.05	1 - 5
Perceived Effectiveness Scale (*N*=382)			
Effective Nonviolent Responses	3.58	0.76	1 - 5
Physical Aggression Responses	2.80	1.04	1 - 5
Internalized Values, Goals, and Motivations (*N*=346)			
Revenge	1.85	0.78	1 - 4
Prosocial	2.77	0.70	1 - 4
Articulated Thoughts in Simulated Situations (ATSS; *N*=309)			
Hostile Intent Attributions (P/A)	0.44	0.67	0 - 1
Benign Intent Attributions (P/A)	0.50	0.70	0 - 1
Behavioral Intentions for Physical Aggression (P/A)	0.45	0.36	0 - 2
Behavioral Intentions for Nonviolent Behavior (P/A)	1.94	0.29	0 - 1
Ok to fight in response to physical aggression (P/A)	0.75	0.81	0 - 1
Ok to fight in response to non-physical aggression (P/A)	0.31	0.56	0 - 1
Beliefs Against Fighting (P/A)	0.43	0.34	0 - 2
Image and Reputation (P/A)	0.31	0.59	0 - 1
Beliefs about Right, Wrong, and Fairness (P/A)	0.36	0.27	0 - 2
Problem Solving Interview (PSI; *N*=149)			
Revenge goal identified (P/A)	0.11	0.32	0 - 1
Instrumental-Control goal identified (P/A)	0.84	0.37	0 - 1
Number of responses generated	3.86	1.95	1 - 10
Physically aggressive response generated (P/A)	0.35	0.48	0 - 1
First response was aggressive (P/A)	0.57	0.50	0 - 1
Aggressive response generated (P/A)	0.78	0.42	0 - 1
First response was prosocial (P/A)	0.64	0.48	0 - 1
Prosocial response generated (P/A)	0.53	0.50	0 - 1
Fighting consequences identified for effective response (P/A)	0.19	0.40	0 - 1
Other negative consequences identified for effective response (P/A)	0.30	0.46	0 - 1
Positive consequences identified for physical aggression (P/A)	0.33	0.47	0 - 1
Fighting consequences identified for physical aggression (P/A)	0.58	0.50	0 - 1

Note. P/A = Presence/Absence of the variable was examined.

Several gender differences in the likelihood that a particular social information-processing code was generated were found. Girls were 1.83 times more likely to report hostile intent attributions (Wald χ^2 (1) = 9.52, p = .002) and 1.54 times more likely to report benign intent attributions compared to boys (Wald χ^2 (1) = 5.55, p = .018). Girls were also more likely to report behavioral intentions for nonviolent behavior (F(1,368) = 22.20, p < .001, partial eta squared = .06) and beliefs against aggression (F(1,283) = 7.30, p = .007, partial eta squared = .03) compared to boys. Finally, girls were more likely to report beliefs about right, wrong, and fairness (F(1,283) = 5.20, p = .023, partial eta squared = .02), perceive increased effectiveness of effective nonviolent responses (F(1,359) = 8.51, p = .004, partial eta squared = .02), and had an higher average number of responses generated on the PSI interview (F(1,128) = 5.54, p = .020, partial eta squared = .04) as compared to boys. On the other hand, boys were more likely than girls to report behavioral intentions for physical aggression (F(1,282) = 8.88, p = .003, partial eta squared = .03). No other gender differences were found at p < .05.

Differences among Classes in Social Information-Processing Variables

A series of analyses was conducted to examine the hypotheses regarding differences across latent classes on the social information-processing variables using all participants available for each analysis. Results are discussed as they relate to each hypothesis starting with differences between latent class groups on social information-processing cognitions and followed by differences between latent class groups on the response-decision process.

Differences in Social Information-Processing Cognitions. Table 15 displays the means and standard errors for all measures of social information-processing cognitions for each of the four latent classes. It was hypothesized that adolescents in the *Support Fight* class would more often report cognitions of hostile attribution bias than adolescents in the other classes and that

adolescents in the *Against Fight* class would be more likely to report benign intent attributions than members of the other classes. Contrary to the hypotheses, there were no significant differences between latent classes on hostile intent attributions (Wald χ^2 (3) = 2.29, p = .51) and benign intent attributions (Wald χ^2 (3) = 5.69, p = .13; see Figure 6).

Table 15.

Means and Standard Errors for Social Information-Processing Cognitions by Latent Class Group

Variable	Against Fight		Sometimes Fight		Support Fight		Low Response	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Hostile Intent Attributions	0.34[a]	0.07	0.43[a]	0.08	0.50[a]	0.09	0.45[a]	0.13
Benign Intent Attributions	0.38[a]	0.08	0.58[a]	0.10	0.52[a]	0.09	0.13[a]	0.11
Behavioral Intentions for Physical Aggression	0.28[a]	0.04	0.39[a]	0.04	0.57[b]	0.04	0.43[ab]	0.06
Behavioral Intentions for Physical Aggression (SR)	1.80[a]	0.10	2.54[b]	0.09	3.41[c]	0.09	2.54[b]	0.13
Behavioral Intentions for Nonviolent Behavior	1.91[a]	0.19	1.92[a]	0.18	1.89[a]	0.17	1.90[a]	0.27
Behavioral Intentions for Nonviolent Behavior (SR)	4.02[a]	0.09	3.71[b]	0.08	3.09[c]	0.08	2.90[c]	0.12
Ok to fight in response to physical aggression	0.26[a]	0.07	0.74[b]	0.11	0.75[b]	0.11	0.48[ab]	0.12
Ok to fight in response to non-physical aggression	0.11[a]	0.05	0.21[a]	0.06	0.47[b]	0.10	0.35[ab]	0.12
Beliefs Against Fighting	0.49[a]	0.05	0.44[ab]	0.04	0.33[b]	0.04	0.36[ab]	0.07
Image and Reputation	0.08[a]	0.04	0.38[b]	0.08	0.49[b]	0.10	0.29[ab]	0.11
Beliefs about Right, Wrong, and Fairness	0.31[a]	0.04	0.34[a]	0.04	0.34[a]	0.03	0.38[a]	0.05

Note. Means with the same superscripts are not significantly different. Against Fight = Beliefs Against Fighting class. Sometimes Fight = Fighting is Sometimes Necessary class. Support Fight = Beliefs Supporting Fighting class. Low Response = Low Responders class. SR = Self-report measure. All other codes are from the ATSS interview.

Analysis of behavioral intentions for physical aggression on the ATSS and self-report scales supported the hypothesis that the *Support Fight* class would generate more behavioral intentions for physical aggression than the *Against Fight* and *Sometimes Fight* classes (ATSS: $F(3,282) = 10.49$, $p < .001$; Self-report: $F(3,379) = 60.13$, $p < .001$; see Figure 7). Consistent

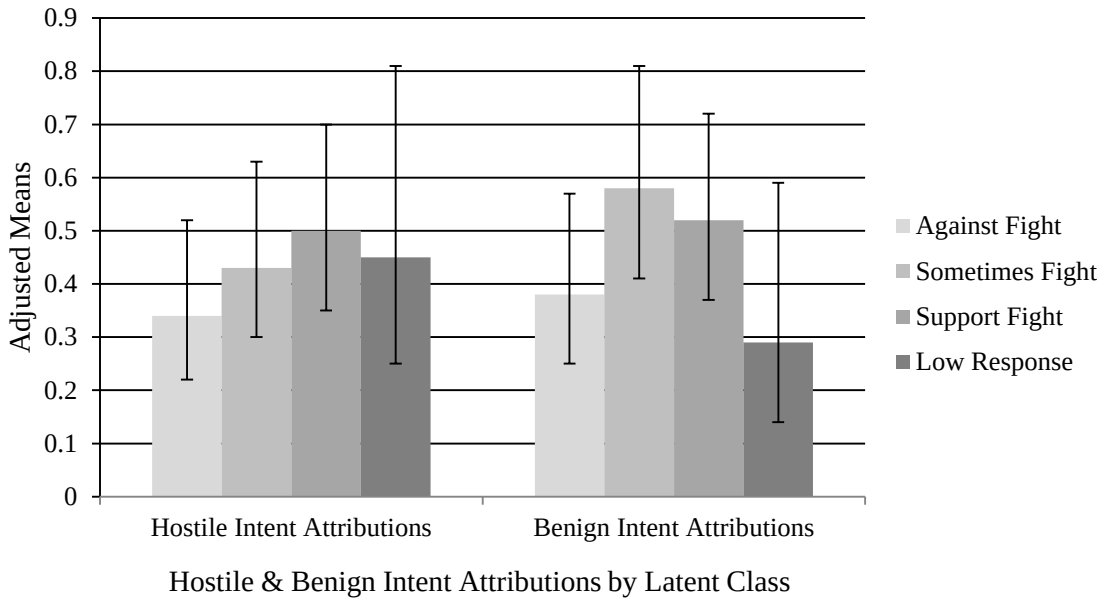

Figure 6. Adjusted means across latent classes for ratings of Hostile & Benign Intent Attributions. Error bars represent 95% confidence intervals.

with the hypothesis, pairwise comparisons on the self-report measure revealed that adolescents in the *Support Fight* class reported significantly more behavioral intentions for physical aggression then both the *Against Fight* and *Sometimes Fight* classes ($p < .001$) with large effect size differences ($d = 2.06$ and 1.03). On the other hand, pairwise comparisons on the ATSS measure revealed that the *Sometimes Fight* class was not significantly different from the *Support Fight* class on the ATSS measure ($p = .241$). Results further revealed that adolescents in the *Sometimes Fight* class reported significantly more behavioral intentions for physical aggression compared to the *Against Fight* class on both the ATSS ($p = .001$) and self-report measures ($p < .001$) with moderate ($d = .65$) and large ($d = 1.10$) effect sizes, respectively. Additionally, there were large effect size differences such that adolescents in the *Low Response* class were significantly more likely to report behavioral intentions for physical aggression compared to adolescents in the *Against Fight* class on the self-report measure ($d = 1.15$, $p<.001$).

Analysis of behavioral intentions for nonviolence on the ATSS and self-report scales partially supported the hypothesis that adolescents in the *Against Fight* class would be more

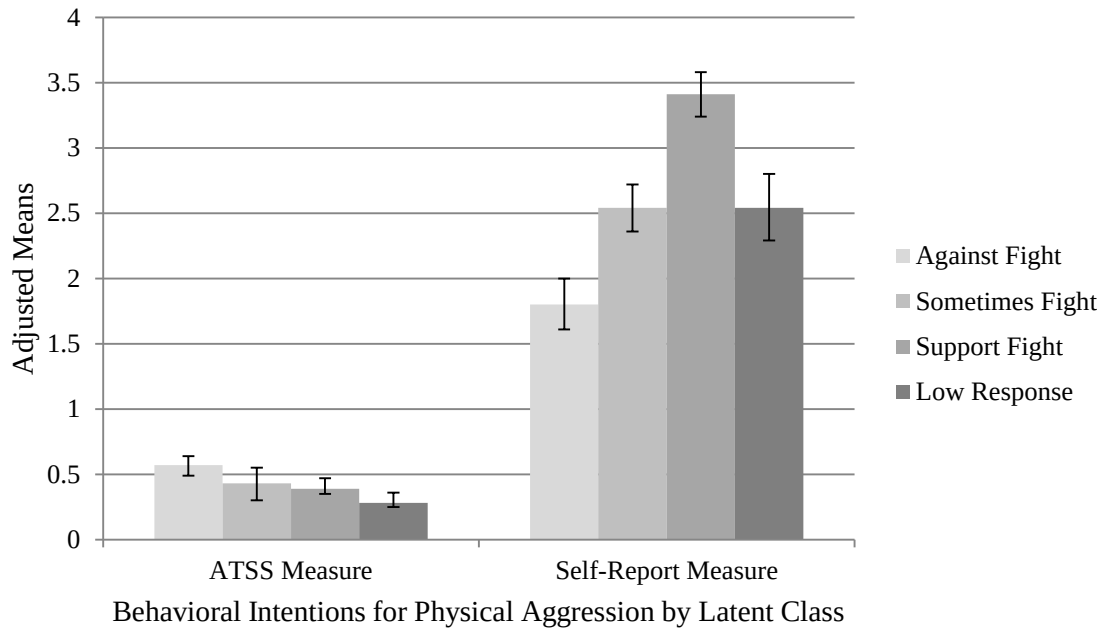

Figure 7. Adjusted means across latent classes for ratings of Behavioral Intentions for Physical Aggression. Error bars represent 95% confidence intervals.

likely to report intentions for nonviolence than members of the other groups. On the ATSS measure, no significant differences were found between latent classes on behavioral intentions (Wald χ^2 (3) = .02, p = .99; see Figure 8). There were, however, significant differences for the self-report measure (F(3,368) = 19.83, p < .001). As hypothesized, adolescents in both the *Against Fight* and *Sometimes Fight* classes were significantly more likely to report behavioral intentions for nonviolent behavior compared to the *Support Fight* class (d = 1.26, p < .001; d = .83, p < .001). Adolescents in the *Against Fight* class also reported significantly more behavioral intentions for nonviolent behavior compared to the *Sometimes* class (d = .54, p < .001) and the *Low* class (d = 1.47, p < .001).

Analysis of beliefs about the use of aggression supported the hypothesis that cognitions reflecting beliefs about the use of aggression in the ATSS would show the same patterns as the self-report measure. Support was found for the hypothesis that adolescents in the *Support Fight*

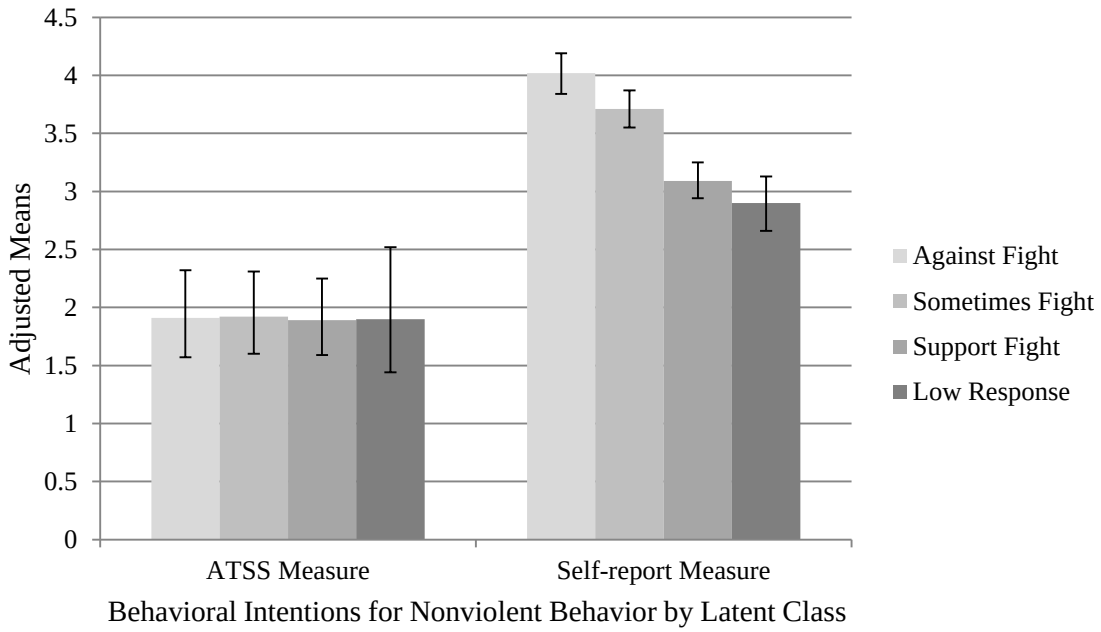

Figure 8. Adjusted means across latent classes for ratings of Behavioral Intentions for Nonviolent Behavior. Error bars represent 95% confidence intervals.

and *Sometimes Fight* classes would more frequently report that it is okay to fight in response to physical aggression than adolescents in the *Against Fight* class (Wald χ^2 (1) = 18.92, $p < .001$; see Figure 9). Follow-up analyses indicated that adolescents in the *Support Fight* and *Sometimes Fight* classes were significantly more likely to report cognitions that it is okay to fight in response to physical aggression compared to adolescents in the *Against* class (OR = 2.9, 95% CI = 1.7, 4.9, Wald χ^2 (1) = 15.84, $p<.001$ and OR = 2.8, 95% CI = 1.7, 4.8, Wald χ^2 (1) = 14.85, $p<.001$, respectively). An examination of additional differences among classes indicated that adolescents from the *Support Fight* class were not significantly different from the *Sometimes Fight* class ($p = .907$) and the *Low Response* class ($p = .196$), and adolescents from the S*ometimes Fight* class were not significantly different from the *Low Response* class ($p = .196$).

A somewhat different pattern was hypothesized for beliefs about fighting in response to nonphysical aggression. It was hypothesized that adolescents in the *Support Fight* class would be more likely to report that it is okay to fight in response to nonphysical aggression than members

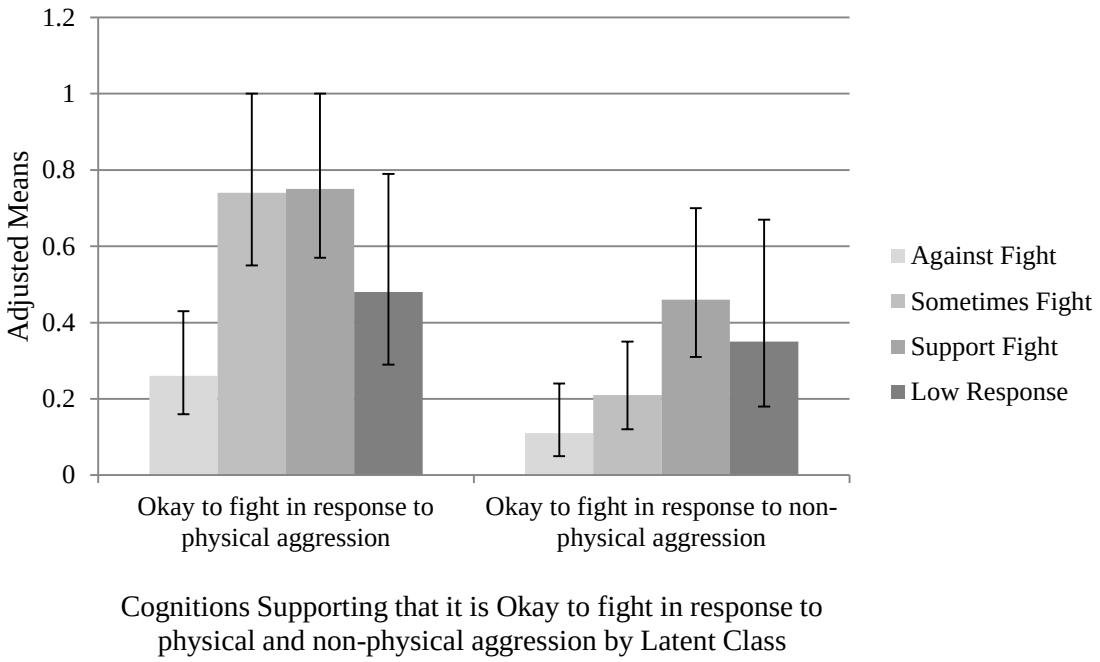

Figure 9. Adjusted means across latent classes for ratings of cognitions that it is okay to fight in response to physical and nonphysical aggression. Error bars represent 95% confidence intervals.

of the other groups, but no a priori hypotheses were made about differences among the other groups. Follow-up analyses of a significant main effect (Wald χ^2 (1) = 16.90, p = .001), indicated that adolescents in the *Support Fight* class were significantly more likely to report cognitions that it is okay to fight in response to non-physical aggression than the *Against Fight* class (OR = 4.3, 95% CI = 1.8, 10.5, Wald χ^2 (1) = 10.76, p = .001) and *Sometimes Fight* class (OR = 2.2, 95% CI = 1.3, 3.8, Wald χ^2 (1) = 8.89, p = .003). Adolescents from the *Sometimes Fight* class were not significantly different from the *Against Fight* class (p = .434), and the *Low Response* class was not significantly different from the other classes (p > .05).

Analyses of beliefs against fighting supported the hypothesis that all groups would report some beliefs against fighting on the ATSS, but that adolescents in the *Support Fight* class would be less likely to report beliefs against fighting than members of the other classes. Follow-up analyses of a significant main effect (F(3,283) = 3.25, p = .022, partial eta squared = .03; see

Figure 10), revealed a moderate effect such that adolescents in the *Against Fight* class were more likely to report beliefs against fighting than the *Support Fight* class (d = .53, p = .034). There were no significant differences in beliefs against fighting between the *Sometimes Fight* and *Support Fight* classes (p = .137), and the *Low Response* class was not significantly different from the other classes (p > .05).

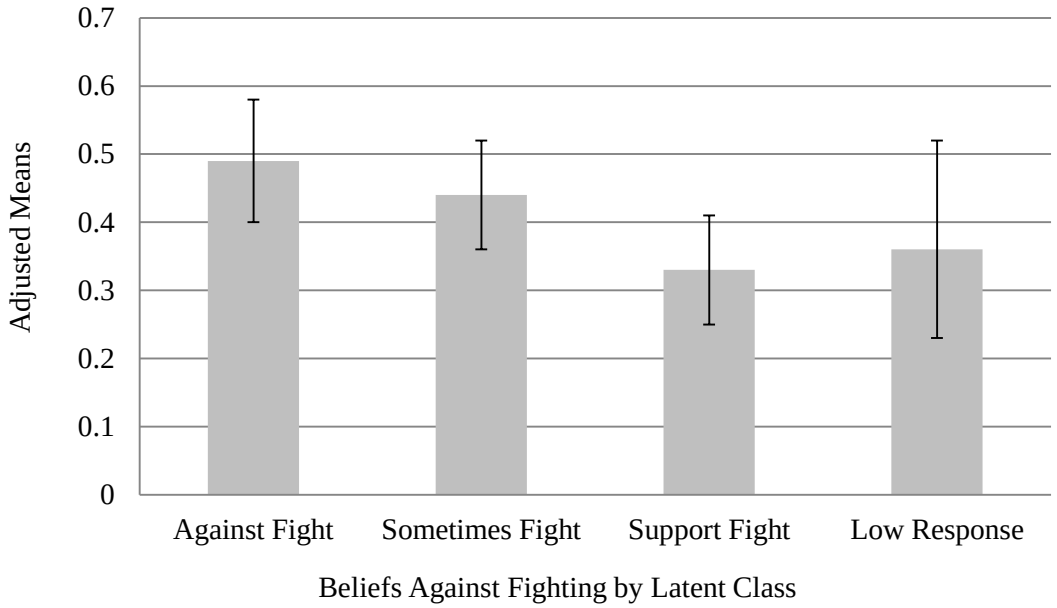

Figure 10. Adjusted means across latent classes for ratings of beliefs against fighting. Error bars represent 95% confidence intervals.

Regarding image and reputation, partial support was found for the hypothesis that adolescents in the *Sometimes Fight* class would be more likely to generate cognitions focused on maintaining a tough image and reputation than adolescents in the *Support Fight* and *Against Fight* classes. There were significant differences between latent classes on image and reputation (Wald χ^2 (3) = 13.94, p = .003; see Figure 11). Adolescents in the *Sometimes Fight* class were significantly more likely to report valuing a tough image and reputation than adolescents in the *Against Fight* class (OR = 4.5, 95% CI = 1.7, 11.9, Wald χ^2 (1) = 9.10, p = .003), but did not differ from those in the *Support Fight* class (p = .546). Adolescents in the *Support Fight* and *Low*

Response classes were significantly more likely to report valuing a tough image and reputation compared to the *Against Fight* class (OR = 5.82, 95% CI = 2.2, 15.1, Wald χ^2 (1) = 13.10, p < .001 and OR = 3.5, 95% CI = 1.1, 10.6, Wald χ^2 (1) = 4.65, p = .031, respectively). The *Low Response* class was not significantly different from the *Support Fight* and *Sometimes Fight* classes (p > .05).

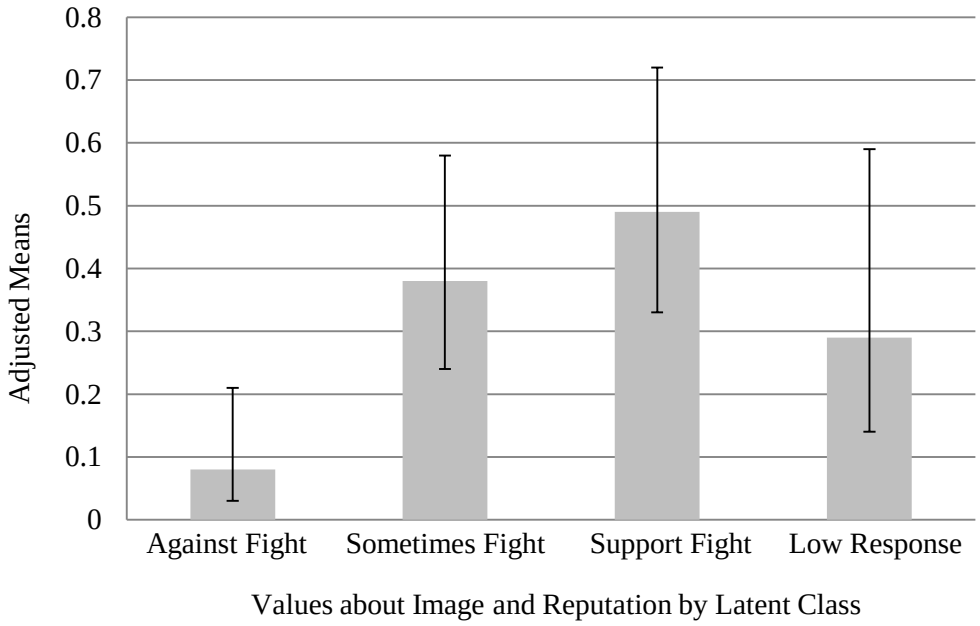

Figure 11. Adjusted means across latent classes for values about image and reputation. Error bars represent 95% confidence intervals.

Exploratory analyses were conducted to examine class differences in beliefs about right, wrong, and fairness. There were no significant differences among classes on beliefs about right, wrong, and fairness (F(3,283) = .38, p = .767, partial eta squared = .00; see Figure 12).

Differences in the Response-Decision Process. Table 16 displays the means and standard errors for all social information-processing variables within each of the latent profile groups.

The first step of the response-decision process that was examined was goal generation. Partial support was found for the hypothesis that adolescents in the *Support Fight* class would

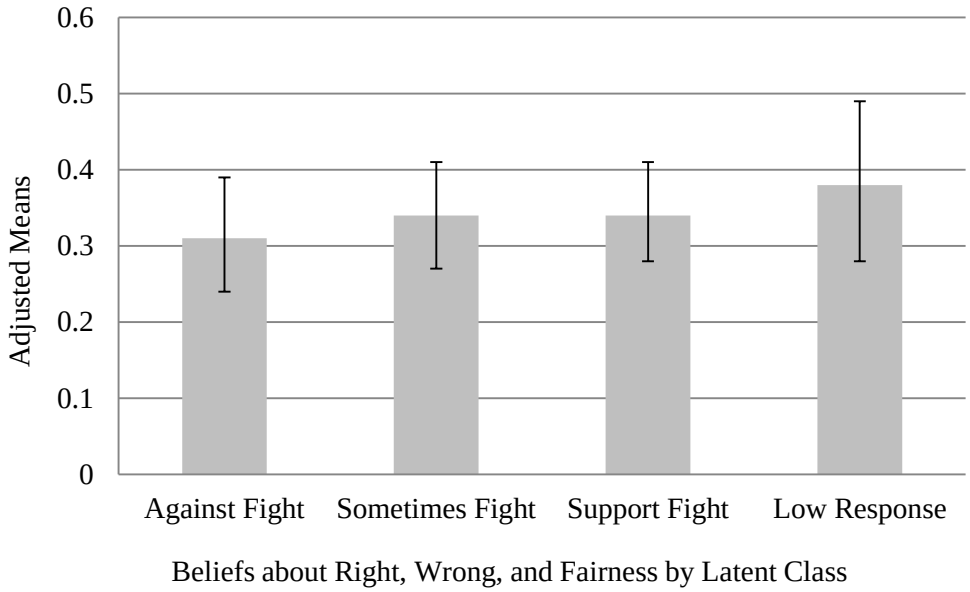

Figure 12. Adjusted means across latent classes for beliefs about right, wrong, and fairness. Error bars represent 95% confidence intervals.

generate more goals focused on revenge than adolescents with other patterns of beliefs about aggression. There were no significant differences found between latent classes on generation of revenge goals on the PSI measure (Wald χ^2 (3) = 6.92, p = .074; see Figure 13). The self-report measure, however, found significant differences among classes (F(3,325) = 12.55, p < .001). On the self-report measure, adolescents in the *Support Fight* class were significantly more likely to place value on achieving a revenge goal than adolescents in the *Against Fight* class (d = 1.45, p < .001) and *Sometimes Fight* class (d = .87, p < .001). Adolescents in the *Sometimes Fight* class and *Low Response* class reported significantly more value on achieving revenge goals compared to the *Against Fight* class (d = .63 , p = .015 and d = .91, p = .016, respectively). Results also indicated that adolescents in the *Support Fight* class were significantly more likely to value revenge compared to the *Low Response* class (d = .71, p = .002). There were no significant differences between the *Sometimes Fight* and *Low Response* classes.

Table 16.

Means and Standard Errors for Response-Decision Process Variables by Latent Class Group

Variable	Against Fight		Sometimes Fight		Support Fight		Low Response	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Goal Generation								
Revenge Goal	0.02[a]	0.02	0.04[a]	0.03	0.14[a]	0.07	0.20[a]	0.13
Revenge Subscale (SR)	1.40[a]	0.09	1.72[b]	0.08	2.32[c]	0.08	1.83[b]	0.12
Instrumental-Control Goal	0.80[a]	0.08	0.91[a]	0.05	0.83[a]	0.07	0.78[a]	0.12
Number of Responses Generated	4.09[a]	0.37	3.74[a]	0.38	3.82[a]	0.36	4.22[a]	0.57
Response Generation								
Physically Aggressive Response Generated	0.08[a]	0.05	0.24[a]	0.09	0.52[b]	0.10	0.49[ab]	0.16
Aggressive First Response	0.32[a]	0.09	0.36[a]	0.10	0.74[b]	0.09	0.48[ab]	0.16
Aggressive Response Generated	0.76[a]	0.09	0.77[a]	0.09	0.86[a]	0.06	0.94[a]	0.06
Prosocial First Response	0.79[a]	0.08	0.63[a]	0.10	0.49[a]	0.10	0.54[a]	0.15
Prosocial Response Generated	0.83[a]	0.08	0.83[a]	0.08	0.76[a]	0.09	0.88[a]	0.09
Prosocial Subscale (SR)	3.11[a]	0.08	2.86[a]	0.07	2.55[b]	0.07	2.36[b]	0.11
Response Evaluation: Effective Nonviolent Response								
Fighting Consequences for Effective Response	0.15[a]	0.07	0.29[a]	0.10	0.16[a]	0.07	0.11[a]	0.08
Other Negative Consequences for Effective Response	0.33[a]	0.09	0.18[a]	0.07	0.27[a]	0.08	0.11[a]	0.08
Perceived Effectiveness: Effective Responses (SR)	3.83[a]	0.09	3.67[a]	0.08	3.26[b]	0.08	3.03[b]	0.12
Response Evaluation: Physical Aggression								
Positive Consequences for Physical Aggression	0.09[a]	0.05	0.28[ac]	0.09	0.61[b]	0.10	0.53[bc]	0.16
Fighting Consequences for Physical Aggression	0.60[a]	0.10	0.62[a]	0.10	0.58[a]	0.10	0.46[a]	0.15
Perceived Effectiveness: Physical Aggression (SR)	2.45[a]	0.12	2.70[a]	0.11	3.11[b]	0.11	2.60[a]	0.16

Note. Means with the same superscripts are not significantly different. Against Fight = Beliefs Against Fighting class. Sometimes Fight = Fighting is Sometimes Necessary class. Support Fight = Beliefs Supporting Fighting class. Low Response = Low Responders class. SR = Self-report measure. All other codes are from the PSI interview.

Regarding the generation of instrumental-control goals, it was hypothesized that adolescents in the *Support Fight* class would generate more instrumental-control goals (i.e., getting what the youth desires in that situation) than adolescents with other patterns of beliefs about aggression. Contrary to the hypotheses, there were no significant differences between

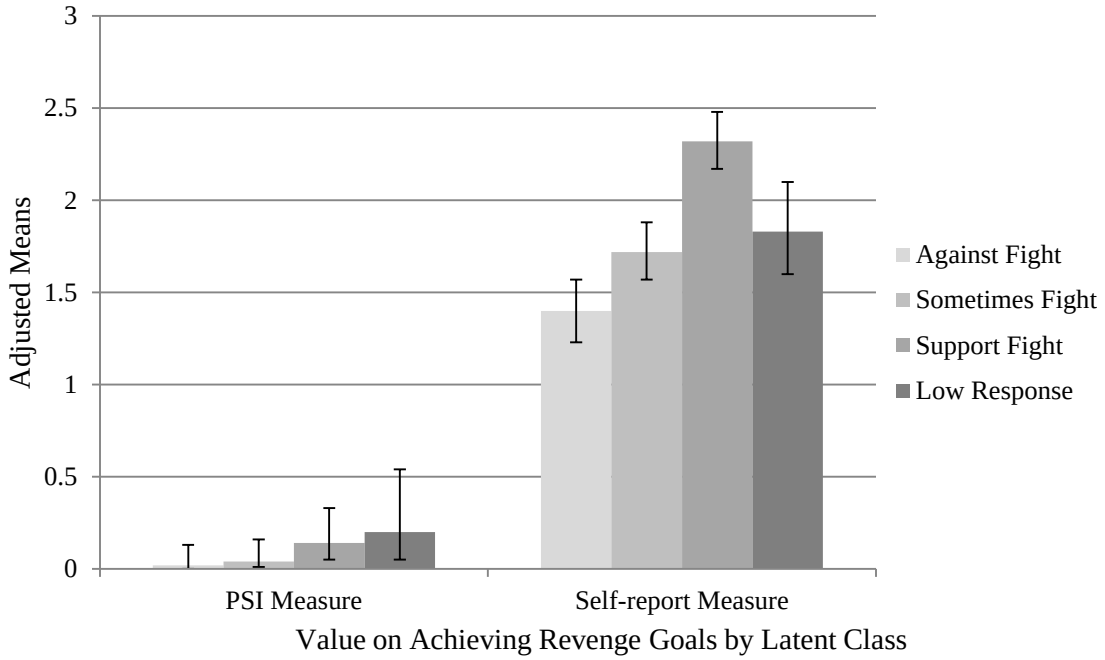

Figure 13. Adjusted means across latent classes for value on achieving a goal of revenge. Error bars represent 95% confidence intervals.

latent classes on the generation of instrumental-control goals (Wald χ^2 (3) = 1.92, p = .59; see Figure 14).

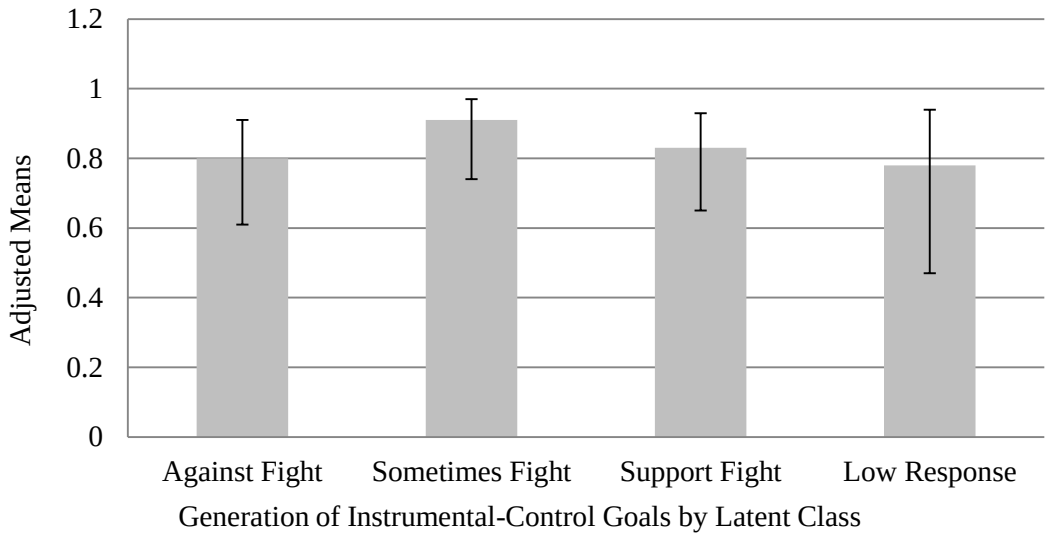

Figure 14. Adjusted means across latent classes for generation of instrumental-control goals. Error bars represent 95% confidence intervals.

Response generation was the next step of the response-decision process to be examined. It was hypothesized that adolescents in the *Support Fight* class would generate fewer prosocial responses and fewer numbers of responses in general than adolescents with other patterns of beliefs about aggression. Contrary to the hypotheses, there were no significant differences between latent classes on the average number of responses generated across situations ($F(1,128) = .23$, $p = .879$, partial eta squared = .01; see Figure 15). There were also no significant class differences in the generation of a prosocial response as the first response (Wald $\chi^2(3) = 6.00$, $p = .111$) and in the generation of any prosocial response (Wald $\chi^2(3) = 1.20$, $p = .753$; see Figure 16).

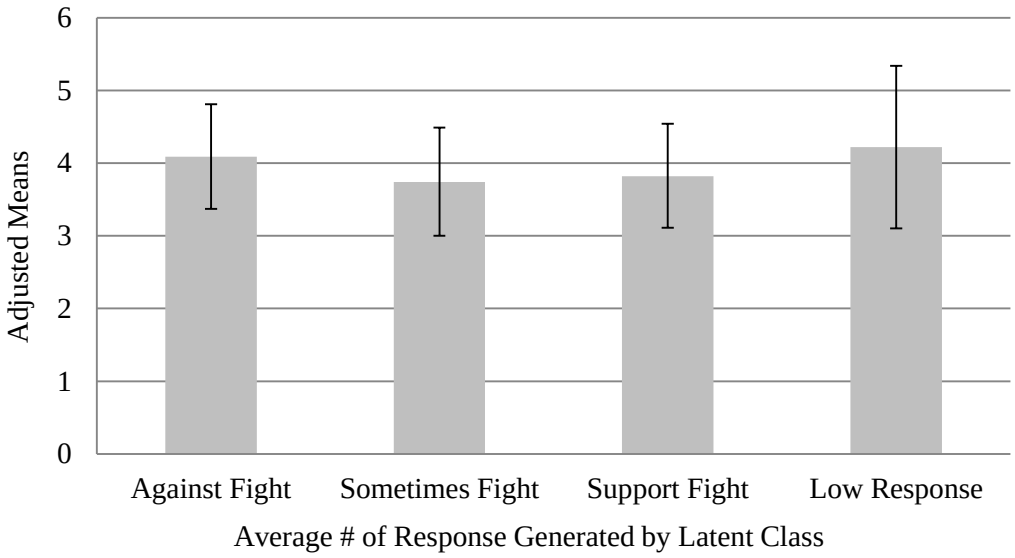

Figure 15. Adjusted means across latent classes for average number of responses generated. Error bars represent 95% confidence intervals.

It was hypothesized that the *Support Fight* class would generate more aggressive responses than the class of adolescents with other patterns of beliefs about aggression. Analyses of whether any physically aggressive response was generated across situations revealed a significant main effect for class (Wald $\chi^2(3) = 15.49$, $p = .001$; see Figure 17). As hypothesized, adolescents in the *Support Fight* class were significantly more likely to generate a physically

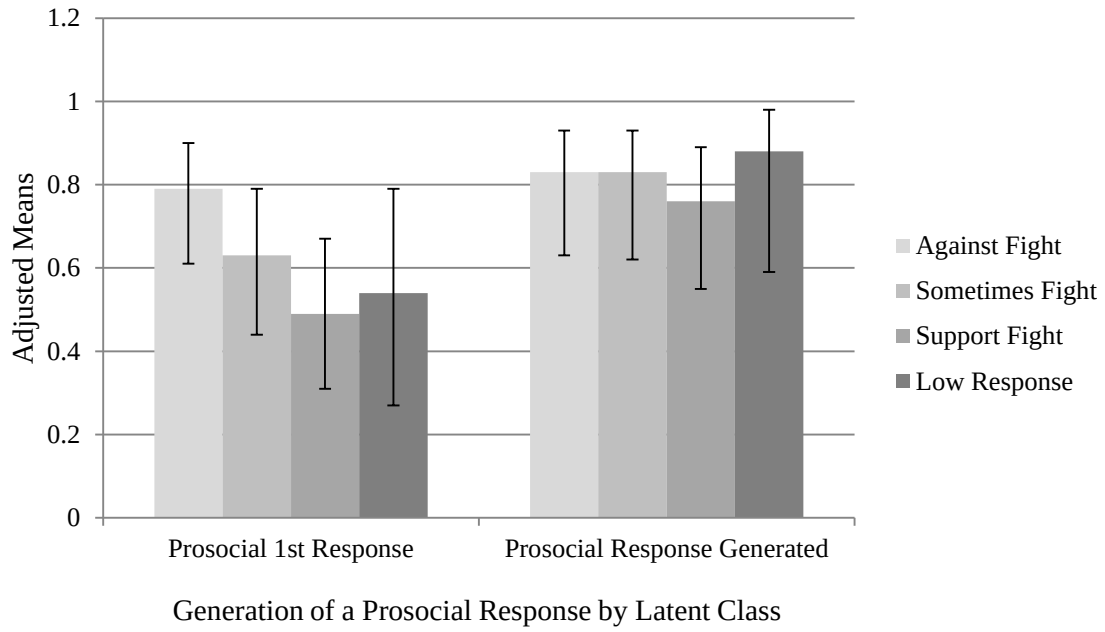

Figure 16. Adjusted means across latent classes for generation of a prosocial response. Error bars represent 95% confidence intervals.

aggressive response than adolescents in the *Against Fight* class (OR = 13.4, 95% CI = 3.2, 56.7, Wald χ^2 (1) = 12.43, $p < .001$). Contrary to the hypotheses, the *Support Fight* class was not more likely to generate physically aggressive responses than the *Sometimes Fight* class ($p = .056$). The *Against Fight* class was not significantly different from *Sometimes Fight* class ($p = .406$), and the *Low Response* class was not significantly different from the other latent classes ($p > .05$).

Class differences were also expected in the generation of any form of aggression as a response. It was hypothesized that adolescents in the *Support Fight* class would be more likely to generate an aggressive response than adolescents with other patterns of beliefs about aggression. Analyses of whether any form of aggression was generated as a first response revealed a main effect for class (Wald χ^2 (3) = 11.26, $p = .01$; see Figure 18). As hypothesized, adolescents in the *Support Fight* class were significantly more likely to generate a first response that was aggressive than those in the *Against Fight* class (OR = 6.0, 95% CI = 1.9, 18.9, Wald χ^2 (1) = 9.41, $p = .002$) and the *Sometimes Fight* class (OR = 5.0, 95% CI = 1.7, 14.7, Wald χ^2 (1) =

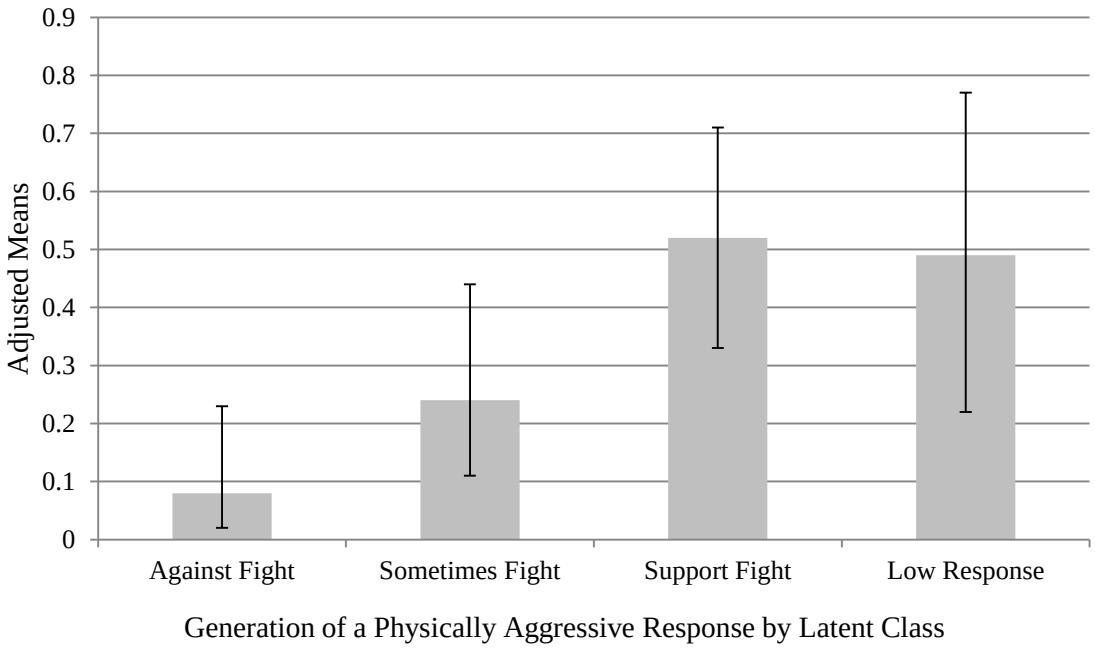

Figure 17. Adjusted means across latent classes for generation of a physically aggressive response. Error bars represent 95% confidence intervals.

8.67, $p = .003$). The *Against Fight* class was not significantly different from the *Sometimes Fight* class, and none of the classes were significantly different from the *Low Response* class ($p > .05$). In addition, there were no significant differences across classes in the generation of any aggressive response when brainstorming responses for difficult situations (Wald χ^2 (3) = 3.15, $p = .369$).

Finally, differences in the evaluation of aggressive and prosocial responses were compared across classes. It was hypothesized that adolescents in the *Support Fight* class would be less likely to evaluate prosocial responses positively compared to adolescents in the *Sometimes Fight* and *Against Fight* classes, but that there would be no significant differences across the remaining classes. There were no significant main effects for class in the types of consequences generated for effective nonviolent responses, including the generation of fighting or escalating consequences (Wald χ^2 (3) = 3.56, $p = .313$) or other negative consequences for the interview respondent (Wald χ^2 (3) = 3.52, $p = .319$; see Figure 19).

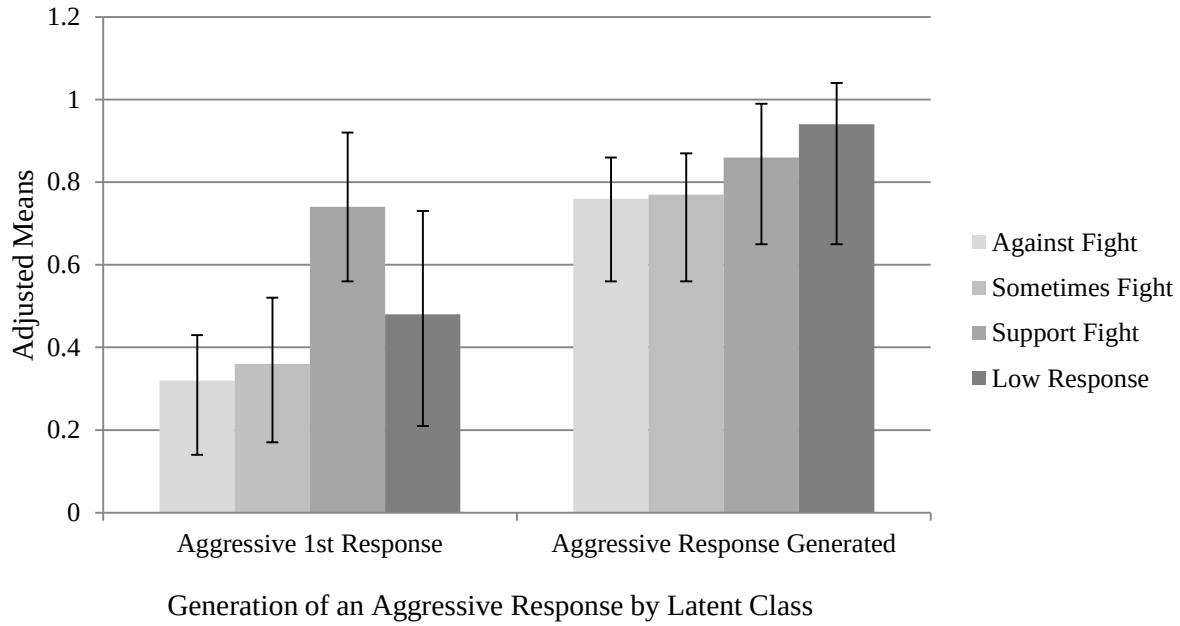

Figure 18. Adjusted means across latent classes for generation of an aggressive response. Error bars represent 95% confidence intervals.

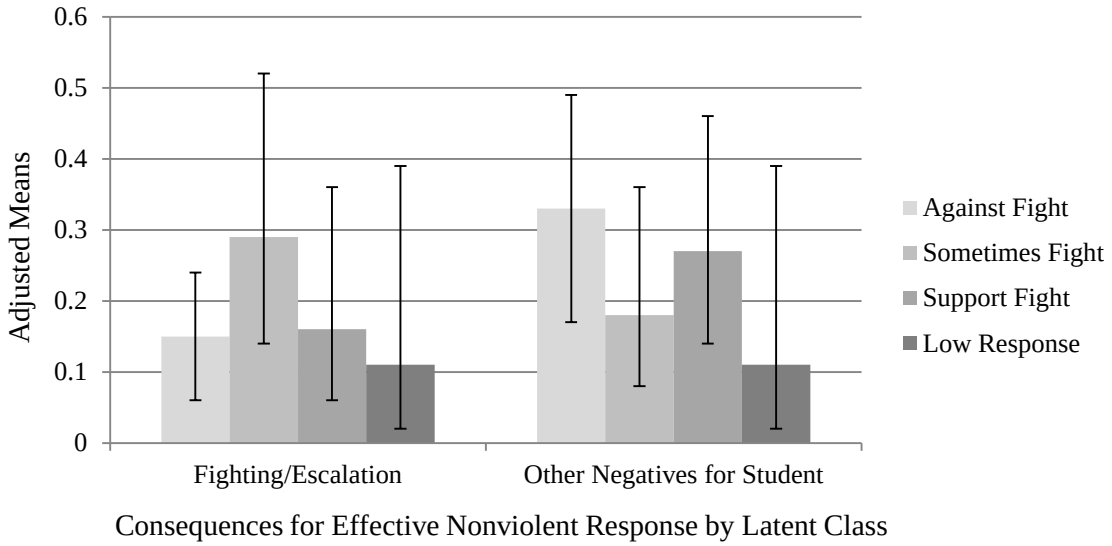

Figure 19. Adjusted means across latent classes for generation of consequences for an effective nonviolent response. Error bars represent 95% confidence intervals.

It was also hypothesized that adolescents in the *Sometimes Fight* class would be less likely to evaluate physical aggression positively than adolescents in the *Support Fight* class, but more likely than adolescents in the *Against Fight* class. There was a significant main effect for

class on positive consequences identified for a physically aggressive response (Wald χ^2 (3) = 16.94, p = .001; see Figure 20). Adolescents in the *Support Fight* class were more likely to generate positive consequences for physical aggression than the *Against Fight* class (d = .89, p < .001) and *Sometimes Fight* class (d = .42, p = .028). Contrary to the hypotheses, the *Against Fight* class and *Sometimes Fight* class were not significantly different (p = .254). Adolescents in the *Low Response* class reported significantly more positive consequences for physical aggression than did adolescents in the *Against Fight* class (d = 1.06, p = .037), but there were not significant differences found between the *Low Response* class and the remaining classes (p > .05). There were no significant main effects for class in the generation of fighting or escalation consequences for a physically aggressive response (Wald χ^2 (3) = .96, p = .811).

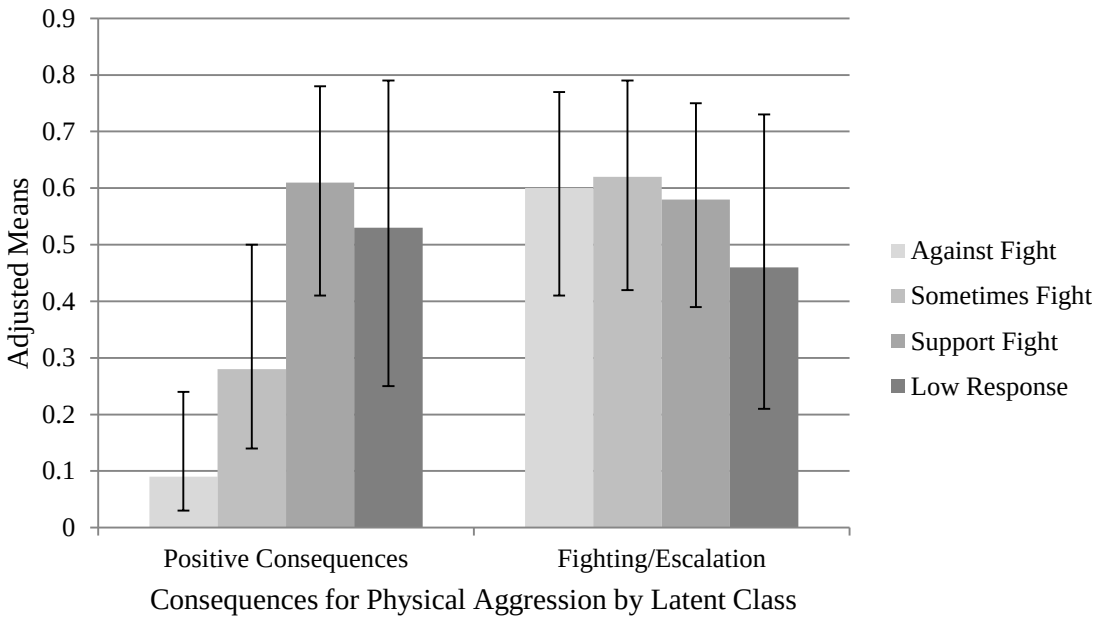

Figure 20. Adjusted means across latent classes for generation of consequences for physical aggression. Error bars represent 95% confidence intervals.

Although the analyses of class differences in the evaluation of effective nonviolent and aggressive responses were primarily focused on consequences that were generated during the PSI, class differences in perceived effectiveness for effective nonviolent and physically

aggressive responses were also evaluated using a self-report measure. There was a significant main effect for class in perceived effectiveness of effective nonviolent responses ($F(3,359) = 17.69$, $p < .001$, partial eta squared = .13; see Figure 21). Pairwise comparisons revealed that adolescents in the *Support Fight* rated effective nonviolent responses as less effective than the *Against Fight* class ($p < .001$, $d = .79$) and *Sometimes Fight* class ($p < .001$, $d = .58$). The *Against Fight* class and *Sometimes Fight* class were not significantly different ($p = .857$). Adolescents in the *Low Response* class were not significantly different from the *Support Fight* class ($p = .857$), but were less likely to evaluate effective nonviolent responses positively than adolescents in the *Against Fight* class ($d = 1.12$, $p < .001$) and *Sometimes Fight* class ($d = .94$, $p < .001$).

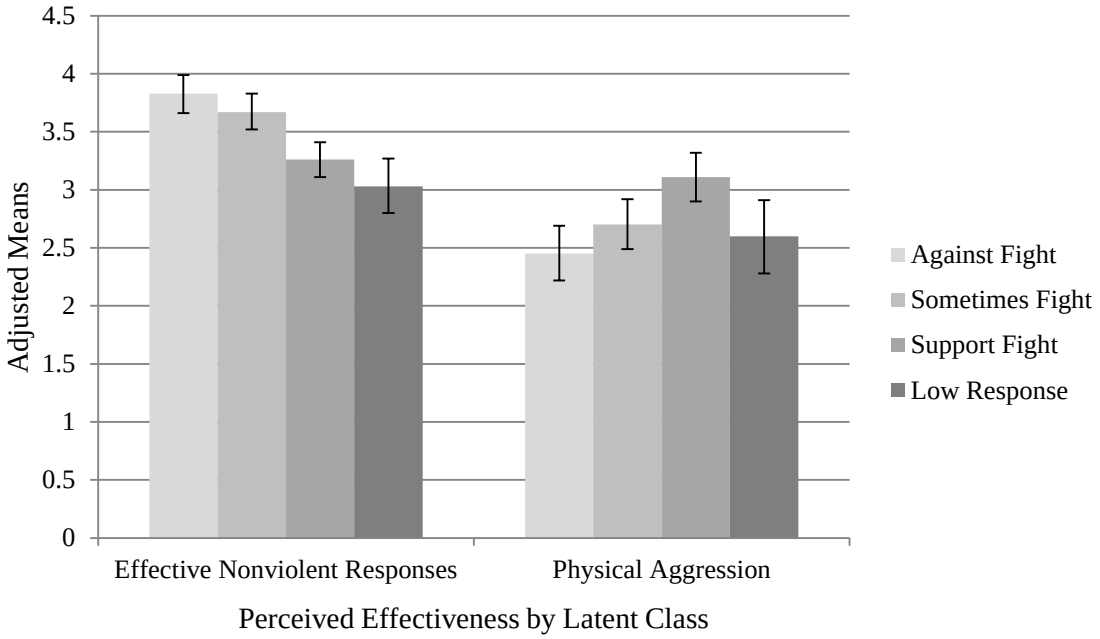

Figure 21. Adjusted means across latent classes for perceived effectiveness of effective nonviolent and physically aggressive responses. Error bars represent 95% confidence intervals.

Evaluation of class differences in perceived effectiveness of physical aggression using the self-report measure was consistent with the generation of consequences for physically aggressive responses on the PSI. There was a significant main effect for class in perceived effectiveness of physically aggressive responses ($F(3,361) = 7.14$, $p < .001$, partial eta squared =

.06). Pairwise comparisons revealed that adolescents in the *Support Fight* class rated physical aggression as more effective than the *Against Fight* (d = .78, p < .001), *Sometimes Fight* (d = .47, p = .012), and *Low Response* (d = .65, p = .026) classes. Contrary to the hypotheses, but consistent with the PSI measure, the *Against Fight* class and *Sometimes Fight* class were not significantly different (p = .577). There were no significant differences between the *Low Response* class and the *Against Fight* and *Sometimes Fight* classes (p > .05).

Discussion

The purpose of this study was to examine relations between adolescents' patterns of beliefs about fighting and their social information-processing skills. More specifically, this study provided a further test of the multidimensional pattern of adolescents' beliefs about fighting identified by Farrell et al. (2012). This study extended the findings of that study by examining differences in social information-processing cognitions and the response-decision process among adolescents with distinct patterns of beliefs about aggression. This section discusses the overall findings of this study and how they relate to the current literature. First, the four patterns of beliefs about fighting are discussed. Next, how adolescents with distinct patterns of beliefs about fighting differed in their social information-processing abilities is discussed. Next, explanations for unsupported hypotheses and ways that the current study differs from the previous literature are presented. Then differences in beliefs about aggression and social information-processing variables among demographic variables, specifically gender and race/ethnicity, are discussed. Lastly, the limitations of this study, future directions for research, and implications of this study's findings are presented.

Patterns of Beliefs about Fighting

Latent class analyses using self-report measures of beliefs about fighting identified distinct classes of adolescents who differed in their patterns of beliefs about fighting. The results were generally consistent with the study's hypotheses and with patterns of aggressive behavior identified in previous research (e.g., Moffitt, 1993). More specifically, the current study

replicated the findings of Farrell et al. (2012) and found support for three patterns of beliefs about aggression: (a) *beliefs against fighting*; (b) *beliefs supporting fighting*; and (c) *beliefs that fighting is sometimes necessary*. The current study also identified a fourth class of adolescents, *Low Responders*, who disagreed with the majority of items on the Beliefs about Fighting measure, including both beliefs against fighting and beliefs supporting fighting.

Recent research provides support for multiple patterns of beliefs about aggression. Although many studies and existing measures of beliefs about aggression assume a single underlying dimension representing the extent to which aggression is considered appropriate (e.g., Huesmann & Guerra, 1997), more recent studies have found multiple patterns of normative beliefs about aggression that impact aggressive behavior (Frey, 2011; Goldweber et al., 2011). For instance, research has found that both beliefs supporting aggression and beliefs supporting nonviolence uniquely impact aggression and are important for understanding youths' risk for engaging in aggressive behaviors (Elsaesser et al., 2013; Henry et al., 2011). Consistent with this research, the current study found three classes of adolescents with beliefs about aggression that reflected distinct patterns of adolescents' beliefs about fighting, such that classes of adolescents differed in their support for fighting, but adolescents across classes also endorsed beliefs against aggression.

The current study identified a class of adolescents with *beliefs supporting fighting* (38% of the sample) who endorsed beliefs supporting the use of reactive aggression and beliefs that fighting is sometimes necessary. The endorsement of beliefs that fighting is sometimes necessary reflected beliefs that involved rules of engagement dictating when fighting may be appropriate, and beliefs that fighting is justified or even necessary in response to specific provocations. The endorsement of beliefs supporting the use of reactive aggression reflected beliefs that aggression

is justified in response to forms of provocation such as having someone tease you, push you, or do something to make you mad. Although they more strongly endorsed beliefs in support of fighting compared to the other classes, these beliefs were more reflective of reactive aggression (M = 2.82, SD = 0.44) than instrumental aggression (M = 1.70, SD = 0.63).

As hypothesized, one-third of the sample (31%) endorsed *beliefs that fighting is necessary* or inevitable in order to prevent additional negative outcomes, such as being teased or having their reputation harmed. This is consistent with the latent classes found by Farrell and colleagues (2012) and with previous qualitative research in which urban adolescents were asked why they felt aggressive responses were their only option in specific situations (Farrell et al., 2008, 2010). Similar to adolescents with *beliefs supporting aggression*, these adolescents also endorsed a pattern of beliefs that fighting is justified in response to specific provocations. On the other hand, as compared to adolescents with *beliefs supporting aggression*, adolescents in this class were more likely to endorse beliefs against aggression and less likely to endorse beliefs supporting the use of reactive aggression with the exception of one item, "If someone pushes you, you should push them back."

It is important to note that adolescents in the *beliefs supporting fighting*, *fighting is sometimes necessary*, and *beliefs against fighting* classes also endorsed beliefs against the use of fighting. In fact, the majority of adolescents within this study endorsed general beliefs against aggression while also agreeing with beliefs that fighting is necessary in specific situations. This illustrates the multidimensional nature of their beliefs. Consistent with these findings, the majority of adolescents across classes also positively evaluated effective nonviolent responses and generated at least one prosocial response when asked what they would do in two difficult situations of peer provocation. Similarly, researchers have argued for the importance of

considering the impact of multiple types of latent structures (e.g., moral judgments, beliefs about aggression, and beliefs about relationships) on social information-processing (Crick & Dodge, 1994; Dodge & Rabiner, 2004). These findings highlight the importance of assessing both beliefs supporting and those opposing the use of aggression within one study.

One difference between the latent classes found in this study and those found by Farrell and colleagues (2012) is the emergence of a class of *Low Responders.* One potential reason for the emergence of this class is that participants in this class may have been fatigued or bored with the study, which resulted in their negative response to all items. Fatigue is a potential threat to internal validity that may occur when subjects become bored or disinterested after completing measures on multiple occasions (Campbell & Stanley, 1963). Whereas the data used by Farrell et al. (2012) were collected during the first wave of the study, the data used for the current study were from the second or fourth waves. The class of *Low Responders* may have emerged as participants became less interested in completing the self-report measures. Consistent with this hypothesis, adolescents in this class also tended to disagree with the majority of items on self-report measures of social information-processing (e.g., items reflecting behavioral intentions for nonviolence and perceived effectiveness for nonviolence and physical aggression). In addition, adolescents in this class tended to respond negatively to items on the self-report measures only. For example, adolescents in this class responded significantly lower than adolescents in the other classes on the self-report measure of behavioral intentions for nonviolence. They were not, however, significantly different from adolescents in the other classes on their generation of behavioral intentions for nonviolence on the ATSS interview.

Separating the *Low Responders* class from the other three classes allowed for comparisons among the three hypothesized classes without threats to internal validity from the

participants who may have been disinterested in the study and less accurate in responding. This class will not be discussed in detail as it represented a small portion of the sample (12%), was not consistent with previous research, and responses likely reflect constructs other than those of interest (e.g., study fatigue).

Differences in Social Information-Processing Patterns

In general, it was hypothesized that adolescents with *beliefs that fighting is sometimes necessary* would demonstrate similar social information-processing skills as those with *beliefs against fighting* and more sophisticated social information-processing skills than those with *beliefs that support aggression*. This hypothesis was based on research suggesting that aggression can be adaptive and may be appropriate depending upon reinforcement in the environment (e.g., Fagan & Wilkinson 1998). Consistent with the hypothesis, adolescents who held *beliefs supporting fighting* frequently exhibited social information-processing biases that were consistent with increased use of aggression, especially as compared to adolescents with *beliefs against fighting*. The findings also suggested that adolescents who held *beliefs that fighting is sometimes necessary* primarily displayed similar social information-processing patterns to adolescents who held general *beliefs against aggression.* However, as hypothesized, this class of adolescents also demonstrated some social information-processing biases similar to adolescents who held *beliefs supporting aggression*, such as in situations that contained physical provocation. The following section demonstrates how this pattern was consistent across social information-processing cognitions, goals, responses generated, and evaluation of responses (i.e., ratings of effectiveness and generation of consequences for physically aggressive and effective nonviolent responses). The section also discusses how these overall patterns relate to previous research on multiple trajectories of aggression (Moffitt, 1993). Lastly, this section describes how

study findings that are inconsistent with the hypotheses may be related to differences between this study and previous research.

Differences in Social Information-Processing Cognitions. As hypothesized, class differences in social information-processing cognitions suggested that adolescents with *beliefs supporting fighting* were more likely to hold maladaptive social information-processing cognitions than were adolescents in the *beliefs against fighting* class. Differences between these classes were especially strong when assessing cognitions about the use of physical and non-physical aggression as compared to cognitions about the use of prosocial behaviors. For instance, this study found that adolescents with *beliefs supporting fighting* were more likely to report behavioral intentions for aggression and beliefs that it is okay to fight in response to physical and non-physical aggression and were less likely to report beliefs against aggression and behavioral intentions for nonviolence than adolescents with *beliefs against fighting*. These findings are consistent with differences between these two classes in beliefs about physically aggressive and nonviolent responses that were initially found by Farrell and colleagues (2012). A previous study also using the ATSS approach indicated that aggressive youth were more likely to report behavioral intentions for aggression compared to their nonaggressive peers (DiLiberto et al., 2002). In addition, previous research has suggested that adolescents maintain beliefs that legitimize the use of aggression in order to avoid a negative image in environments that provide support for the use of aggression (Marcelli, 2002).

As hypothesized, adolescents in the *beliefs that fighting is sometimes necessary* class differed in how they compared with adolescents in the other classes by the specific cognitions examined and the type of peer provocation (e.g., physical or nonphysical). Adolescents in the *beliefs that fighting is sometimes necessary* class were similar to adolescents in the *beliefs*

against fighting class and reported more cognitions supporting nonviolent approaches (i.e., behavioral intentions for nonviolence and beliefs against aggression) than did adolescents in the *beliefs supporting fighting* class. Adolescents in this class were also similar to adolescents in the *beliefs against fighting* class and were less likely to report beliefs that it is okay to fight when the provocation by peers was not physical than were adolescents in the *beliefs supporting fighting* class. However, adolescents in the *beliefs that fighting is sometimes necessary* class were also similar to adolescents in the *beliefs supporting fighting* class and reported more behavioral intentions for aggression and beliefs that it is okay to fight when the provocation was physical than did adolescents with *beliefs against aggression*. These findings suggest that adolescents who believe that *fighting is sometimes necessary* are at more risk for aggressive behavior, especially when physically provoked, than those who hold *beliefs against fighting*. However, these adolescents are at a lower risk than those who *support aggression* as they appear to hold beliefs supporting both the use of nonviolent and aggressive behavior depending upon the context of the situation. These findings replicate Farrell and colleagues' findings (2012). Previous research has supported a strong link between *beliefs supporting aggression* and engagement in aggressive behavior (e.g., Huesmann & Guerra, 1997), but has not examined the associations found in this study due to the lack of multidimensional measures of beliefs about aggression (e.g., Fishbein & Ajzen, 1975; Henry & Chan, 2010).

Exploratory analyses were conducted to examine differences in beliefs about right, wrong, and fairness among the classes of adolescents based on their beliefs about fighting. No class differences were found and the majority of adolescents did not tend to generate this theme in response to the ATSS scenarios. Previous research has suggested that both aggressive and nonaggressive children are concerned with fairness by others and may share a common moral

code that it is not acceptable for someone to do something bad on purpose (Coie & Dodge, 1998; Crick & Dodge, 1994). Additionally, research has suggested that youths who engage in reactive aggression, which is similar to adolescents in the *beliefs supporting fighting* class, may be acting out of response to anger and heightened physiological arousal rather than due to a rejection of moral knowledge or values about fairness (Hubbard et al., 2002; Sutton, Smith, & Swettenham, 1999).

Differences in Goals. As hypothesized, an examination of adolescents' goals (i.e., get revenge, maintain tough image and reputation, and instrumental control) suggested that adolescents with *beliefs that support aggression* demonstrate less sophisticated social information-processing skills than those who hold *beliefs that fighting is sometimes necessary*, but both classes may respond to aggressive goals due to reinforcement within the environment. As expected, adolescents with *beliefs supporting aggression* endorsed more goals focused on revenge than did adolescents with other patterns of beliefs about aggression on the self-report measure. In addition, adolescents with *beliefs that fighting is sometimes necessary* were more likely to endorse goals focused on revenge than were adolescents with *beliefs against aggression.* This is consistent with previous research examining differences in goals for aggressive and nonaggressive children that has suggested that aggressive children seek revenge or retaliation goals against individuals who present obstacles to those goals (Erdley & Asher, 1998; Slaby & Guerra, 1988). Similarly, McDonald (2008) found that suburban adolescents with beliefs legitimizing the use of aggression were more likely to endorse revenge goals. This study extends those findings to show that adolescents who hold beliefs that fighting is only necessary in response to specific types of provocation are not as focused on getting revenge in challenging peer situations as youth that generally support aggression. These adolescents may instead be

focused on obtaining multiple types of goals when faced with difficult situations of peer provocation.

In addition, this study found that adolescents with *beliefs that fighting is sometimes necessary* were similar to adolescents with *beliefs supporting fighting* in the value placed on maintaining a tough image and reputation and were more likely to report this value than adolescents with *beliefs against aggression.* These findings suggest that the majority of youth engaging in aggression may be concerned about and responding to reinforcement for aggression by their environment. The results indicating similar tough image and reputation goals between adolescents in *both* groups who support the use of aggression is consistent with the overarching findings of this study regarding the strong environmental influence on aggressive behavior regardless of overall social information-processing abilities. Interestingly, although these results are contradictory to the proposed hypothesis, the findings are consistent with some research suggesting that adolescents maintain beliefs that legitimize the use of aggression in order to avoid a negative image in environments that provide support for the use of aggression (Marcelli, 2002). Additionally, research has indicated that adolescent-onset aggressors, who are similar to adolescents with *beliefs that fighting is sometimes necessary*, are more focused on social potency, affiliation with their peers, and appearing to be more mature than were their peers (Moffitt et al., 1996).

Differences in Response Generation. As hypothesized, there were distinct differences among classes in the generation of aggressive responses. However, contrary to the hypothesis, there were no class differences in the generation of prosocial responses as all adolescents regardless of class were likely to generate at least one prosocial response. Although contrary to

the hypotheses, this finding is consistent with other study findings, such as adolescents in all three classes endorsing beliefs against the use of aggression.

As predicted, adolescents with *beliefs supporting fighting* were more likely to generate a physically aggressive response and identify an aggressive response as their first response compared to youth with general *beliefs against aggression*. These findings are supported by research suggesting that aggressive youth access aggressive responses more readily compared to their peers (Crick & Dodge, 1994). Adolescents with *beliefs that fighting is sometimes necessary* were similar to adolescents with *beliefs against aggression* and were less likely to identify an aggressive response as their first response than were adolescents with *beliefs supporting fighting*. Therefore, adolescents that are using aggression more frequently (i.e., *beliefs supporting aggression* class) are more likely to access aggressive responses quickly and use them as the first response to a difficult situation than adolescents who only use aggression in specific contexts (i.e., *beliefs that fighting is sometimes necessary* class). The current study did not include physical provocation within the problem solving situations, and therefore, adolescents with *beliefs that fighting is sometimes necessary* may have been less likely to report immediately engaging in aggressive behavior prior to trying other strategies due to the specific context of the chosen situations.

Differences in Response Evaluation. Consistent with the findings for other steps of the social information-processing model, adolescents with *beliefs that fighting is sometimes necessary* evaluated physically aggressive and effective nonviolent responses similarly to adolescents with *beliefs against fighting* and differently from adolescents with *beliefs supporting fighting.* As predicted, adolescents with *beliefs supporting fighting* evaluated physical aggression as more effective and positive as compared to adolescents in the other two classes. On the other

hand, there were no significant differences among classes in the identification of negative consequences for physical aggression, including a physically aggressive response leading to a fight or escalation of conflict and other negative consequences for the respondent. The majority of adolescents across classes identified at least one fighting or negative consequence for physical aggression, which may partially explain the lack of differences. These findings suggest that whether youths generate positive consequences for aggressive behavior may be more reflective of beliefs about aggression and aggressive behavior than understanding that there are negative consequences for physical aggression. Consistent with this finding, previous research has found that aggressive youths anticipated more positive intrapersonal consequences for aggressing, but did not differ in their anticipation of negative consequences for aggressing as compared to nonaggressive youths (Dodge, Lochman, Harnish, Bates, & Pettit, 1997).

In addition, adolescents with *beliefs against fighting* and *beliefs that fighting is sometimes necessary* rated an effective nonviolent response as more effective than did adolescents with *beliefs supporting fighting.* Results suggest that although adolescents with *beliefs that fighting is sometimes necessary* may support the use of aggression in specific situations, they are able to understand the overall effectiveness of both physically aggressive and effective *nonviolent* responses and are similar to adolescents with *beliefs against fighting* in this evaluation. Previous research has suggested that prosocial youth may be more likely to positively evaluate the use of prosocial responses and more negatively evaluate the use of relationally and physically aggressive responses to peer conflict as compared with their more aggressive peers (Nelson & Crick, 1999). This study extends the findings of previous research that has not examined differences in outcome evaluation of physically aggressive and prosocial responses among adolescents with the distinct patterns of beliefs about aggression found in this study.

Overall Pattern of Social Information-Processing Biases. This study's findings suggest that the two classes of adolescents whose support for aggression differs depending upon the context of the situation may reflect different trajectories of aggression. The pattern of *beliefs supporting the use of aggression* may be associated with a trajectory of life-course persistent aggression (Moffitt, 1993). The majority of findings suggest that adolescents with *beliefs supporting the use of aggression* hold maladaptive social information-processing biases. These biases include increased behavioral intentions for aggression, beliefs that it is okay to fight in response to physical and non-physical aggression, value on maintaining a tough image and reputation, goals focused on revenge, generation of aggression as a first response, any generation of physical aggression as a potential response, and generation of positive consequences for the use of physical aggression. Adolescents in this class also rated effective nonviolent responses as less effective than adolescents in the other classes. Life-course persistent aggressors experience significant maladaptive social information-processing biases that are related to increased rates of aggression (Dodge et al., 1997; Shure & Spivak, 1976; Spivak & Shure, 1974). Consistent with this study's findings, previous research has described reactively aggressive youth as experiencing poor emotional control and impulsivity and found that the use of reactive aggression is frequently associated with anger and heightened physiological arousal (Crick & Dodge, 1996; Hubbard et al., 2002).

Adolescents in the *beliefs supporting fighting* and *beliefs against fighting* classes were different in their generation of cognitions about the use of physical and non-physical aggression and in their generation and evaluation of physically aggressive responses. On the other hand, adolescents in these classes were similar in their generation of cognitions, responses, and consequences related to prosocial behavior. These findings are consistent with findings from

previous research that have depicted beliefs about aggression and beliefs about nonviolence as distinct factors. For example, in one study researchers conducted a factor analysis of items assessing normative beliefs about physical aggression and conflict and found two distinct factors assessing favorable attitudes towards violence and favorable attitude s towards nonviolence (Farrell, Meyer, & White, 2001).

Adolescents with a pattern of *beliefs that fighting is sometimes necessary* may be consistent with a trajectory of adolescent-onset aggression. Within the current study these adolescents did not show the same maladaptive social information-processing biases as adolescents who *generally supported aggression*. These findings are consistent with the study by Farrell and colleagues (2012) that found that adolescents who identified *beliefs that fighting is sometimes necessary* did not show the same risk factors and elevated problems as adolescents with *beliefs supporting aggression*. Research has suggested that the development of adolescent-onset aggression is not explained by deficits in social information-processing (Moffitt, 1993). For instance, research has indicated that adolescent-onset aggressors do not show the same pattern of biases in specific components of the social information-processing model (e.g., Caspi & Moffitt, 1995; Crick & Dodge, 1996; Erdley & Asher, 1998; Slaby & Guerra, 1988). In contrast, Moffitt (1993) suggested that adolescents in this class are more strongly influenced by external factors. Furthermore, researchers examining social information-processing have suggested social adjustment, including peer evaluation and other social experiences, may impact the development of social cognitions as a component of the social information-processing model (e.g., Coie, 1990; Dodge & Feldman, 1990). These external influences may be especially strong for adolescents with *beliefs that fighting is sometimes necessary* as compared to adolescents with *beliefs against aggression*.

Although adolescents with *beliefs that fighting is sometimes necessary* displayed some social information-processing biases that were similar to adolescents with *beliefs supporting aggression*, adolescents in this class appeared to be at a lower level of risk and their beliefs and behaviors may be considered normative and adaptive to their environment. Within the current study, there was a high prevalence rate of youth within this class, particularly for African American adolescents who attended an urban middle school. Therefore, these beliefs may be normative for youth exposed to high rates of poverty and violence where the environment may support using aggression in order to maintain standing within the social hierarchy and to prevent becoming a victim of violence. Our findings are consistent with research that has found that some aggression can be adaptive, especially within competitive social environments where successful aggression may result in multiple positive outcomes (Coie & Dodge, 1998; Little, Rodkin, & Hawley, 2007). For example, previous research has shown that aggression can be adaptive within boys' dominance hierarchies (Coie, Dodge, Terry, & Wright, 1991; Pettit, Bakshi, Dodge, & Coie, 1990) and that adolescents may use aggression to cope with violence based upon parental suggestions (Kliewer et al., 2006). In fact, some research has suggested that moderate levels of aggression, which are consistent with the class of adolescents with *beliefs that fighting is sometimes necessary*, may be most adaptive within many environments (Ferguson & Beaver, 2009).

Explanations for Unsupported Hypotheses. Five of the fifteen hypotheses were not supported. Contrary to the hypotheses, adolescents in the three primary classes did not always differ in their reported social information-processing cognitions or in the response-decision process. These findings are inconsistent with previous literature on differences between adolescent-onset and life-course persistent aggression. Previous research, however, has not

directly examined differences in these social information-processing constructs among distinct patterns of beliefs about aggression.

For social information-processing cognitions, there were no significant differences in the generation of hostile and benign intent attributions among classes. The failure to find such differences is inconsistent with the majority of previous research. For instance, previous research has shown that life-course persistent aggressors, who may be similar to youth with *beliefs supporting fighting*, concentrate on hostile or aversive social cues (Crick & Dodge, 1996; Pettit et al., 1988). However, one study examining differences in hostile attribution bias did not find differences among four classes of youth (i.e., proactively aggressive, reactively aggressive, pervasively aggressive, and nonaggressive; Dodge et al., 1997). Given that the reactively aggressive class is similar to the *beliefs supporting aggression* class and the nonaggressive class is similar to the *beliefs against fighting* class, the failure to find differences in the current study is consistent with the findings by Dodge and colleagues. In addition, exploratory analyses did not find differences in beliefs about right, wrong, and fairness between adolescents with *beliefs supporting fighting* and *beliefs against fighting*. Previous research has suggested that aggressive and nonaggressive children are concerned with fairness by others and may share a common moral code that it is not acceptable for someone to do something bad on purpose (Coie & Dodge, 1998; Crick & Dodge, 1994). Additionally, research has suggested that youths who engage in reactive aggression may be acting out of response to anger and heightened physiological arousal rather than due to a rejection of moral knowledge or values about fairness (Hubbard et al., 2002; Sutton, Smith, & Swettenham, 1999). Those youth engaging in reactive aggression may be similar to adolescents from both classes in the current study who supported the use of aggression

and primarily endorsed beliefs supporting the use of aggression in reaction to provocation by others (e.g., teasing) or to prevent future provocation/conflict.

Despite differences in the generation of revenge goals, no differences were found among the *beliefs against fighting, beliefs that fighting is sometimes necessary,* and *beliefs supporting fighting* classes on the generation of instrumental-control goals (i.e., getting what the youth desires in that situation). Researchers have suggested that aggressive children are more concerned with instrumental goals, such as controlling an object or situation, than with relational goals, as compared with non-aggressive children (Arsenio & Lemerise, 2004; Crick & Dodge, 1996). The failure to find differences in the generation of instrumental-control goals may be related to the multidimensional nature of this construct. Getting what one desires in a situation can be reflective of both aggressive and controlling goals (e.g., I want to play the game I want to play) and more prosocial goals (e.g., the other person stops teasing you). Therefore, adolescents from varying classes may have generated instrumental-control goals for different underlying motivations.

Furthermore, in examining the generation of responses and consequences, no differences were found between adolescents with *beliefs supporting aggression, beliefs against aggression,* and *beliefs that fighting is sometimes necessary* in the number of responses generated and generation of prosocial responses, fighting or escalation consequences for physical aggression, and of consequences for an effective nonviolent response. Additionally, adolescents with *beliefs that fighting is sometimes necessary* were not significantly different from adolescents with *beliefs supporting aggression* in the generation of physically aggressive responses and were not significantly different from adolescents with *beliefs against fighting* in the generation of fighting/escalation consequences for a physically aggressive response. Previous research,

however, has linked aggression with maladaptive biases in the generation and evaluation of responses (Crick & Dodge, 1996; Dodge et al., 1997).

Differences between the current study and previous research may partially explain these discrepancies in findings. The current study used two innovative measures that provided participants with multiple opportunities to respond within each step of the social information-processing model. Therefore, for many variables, adolescents generated multiple types of goals, responses, and consequences. This was especially found in relation to variables that examined the generation and evaluation of prosocial responses where the majority of participants generated at least one prosocial response or positively evaluated prosocial responses. Additionally, the majority of adolescents identified at least one fighting consequence for physical aggression. The lack of variability in generation of these constructs therefore makes it difficult to find differences among adolescents with varying patterns of beliefs about fighting. These findings suggest that some variables within the social information-processing model may be better able to distinguish differences among patterns of beliefs about aggression. For instance, the generation of positive consequences for aggressive behavior may be more reflective of beliefs about aggression and aggressive behavior than understanding that there are negative consequences for physical aggression as well.

An additional difference between the current study and previous research was the failure of the majority of adolescents within this study to endorse beliefs supporting the use of instrumental aggression. For example, although adolescents in the *beliefs supporting fighting* class endorsed more beliefs in support of fighting than the other classes, these beliefs were more reflective of reactive aggression as compared to instrumental aggression. Much of the previous literature has examined social information-processing biases in relation to beliefs about

aggression that include beliefs supporting the use of instrumental aggression (e.g., Smithmyer, Hubbard, & Simons, 2000). Some differences between this study and previous research may therefore be related to patterns of beliefs supporting fighting reflecting beliefs of adolescents who supported the use of reactive aggression and not instrumental aggression. Research has suggested that there are significant differences in social information-processing biases between adolescents that engage in reactive aggression (similar to *beliefs supporting aggression)* as compared to instrumental aggression (these beliefs were not frequently endorsed in the current study). For instance, in previous research instrumental aggression rather than reactive aggression has been associated with maladaptive biases in the response-generation and response-evaluation steps of the social information-processing model. For example, instrumental aggression rather than reactive aggression has been associated with positive outcome evaluation of aggression, such as the expectation that the aggressor will feel happy after victimizing others (Crick & Dodge, 1996; Dodge et al., 1997; Smithmyer et al., 2000).

The specific situations chosen for the PSI may have also impacted the failure to find some hypothesized differences in the generation of aggressive cognitions and responses between adolescents with *beliefs that fighting is sometimes necessary* and those with *beliefs supporting fighting*. One of the situations used for the PSI assessed participants' problem solving based on a situation where a friend is sharing a secret with others. This specific situation may have been especially difficult for adolescents in this study given that three-quarters of adolescents in both of these classes agreed that fighting is appropriate to stop a rumor. Therefore, it is not surprising that adolescents in both classes may have been more likely to respond with aggressive social information-processing biases given the specific type of provocation for this situation.

Finally, more consistent differences were found among classes of adolescents with varying patterns of beliefs about fighting for cognitions that reflect the internal database as opposed to steps of the response-decision process. This finding is consistent with research that has demonstrated the importance of cognitive heuristics. Research has shown that individuals often rely on heuristics or schemata when confronted with the overwhelming amount of stimulus information that is present in many difficult situations in order to simply the cognitive tasks involve in processing the situation and environment (Einhorn & Hogarth, 1981; Winfrey & Goldfried, 1986).

Demographic Differences

The current study also examined whether gender, school setting, race/ethnicity, and family structure differed for youth with varying patterns of beliefs about fighting. Examining gender differences in patterns of beliefs about fighting was important given that previous research has found differences in the type of aggressive behaviors in which boys and girls engage and differential environmental support for aggression depending upon gender (Egan & Perry, 1998; Hodges, Malone, & Perry, 1997; Olweus, 1978). For example, research has suggested that boys have higher rates of physical aggression than girls during adolescence. (Bartlett, 2003). Examining differences in race/ethnicity and school setting were critical given that the ATSS and PSI interviews were developed using a sample of urban African American participants.

Consistent with the previous study by Farrell and colleagues (2012), whether a student attended an urban school or a semi-rural school in a nearby county did not uniquely impact their pattern of beliefs about fighting when controlling for the student's race/ethnicity. However, patterns of beliefs about fighting differed by race/ethnicity when controlling for all other

demographic variables. African American students were more likely than Caucasian students and those of other ethnicities to hold a pattern of *beliefs that fighting is sometimes necessary* and more likely than Caucasian students to hold patterns of *beliefs supporting fighting* as compared to patterns of *beliefs against fighting*. This finding is expected given that the measure used to develop the latent classes in the present study was initially developed by Farrell and colleagues based on previous qualitative studies with a predominately African American sample of urban youth (2008, 2010). Specifically, the measure incorporated items reflecting beliefs that fighting is often unavoidable, such as adolescents being considered weak or subject to ongoing victimization if they did not stand up for themselves in specific situations, based on the responses of the predominately African American sample. It is therefore not surprising that similar adolescents in the current study were more likely to endorse these beliefs as well. Additionally, consistent with the racial differences found in this study, research examining differences across race/ethnicities in the likelihood of engaging in physical aggression within a national sample of high school adolescents found that rates of physical aggression were highest among racial/ethnic minorities (i.e., Blacks > Hispanic > Others > Whites; Mercado-Crespo & Mbah, 2013).

In contrast to the previous study by Farrell and colleagues (2012), the current study found that boys and girls differed in their patterns of beliefs about fighting, such that girls were more likely than boys to hold *beliefs against fighting* compared to other patterns of beliefs. This may be attributed to the older age of participants in the current study. Previous research has suggested that as youths get older, girls are less likely to be physically aggressive than boys (Xie, Farmer, & Cairns, 2003). This increasing gender gap may occur for multiple reasons. For instance, as girls enter adolescence their focus may shift towards their physical appearance and fashion as they become more interested in romantic relationships (Maccoby, 2004). This enhanced interest

in appearance conflicts with engaging in physical fights. In addition, research has found that between the fourth and seventh grades, there is a drop off in physical aggression for girls primarily in their conflicts with boys, and their overall conflict with other girls remains consistently low (Cairns, Cairns, Neckerman, Ferguson, & Gariepy, 1989). Another explanation for the gender differences found in this study may be the impact of social desirability. Research has suggested that boys receive greater reinforcement for the use of physical aggression than do girls, such as through the depiction of these behaviors by male characters in television (e.g., Paik & Comstock, 1994). Girls may therefore be less likely to report beliefs supporting the use of aggression than boys. Lastly, these gender differences may be explained by the type of beliefs about aggression being examined. The current study focused on the construct of beliefs about the use of physical aggression, which research has shown is more common in adolescent boys (Bartlett, 2003). Examining gender differences in patterns of beliefs about the use of relational aggression may not find gender differences as research has found that boys and girls exhibit comparable rates of relational aggression during adolescence (Prinstein et al., 2001; Skara et al., 2008).

Exploratory analyses were also conducted to examine gender differences in social information-processing skills. Although girls and boys primarily did not differ in their social information-processing cognitions and the response-decision process, there were several differences that were consistent with the gender differences found for class membership. For instance, consistent with girls being more likely to be in the *beliefs against fighting* class, they were also more likely to report behavioral intentions for nonviolent behavior, beliefs against aggression, increased effectiveness for effective nonviolent responses, and beliefs about right, wrong, and fairness. Similarly, boys were more likely to report behavioral intentions for physical

aggression, which was consistent with their increased likelihood of being in *beliefs supporting fighting* class. Lastly, girls were more likely to report hostile intent attributions and benign intent attributions. These findings are consistent with previous research which found that in general girls were more likely to report external attributions than boys (Bettencourt, 2010).

Study Limitations and Directions for Future Research

There were several limitations of this study that must be acknowledged. First, there was limited variability in scores for many of the PSI variables and specific items of beliefs about fighting in this sample. For example, only four respondents did not generate a negative consequence for a physically aggressive response and only five did not generate a positive consequence for an effective nonviolent response. Although allowing participants to generate an unlimited number of responses to open-ended questions was a strength of these measures, it may have resulted in limited variability. In addition, the majority of respondents did not endorse beliefs supporting instrumental aggression, regardless of their other beliefs about fighting. Given that some differences in social information-processing skills were found between youth with varying patterns of beliefs about fighting, future research should use a larger and more diverse sample that includes youth with beliefs supporting the use of instrumental aggression to examine (a) if the items allow for sufficient variability in adolescent respondents and (b) if additional differences in social information-processing skills are found when there is more variability in students' responses.

The PSI was designed to address the limitations of previous studies where the coding structure used for measures may have not reflected the richness of students' responses (e.g., Crick & Dodge, 1994). For instance, existing measures have frequently imposed a coding structure that reflects the overall theme of students' answers (e.g., generation of an aggressive

response) rather than specific codes that reflect diversity of responses generated (e.g., generation of physical aggressive and relationally aggressive responses; Marsh et al., 1980). Although the PSI included novel components of social information-processing that are not typically assessed, the coding structure did not fully incorporate all categories of students' responses due to the sample size and low base rate of some categories. For example, although some adolescents reported responses that were coded in specific categories (e.g., staying out of trouble or reducing their tension), they were combined into more general categories (e.g., prosocial responses and passive responses) or not used for the current study because of their low base rates. As a result, it is important for future research to assess the importance of examining each individual construct versus the overall theme. For instance, researchers should examine if is it statistically meaningful to identify whether a student engaged in responses that maintained relationships, avoided conflict, sought more information, or stayed out of trouble or if it is only crucial to understand whether a student engaged in a prosocial response.

An additional challenge in the development of the ATSS and PSI interviews was to identify problem situations that would be considered difficult and relevant for all students within the study. Previous studies have used hypothetical vignettes in interviews and self-report measures that may not represent problems that the participants consider meaningful and difficult to handle (e.g., Crick & Ladd, 1990; Dodge et al., 1990; Zelli et al., 1999). Both the ATSS and PSI interviews were developed to address limitations of previous measures by being meaningful for an urban population (Farrell et al., 2006). It is therefore probable that the situations used for these interviews were more meaningful, frequent, and difficult for the students attending the urban schools than students attending the semi-rural school. Keeping these sample differences in mind, it is important to interpret the current findings with caution as it is not clear whether the

relevance of a situation is related to the validity of social information-processing measures. It is possible that the relevance of the situations was not related to adolescents' abilities to place themselves in the situation and accurately describe how they would process the situation. For example, despite more students reporting having experienced the close friend situation as compared with the peer situation, more responses were identified for the peer situation and the number of goals was the same for both situations. Future research should examine the impact of situation difficulty and relevance on the validity of measures of social information-processing cognitions and skills to determine whether using meaningful situations is a key component of assessing these skills.

The sample was also limited to two urban schools and one semi-rural school from a nearby county, which may make it difficult to make comparisons or interpret differences between the urban and semi-rural samples. However, a strength of the study is the diverse sample, which increases the generalizability of the findings. Generalizability was determined to be more important than making comparisons between settings given that differences in social information-processing patterns have not been examined extensively in the literature among adolescents with varying patterns of beliefs about aggression. Research has found that changes in social information-processing skills are strongly related to conduct problems and aggression in both urban (Colder et al., 2008) and rural (Terizon, 2007) environments. It is important therefore for future research to examine whether the current study's findings can be replicated in different environments, such as rural and suburban communities and with more ethnically diverse samples.

Another limiting factor was that the measures of beliefs about fighting and social information-processing were based entirely on self-report. Kazdin (2003) argued that using self-

report measures can blur results because the data are not always reliable and can be subject to social desirability effects. In addition, some researchers have argued that self-reports of behavior, particularly aggression, are more susceptible to bias than other reports (e.g., Perry et al., 1988). The social desirability effect could potentially be more pronounced because variables in the present study (e.g., beliefs about aggression, brainstorming responses that may include aggressive behavior) were specially addressed as a part of the intervention condition. However, the potential inaccuracy of measurement by other reporters could be a pitfall of relying on reports by parents, peers, or teachers, especially given that the constructs being assessed in this study reflect the beliefs and thought process of the participants. There are also disadvantages to using behavioral observation, including (a) it can be difficult to determine the cause of adolescents' behavior as outside variables cannot be controlled; (b) adolescents may behavior differently if they are aware of the observation; and (c) social desirability can still impact how youth act when being observed (Jackson, 2005). Given these concerns about biased reporting, it is important to interpret this study's findings with caution as they represent a single perspective. Future research could include behavioral observations or virtual simulations of difficult situations to gain further understanding of how youth use social information-processing skills. For example, one study with a sample of children between the ages of 10 and 13 used a video racing game to assess hostile attributions in real-time (Yaros, 2013).

In addition to addressing this study's limitations, additional research is recommended to replicate this study and extend its findings. First, it is important for future research to examine whether the patterns of beliefs about fighting differ for other forms of aggression (e.g., verbal and relational) and whether these relations vary by gender. Previous research has suggested that physical and relational aggression represent distinct factors (Bartlett, 2003; Crick & Grotpeter,

1995) and that beliefs supporting aggression are positively correlated with rates of engaging in relational aggression (Werner & Hill, 2010). However, beliefs about distinct forms of aggression may vary in their relations to social information-processing patterns. For example, previous research has found that the type and effectiveness of responses generated (Mikami, Lee, Hinshaw, & Mullin, 2008) and the positive evaluation of aggressive responses (Crain, Finch, & Foster, 2006; Helmsen & Petermann, 2010; Mikami et al., 2008) have not been related to increased rates of relational aggression. Previous research has also indicated that the relation between social information-processing patterns and different forms of aggression may vary by gender (e.g., Leff et al., 2010). Therefore, future research is needed to determine whether there is a relation between social information-processing skills and beliefs about different forms of aggression for both boys and girls.

Future research is also needed to replicate the current study and examine whether patterns of beliefs about fighting and their relation to social information-processing patterns are stable or change over time. Future studies should explore whether youth who exhibit one pattern of beliefs about fighting tend to maintain that pattern of beliefs or if their beliefs change as they age and are exposed to additional reinforcement for or against the use of aggression. Latent transition analysis is an example of one longitudinal analytic tool that would allow researchers to examine changes in latent class of beliefs about fighting over time (Nylund, 2007). Further, longitudinal studies would be beneficial in exploring whether social information-processing abilities and patterns of beliefs about fighting have a causal relationship, whether reciprocal relations exist, or whether a third variable is impacting both variables.

Additionally, future research should examine whether the patterns of beliefs about fighting found in this study represent different patterns of risk for and trajectories of aggressive

behavior (e.g., life-course persistent and adolescent-onset aggression; Moffitt, 1993). Research examining differences in these trajectories of aggression have found distinct risk profiles for each trajectory of aggression and therefore it is important to examine whether these classes reflect these patterns for risk and trajectory of behavior over time. For example, future research should examine whether these classes of adolescents differ in risk factors that have been found to be related to distinct trajectories of aggressive behavior including (a) individual risk factors, such as perinatal development, temperament, emotional control, callous unemotional traits, and neurological impairments (Brennan, Hall, Bor, Najman, & Williams, 2003; Crick & Dodge, 1996; Hubbard et al., 2002; Marsee & Frick, 2010), and (b) environmental risk factors, such as social opportunities, parenting, and friendships with deviant peers (Moffitt & Caspi, 2001; Pettit et al., 1988). Future research should also examine whether patterns of beliefs about fighting are related to adjustment and cessation of aggression over time. Research has previously suggested that adolescents with different trajectories of aggressive or antisocial behavior vary in their adjustment and long term cessation of aggressive behaviors (e.g., Brennan et al., 2003; Dodge et al., 1997). For example, research has found that during adolescence, adolescent-onset aggressors may report high levels of internalizing symptoms and life stress (Aguilar, Sroufe, Egeland, & Carson, 2000), but early-onset aggressors display greater difficulties with psychosocial adjustment over time (Marsee & Frick, 2010).

Study Implications

This study has important implications for prevention approaches aimed at reducing youth involvement in aggression. Two classes of youth at risk for aggressive behaviors were identified based upon their pattern of beliefs about fighting and were consistent with classes identified with the same adolescents at a previous time point (Farrell et al., 2012). The pattern of *beliefs*

supporting fighting was consistent with life-course persistent aggressors (Moffitt, 1993). In the study by Farrell and colleagues (2012), these adolescents displayed internal risk factors for aggression including poor emotion regulation and low empathy. In the current study, they consistently demonstrated more aggressive cognitions supporting the use of aggression and maladaptive social information-processing biases in their response-decision process, such as increased generation of revenge goals, use of physical aggression as their first response in a situation, use of aggressive responses, and generation of positive consequences for physical aggression. Prevention programs that target high-risk youths and focus on changing social information-processing patterns and addressing individual-level risk factors appear to be well designed to address the needs of adolescents with *beliefs supporting aggression*.

The pattern of *beliefs that fighting is sometimes necessary* was consistent with adolescent-onset aggressors. In the study by Farrell and colleagues (2012), these youths displayed less internal risk factors, such as better emotional regulation and increased empathy, but increased external supports for aggression compared to adolescents with *beliefs supporting aggression*. In the current study, they frequently demonstrated social information-processing biases that were not as maladaptive as those with *beliefs supporting aggression* (e.g., less likely to report behavioral intentions for aggression, revenge goals, and an aggressive first response) and frequently were similar to adolescents that held general *beliefs against aggression* (e.g., cognitions that it is ok to fight in response to non-physical aggression and perceived effectiveness of physical aggression and effective nonviolent responses). Adolescents with *beliefs that fighting is sometimes necessary* demonstrated social information-processing biases similar to adolescents with *beliefs supporting fighting* regarding the use of physical aggression for specific types of provocation and in the importance of maintaining their reputation with

others. These results reveal that adolescents with *beliefs that fighting is sometimes necessary* may become aggressive due to reinforcement in their environment rather than an overall pattern of maladaptive social information-processing deficits.

These findings suggest that prevention programs that aim to change behavior by changing maladaptive social information-processing patterns and individual risk factors may not be effective for adolescents with *beliefs that fighting is sometimes necessary*. These adolescents may already have good problem solving skills that are similar to their nonaggressive peers and be engaging in aggressive behavior that is adaptive to their environment, such as to prevent being a victim of aggression and to maintain their social standing, and is reinforced by both parents and peers (e.g., Farrell et al., 2012; Kliewer et al., 2006). Prevention approaches designed for these adolescents may therefore need to focus on changing external supports for aggression (e.g., creating a positive classroom culture) in order to successfully reduce aggression. Individuals within this class may be more likely to benefit from universal intervention programs that attempt to alter the environment rather than individual risk factors. The Olweus' Bullying Prevention Program (Olweus & Limber, 2007a, 2007b) is an example of one program that has been used successfully to change school climate by addressing individual (e.g., students' perceptions of school norms supporting aggression), classroom (e.g., enforcement of rules), and school (e.g., school-wide system of supervision) level factors.

Although researchers have argued that prevention programs should be developed based upon the social information-processing framework (Crick & Dodge, 1994; Huesmann, 1988), research has suggested that school-based violence prevention programs that target social information-processing skills have modest to moderate effectiveness and effects that are not significant for all youth (Wilson et al., 2003). For example, multiple school-based violence

prevention programs have found that outcomes varied by baseline levels of aggression where programs resulted in decreases in aggression for youth with high baseline rates of aggression , but increases in aggression for youth with low to moderate baseline rates of aggression (Farrell, Henry, & Bettencourt, 2013; Wilson et al., 2003). Therefore, current interventions may only be successful in changing cognitions and behaviors of chronically aggressive youths with *beliefs supporting aggression* and may not be targeting external variables that are more influential for youths with *beliefs that fighting is sometimes necessary*.

The findings of the current study suggest that interventions directed at reducing aggression may need to be adapted depending upon the belief patterns of individuals within the intervention population and that programs only addressing social information-processing skills and individual level risk factors may only impact a subset of aggressive youth. It is recommended that prevention programs incorporate both a universal and targeted component. This is consistent with recommendations that program combinations will have additive effects in improving effectiveness and consistent with the findings of the current study (Domitrovich et al., 2010). Multi-component programs typically include intervention components that target both change in social information-processing cognitions and reinforcement for aggression within the environment. These programs are more likely to be successful in reaching both adolescents who have general *beliefs supporting aggression* and adolescents who have *beliefs that fighting is sometimes necessary.*

Currently, there are several multi-component programs that follow these recommendations and have demonstrated effectiveness in reducing aggressive behavior. FAST Track is a large-multi-component program that uses a socio-ecological approach to target multiple influences on behavior and has been noted as an exemplar program based on its

comprehensive approach that includes social skills and social-cognitive skills training, tutoring, classroom teacher consultation, and family support (Tremblay, LeMarquand, & Vitaro, 1999). PATHS to PAX is another program that targets both individual social and emotional skills through the PATHS Curriculum and classroom climate and teaching style through the Good Behavior Game (Embry, Staatemeir, Richardson, Lauger, & Mitich, 2003; Kusche & Greenberg, 1994). Research on the efficacy of the PATHS to PAX program has demonstrated both immediate reductions in disruptive, aggressive, and inattentive behaviors (e.g., Tingstrom, Sterling-Turner, & Wilczynski, 2006) and long-term benefits into adulthood, including decreased violence and substance use (e.g., Petras et al., 2008). Additionally, Positive Behavioral Interventions and Supports (PBIS) is an operational framework that focuses on incorporating evidence-based strategies at three tiers of prevention including (a) tertiary or individualized prevention for high-risk students; (b) secondary prevention for groups of students who display at-risk behaviors; and (c) primary prevention that is designed to create school- or classroom-wide change (OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports, 2013). Schools using the PBIS framework have shown improvements including reductions of out-of-school suspensions and discipline referrals (OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports, 2013).

The findings of this study also have important implications for the implementation of clinical interventions for youths receiving mental health treatment due to aggressive behavior. Many individual and group treatments incorporate the development of problem solving skills, such as Coping Power (Lochman & Wells, 1996) and Defiant Child (Barkley, 1997). However, despite the frequent use of problem solving skills training within clinical treatments, problem solving skills training is not consistently effective in reducing aggressive or disruptive behavior.

For example, the Society of Clinical Child and Adolescent Psychology, Division 53 of the American Psychological Association, identifies problem solving skills training as probably efficacious rather than well-established in the treatment of disruptive disorders (Eyberg, Nelson, & Boggs, 2008). Based on the findings of this study, a child's specific patterns of beliefs about fighting should be considered when introducing problem solving skills training as a component of mental health treatment. Youths with *beliefs supporting aggression* may be more likely to be seen for individual therapy and benefit from traditional problem solving skills training. However, youths with *beliefs that fighting is necessary within specific contexts* may instead benefit from evaluating barriers to the implementation of effective nonviolent strategies and support from aggression within their environment in order to find nonviolent strategies that prevent future conflict and do not harm their image and reputation. As aggression may be adaptive for adolescents within this class and reinforced by individuals within their environment, approaches that address their environment (e.g., family system, parenting approach, and class/school climate) will be more beneficial in reducing aggressive behavior than individual therapy.

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Appendix A

Articulated Thoughts in Simulated Situations Scripts

A. Description. The Articulated Thoughts in Simulated Situations (ATSS) is a presentation of four situations that were audio-taped and broken into five to nine 15-second segments. Situations included the following: (a) a neutral audio track of peer interaction; (b) two physically provocative situations of peer victimization; and (c) a verbally provocation situation of peer victimization.

B. Instructions. After each segment, participants are promoted to engage in a monologue of their thoughts, feelings, and reactions to the segment for 30 seconds. Interviewers used the following script to instruct participants in the appropriate way to respond to the situations:

> "We are trying to learn more about the sorts of things that students your age think about when they are faced with difficult situations, such as problems with their friends or at school. The way we think about things is a lot like talking to ourselves, although we don't usually talk out loud. For this project we want you to talk out loud about the thoughts that are running through your mind as you listen to some situations on a laptop.
>
> We are going to ask you to listen to tapes of three situations that are examples of situations that students your age have told us have happened to them before. We want you to imagine that you are actually in the situations being described. While you're listening to each situation pay attention to what is running through your mind. We've divided each situation into five to nine parts. At the end of each part, you will hear a beep. When you hear the beep we want you to say the thoughts and feelings you were having while you listened to that part of the tape. Try to avoid just talking back to the people on the tape, and instead try to say as much as you can about what you were thinking or feeling while you were imagining yourself in the situation. The recorder in front of you will record what you say. After 30 seconds you'll hear another beep to signal that the story is about to continue. That will be your signal to stop talking and to listen to the next part of the tape.
>
> There are no right or wrong answers, so please say whatever comes to your mind. Please be straight with us about what you're thinking in these situations. We really want to understand what students your age think about when they are in situations like these. The more you say, the better. Remember, your name will not be connected to the taping that we do here, so your thoughts will be kept private. Imagine as clearly as you can that it is really you in each situation that you are listening to.

After answering any questions you may have, we will begin with a practice tape to help you get used to talking out loud about your thoughts. Then, you'll have a chance to ask questions about the procedure in case there is anything that is still confusing.

Remember, at the end of each part, say out loud whatever you are thinking and feeling, as honestly and as completely as you can. Do you have any questions?"

C. Situation Scripts. Youth listened to the following situations.

Initial Neutral Script: **Situation #42 Neutral: A friend was careless with something you loaned them and it got damaged.**

(1)

NARRATOR: "Settle back in your chair and close your eyes. Imagine that it is Friday afternoon and you just got out of your last class of the school day. Everyone is rushing to their lockers to get their books and go off for the weekend. You walk over to your locker to get your books together and you take a moment to look at your new MP3 player that you got as a gift. As you start to put your MP3 player in your bag, one of your good friends runs up to you and asks you if they can borrow your new MP3 player for the weekend. The voice you will now hear is your good friend."

GOOD FRIEND: "Hey, you know that MP3 player you got? Think I could I borrow it for the bus ride home today? I promise I'll bring it back to you on Monday."

----------<BEEP>----------

30 SECONDS

----------<BEEP>----------

(2)

NARRATOR: You don't really want to let your friend borrow your new MP3 player, so you tell your friend that you are not sure. Your good friend starts lookin really upset and says:

GOOD FRIEND: "Look, some kid keeps picking on me and teasing me on my bus ride home. If I can listen to your MP3 player on the way home from school today, I can just listen to music and ignore them. Come on. Remember all the times I used to let you borrow my MP3 Player?

----------<BEEP>----------

30 SECONDS

----------<BEEP>----------

(3)

NARRATOR: You look at your friend like you don't really want them to borrow your new MP3 player.

GOOD FRIEND: I mean, you are one of my best friends. You know I'll bring it back to you on Monday. Trust me. I'll bring it back to you."

----------<BEEP>----------

30 SECONDS

----------<BEEP>---------- (4)

NARRATOR: You start to feel bad for them, and decide to let your friend borrow your new MP3 player. You tell them to bring it back to you on Monday morning and your friend runs off to catch their bus.

GOOD FRIEND: "Thanks! I owe you one. I promise I'll bring it back to you on Monday."

----------<BEEP>----------

30 SECONDS

----------<BEEP>----------

(5)

NARRATOR: "On Monday morning, you look everywhere for your friend and figure out that they are trying avoiding you. You finally find your good friend and ask for your MP3 player back and they say:

GOOD FRIEND: “Heeey. Ummm, I just realized that I left your MP3 player at home today. I’m really sorry. I promise I will bring it in tomorrow”

----------<BEEP>----------

30 SECONDS

----------<BEEP>----------

(6)

NARRATOR: "The next day, you have trouble finding your friend again. You see your friend at your locker and confront them about your MP3 Player.”

GOOD FRIEND: Okay, I’m going to be straight with you. I accidentally dropped your MP3 Player this weekend. It still works fine, but the glass on the front of the MP3 player is cracked. I knew you would be mad, so I didn’t want to tell you.

----------<BEEP>----------

30 SECONDS

----------<BEEP>----------

The remaining situations were presented in a randomized order for each participant.

Situation #22 Active Participant Female Version: Other kids encouraged you to start a fight.

NARRATOR: Imagine that you and two of your friends are standing by your lockers in the hallway before class starts. Lots of kids are around, but no teachers or other adults. You and your friends are talking about a test that’s coming up next period, when you see some big kid coming toward your group. You don’t get along with one of them, and everyone says she will fight anyone.

[Background noise of other kids talking, locker doors slamming]

(1)

FRIEND 1: Did you study for the quiz?

FRIEND 2: Yeah, I guess. I’m still not sure I get that one part we went over yesterday, but hopefully I’ll get by.

FRIEND 1: Ooohh lord, look who’s coming. I thought she was suspended.

FRIEND 2: Guess she’s back. I hate those that group of girls, they think they hard.

----------<BEEP>----------

30 SECONDS

----------<BEEP>----------

(2)

FRIEND 1: Hey, didn’t you say that Janay was coming off last week?

FRIEND 2: I remember that, she played you in front of everyone.

FRIEND 1: [laughing] Man, that was so embarrassing.

----------<BEEP>----------

30 SECONDS

----------<BEEP>----------
(3)
FRIEND 2: Yeah, I thought you was gonna hit her.
FRIEND 1: Man, I'm surprised you let her treat you that way.
FRIEND 2: Now she thinks she can treat you however she wants.
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(4)
FRIEND 1: I know you are not gonna let her grit on your like that.
FRIEND 2: I ain't see it, what happened?
FRIEND 1: Janay was laughing with her ugly friends, and then she looked over here like she was something special.
FRIEND 2: Man, she is really asking for it.
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(5)
NARRATOR: The bell rings and Janay and her group of friends start to walk closer to you. They're yelling and laughing loudly. Janay gets real close as she walks by, and brushes up against you.
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(6)
FRIEND 1: Oh no she did not just bump you!
FRIEND 2: She straight up did that on purpose, she can walk just fine, she ain't got to touch you.
FRIEND 1: You need to go fight her. She been asking for it for weeks.
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(7)
JANAY: Did you say somethin? I thought I heard somebody talking, but I know it can't be you, 'cuz you're too much of a punk.
FRIEND 1: No one's scared of you.
JANAY: Oh yeah? Then how come everybody's talking about what a punk your friend is?
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(8)
FRIEND 2: That's it. You need to get it over with.
FRIEND 1: You can't just stand there and take that.
FRIEND 2: Everyone will think you're a punk if you walk away. Hit her man! Hit her!
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------

(9)
FRIEND 1: We got your back. Just go up there and rock her
FRIEND 2: Yeah, we got you if you need us to.
FRIEND 1: But if you don't do this now, she will just be on you forever, and other people will try to fight you too.
FRIEND 2: Yeah, you've got no other choice, you've got to fight her now.

Situation #22 Active Participant Male Version: Other kids encouraged you to start a fight.
NARRATOR: Imagine that you and two of your friends are standing by your lockers in the hallway before class starts. Lots of kids are around, but no teachers or other adults. You and your friends are talking about a test that's coming up next period, when you see some big kids coming toward your group. You don't get along with one of them, and everyone says he will fight anyone.
[Background noise of other kids talking, locker doors slamming]
(1)
FRIEND 1: Did you study for the quiz?
FRIEND 2: Yeah, I guess. I'm still not sure I get that one part we went over yesterday, but hopefully I'll get by.
FRIEND 1: Ooohh lord, look who's coming. I thought he was suspended.
FRIEND 2: Guess he's back. I hate them, they always thinking they go so hard.
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(2)
FRIEND 1: Hey, didn't you say that Marcus was coming off last week?
FRIEND 2: I remember that, he completely played you in front of everyone.
FRIEND 1: [laughing] Man, that was hilarious, but that was messed up.
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(3)
FRIEND 2: Yeah, I thought you was gonna hit him.
FRIEND 1: Man, I'm surprised you let him treat you that way.
FRIEND 2: Now he thinks he can treat you however he wants.
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(4)
FRIEND 1: I know you not gonna let him grit on you like that.
FRIEND 2: I ain't see it, what happened?
FRIEND 1: Marcus was laughing with his clique, and then he looked over here like he was all that.
FRIEND 2: Man, he's asking for it.
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------

(5)
NARRATOR: The bell rings and Marcus and his group of friends start to walk closer to you. They're yelling and laughing loudly. Marcus gets real close as he walks by, and brushes up against you.

----------<BEEP>----------

30 SECONDS

----------<BEEP>----------

(6)
FRIEND 1: Did he just bump you?
FRIEND 2: He straight up did that on purpose, he can walk fine, he ain't got to be touching you.
FRIEND 1:You need to go fight him. He been asking for it for weeks.

----------<BEEP>----------

30 SECONDS

----------<BEEP>----------

(7)
MARCUS: Did you say something? I thought I heard somebody talking, but I know it can't be you, 'cuz you're too much of a punk.
FRIEND 1: No one's scared of you.
MARCUS: Oh yeah? Then how come everybody's talking about what a punk your friend is?

----------<BEEP>----------

30 SECONDS

----------<BEEP>----------

(8)
FRIEND 2: That's it. You need to get it over with.
FRIEND 1: You can't just stand there and take that.
FRIEND 2: Everyone will think you're a punk if you walk away. Hit him man!

----------<BEEP>----------

30 SECONDS

----------<BEEP>----------

(9)
FRIEND 1: We got your back. Just go up there and rock him.
FRIEND 2: Yeah, we got you if you need us.
FRIEND 1: But if you don't do this now, he will just be on you forever, and other people will try to fight you too.
FRIEND 2: Yeah, you've got no other choice, you've got to fight him now.

Situation #52 Witness Female Version: Another kid at school said something to you that was disrespectful about your family.

(1)
NARRATOR: Imagine you are hanging out in the cafeteria with a group of your peers. Everyone in the group is joking around with each other about clothes and the way people act and then all of a sudden one of the kids in the group starts teasing another kid about her family. The voices you will hear next are of the other students.
STUDENT 1: [laughter] I heard your momma's so fat, she can't fit in through the doorways in your house without turning sideways.
STUDENT 2: Stop trippin, yo! Why you talkin' bout my momma like that! Mind your business!

----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(2)
STUDENT 1: Oh, whatever, I heard she's so fat she eats up all the food in your house, and that's why you gotta eat food at school.
STUDENT 2: You know that ain't true! My momma ain't fat, she beautiful. Why you talking that mess? I bet she looks better than your mom anyway.
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(3)
STUDENT 1: Whatever, I heard she so fat and ugly that your dad left cause he couldn't stand to look at her…
STUDENT 2: You know that ain't right! You don't know me or my family so why you fussin at me like that!
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(4)
NARRATOR: The student who is being teased starts to try to walk away before things get worse, but the other student keeps harassing her making it hard for her to not say anything back
STUDENT 1: Oh come on, just admit it, you're dad left your momma cause she so ugly he didn't want to be around her.
STUDENT 2: Man, I don't time. I ain't got no time to explain my family to you. You don't know what you sayin!
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(5)
NARRATOR: [laughter] Now other kids are joining in with this one kid who is saying mean things about the other kids mom, and they are saying mean things to the kid about his mom as well.
STUDENT 3: How do you live at home with your mom, it must be hard for you to look at her or be around her in public cause she's so ugly and fat.
STUDENT 4: I bet dinner is hard to get. She probably eat up all the food and leaves nothing for you. That's why you're so skinny!
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(6)
NARRATOR: The kid who is being teased starts getting really angry because the kids won't listen to them. She starts talking back to the other kids and saying things about their families.
STUDENT 2: At least I have parents that care about me. You guys wouldn't be messing with me if you weren't jealous of what I have. All yall whack!

STUDENT 1: Oh yeah, you don't know nothing about me. It doesn't matter anyway, least my momma not fat or ugly.
STUDENT 3: Yeah, don't talk about me. At least my mom and dad are still together.
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(7)
NARRATOR: The kid who is getting teased gets fed up with the other kids.
STUDENT 2: You guys don't even know my mom or the rest of my family. Just drop it! So you better chill out. OKAY!
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(8)
NARRATOR: The kid then storms out of the lunchroom with the other kids yellin after her, calling her a punk and a wimp.

Situation #52 Witness Male Version: Another kid at school said something to you that was disrespectful about your family.
(1)
NARRATOR: Imagine you are hanging out in the cafeteria with a group of your peers. Everyone in the group is joking around with each other about clothes and the way people act, and then all of a sudden one of the kids in the group starts teasing another kid about his family. The voices you will hear next are of the other students.
STUDENT 1 (laughter): I heard your momma's so fat, she can't fit in through the doorways in your house without turning sideways.
STUDENT 2: Stop trippin yo! Why you talkin about my mama like that! Mind your business!
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(2)
STUDENT 1: Oh, whatever, I heard she's so fat she eats up all the food in your house, and that's why you gotta eat food at school.
STUDENT 2: You know that ain't true! My momma ain't fat, she beautiful. Why you talking that mess? I bet she look better than your momma anyway!
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(3)
STUDENT 1: Whatever, I heard she so fat and ugly that your dad left cause he couldn't stand to look at her…She made his eyes bleed!
STUDENT 2: You know that ain't true! You don't know me or my mama so why you feven trippin like that, watch your mouth!
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------

(4)
NARRATOR: The student who is being teased starts to try to walk away before things get worse, but the other student keeps harassing him making it hard for him to not say anything back
STUDENT 1: Oh come on, just admit it, you're dad left your momma cause she so ugly he didn't want to be around her.
STUDENT 2: Man, I don't have time, I ain't got time to explain my family to you.
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(5)
NARRATOR: Now other kids are joining in with this one kid who is saying mean things about the other kids mom, and they are saying mean things to the kid about his mom as well.
STUDENT 3 (laughs): How do you live at home with your mom, it must be hard for you to look at her or be around her in public cause she's so ugly and fat.
STUDENT 4: I bet dinner is hard to get. She probably eat up all the food and leaves nothing for you. That's why you so skinny!
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(6)
NARRATOR: The kid who is being teased starts getting really angry because the kids won't listen to them. He starts talking back to the other kids and saying things about their families.
STUDENT 2: At least I have parents that care about me. You guys wouldn't be messing with me if you weren't jealous of what I have. All you all whack!
STUDENT 1: Oh yeah, you don't know nuthin about me. It doesn't matter anyway, least my momma not fat or ugly.
STUDENT 3: Yeah, don't talk about me. At least my mom and dad are still together.
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(7)
NARRATOR: The kid who is getting teased gets fed up with the other kids.
STUDENT 2: You guys don't even know my momma or the rest of my family. So you better chill out! Ok?
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(8)
NARRATOR: The kid then storms out of the lunchroom with the other kids yellin after him, calling him a punk and a wimp.

Situation #58 Active Participant No Gender Identified: You and another kid got into an argument at school. Other students who were there boosted it up saying, Fight, fight, fight.
NARRATOR: "Settle back into your chair and close your eyes. Imagine that you were walking to your 2nd period class and were accidentally pushed into another student. The student that you

were accidentally pushed into turns around and shoves you into the locker. You tell the student that it was an accident, but they continue to get in your face and yell at you."
(1)
STUDENT: Yo, what's your problem? You think you can just go around and shove whoever you want? Who do you think you are?
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(2)
NARRATOR: The student is in your face and other students in the hallway start to form a circle around you two. You start to walk away, and the student starts to yell even louder.
STUDENT: Oh, what, are you going to try to walk away me now? Can't fight me? You're going to shove me and then run away like a little punk?
Crowd: *Laughter* Ooh, you just got called you out. *Laughter* You jus' got called a punk.
Crowd: You gonna take that? You gonna let yourself get clowned like that?
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(3)
NARRATOR: You try to tell the student to calm down because it was an accident, but the student continues to get in your face and the argument gets heated. You look around and the students around you are yelling at you to fight.
STUDENT: That's right. I called you a punk. Why don't you step up and do somethin' about it?
Crowd: *The crowd gets bigger and starts chanting* Fight! Fight! Fight!
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(4)
NARRATOR: You look around and there is now a huge group of students surrounding you and yelling at you to fight the other student.
Crowd: Fight! Stop standing there and DO something!
STUDENT: Come on, let's do this!
Crowd: Fight! Fight! Fight!
----------<BEEP>----------
30 SECONDS
----------<BEEP>----------
(5)
NARRATOR: Everyone is yelling at you to fight and the other student is getting closer and closer to your face. The student is so close that you can see sweat the rolling down their face and they are yelling so loudly that they are now spitting in your face as they yell in your face.
STUDENT: I guess you don't want to fight me. You were raised by punks, so I guess I should expect this. *The other student pushes you hard in the shoulder*
Crowd: oOo. Those are fightin' words. You bes' not take that. You gonna let someone touch you. You're not going to stand up for yourself? What a little ****!!!
Crowd: Fight already!!! Fight! Fight! …

Appendix B

ATSS Coding Manual

Theme Name	Theme Definition	Coding Scale
Ok to fight in response to physical aggression	Belief that it is acceptable, and in some cases necessary to act aggressively if the other is the first aggressor, and physical aggression justifies retaliatory aggression. Decision Rules: Only code this if one or more of the following are true: 1) The participant cites a reason for fighting the person on the tape as the person bumping into them, or physically aggressing against them in some way. 2) The participant states "I would fight this person because they X (e.g., hit me first, bumped into me, etc.) where X is a reference to some aggressive action. 3) If the person references that "If they hit me, it's going to be on" where it's clear that on means fight. Do not code if the following is true: 1) If the person just states that "I would fight" in their response to a segment involving physical aggression as this should be coded as behavioral intention for physical aggression 2) If the person states "It's going to be on" or "I'm gonna take action back" when it's not clear what kind of action they intend to do Ex 1: If the person shoved me, I'm going to have to shove them back because it's self-defense and I don't feel like I'm going to let somebody push me or shove me around. I'm not the type of person. Ex 2: "I would probably push her back because she touched me first."	In each segment give a code of 0 if the code is absent and 1 if present.

	1) Ex 3: "I would have shoved her back that's what I would have did because don't nobody put their hands on me"	
Ok to fight in response to non-physical aggression	Belief that certain instances of non-physical aggression, including verbal aggression (teasing, name-calling, personal insults about the youth's family) threatening without specific intent for physical aggression) or relational aggression (rumor-spreading) justify the use of physical aggression. Decision Rules: Only code this if one or more of the following are true: 1) the participant cites a reason for fighting the person on the tape as the person talking about them to their face, behind their back, calling them names (e.g., punk), or talking about their family 2) The participant states "I would fight this person because they X (e.g., called me a punk, talked about my family), where X reflects a nonphysical aggression action. Do not code if the following is true: 1) If the person just states that "I would fight" in their response to a segment involving non-physical aggression as this should be coded under behavioral intention for physical aggression. Ex 1: "the person keeps calling me names and stuff, then I would fight" Ex 2: "Well, if she came back and kept talking her junk and stuff, and hating, I would've knocked her out."	In each segment give a code of 0 if the code is absent and 1 if present.
Beliefs against fighting	Belief that fighting is wrong or "stupid". Also includes belief that fighting can get you in to trouble, and belief that fighting is an ineffective way to address the situation. Ex 1: "I should try to stop them from fighting because it's bad for them and it's bad for like, the school, and the class, they might be late for class, and it' bad because it's starting a fight and that's a violation of the code of conduct, and that's it. Oh, and they could get suspended." Ex 2: "I would not fight them because I would not want to get suspended."	In each segment give a code of 0 if the code is absent and 1 if present.

	Do not code if the following is true: 1) If the person just states that "I would not fight" in their response to the segment. That should be coded as a behavioral intention for nonviolent behavior	
Beliefs about Right, Wrong, and Fairness	Belief that being nice, kind, and helpful is the right thing to do and leads to positive outcomes while being unkind leads to negative consequences. Also includes beliefs about treating people fairly (including in friendships and other kinds of relationships) and expecting similar treatment in return. Decision Rules: 1) If it includes the words "It's not right to.." or "It's wrong to.." or "It's not fair," or "It's not good to do X" or "It's not nice to.." 2) If the statement suggests the notion of getting the same thing in return that is given to another person (e.g. "You talk about my mother, I'm going to talk about your mother") 3) If participants state that "It's wrong to do X because you are my friend" these should be coded in this code. 4) **DO NOT** code statements about "If he hits me, I should/will hit him back" or "If he/she says something to me, I should/will hit them" as these reflect the Ok to fight in response to physical and nonphysical aggression codes 5) If they say something about how "fighting is not right, or fighting is wrong" this should go in Beliefs against fighting, and **NOT** in this code 6) Do not code when the participant just says "He/She did the right thing" in response to the script Ex 1: "It's not nice to pick on people 'cause the same thing might happen to you and it hurts people's feelings" Ex 2: "Talking about each other's mommas is not right because for one, they probably don't know each other's momma, and two, if they did, they shouldn't be talking about each other's momma." Ex 3: "You shouldn't, it's no reason for you to talk about people because she didn't say nothing to you or do nothing to you."	In each segment give a code of 0 if the code is absent and 1 if present.

	Ex 4: "If that way she want to act, treat me, then I will treat her that way."	
Tough Image and Reputation	The perception of a threat (anticipated or actual) to tough image or status during transactions with peers motivates youth to respond in a certain way to protect/maintain or improve their image. Decision Rules: 1) References to being called names (e.g., punk), and a need to act in a certain way (usually fight) to show that they are not a punk or a whimp should be coded 2) References to trying to look cool, fit in, or be popular as a guide for or the reason for acting a certain way should be coded here. 3) References to not wanting to do a particular nonviolent behavior (e.g., talk to a teacher) because it will hurt their reputation (e.g., make me look like a punk). 4) References to trying to have a good reputation as someone who does not fight etc. should **NOT** be coded here. Ex 1: "I would have fought him cuz everybody think I should but not just cuz it was peer pressure because everybody think that he can beat me and they callin me punks and stuff" Ex 2: "What I would have done is exactly what you tell me to do, hit her, cause she been trying to make me look like a punk for more than once, then it's gonna be on, cause I ain't no punk." Ex 3: "I'd just talk about them back! <u>Cause then they would think you a punk if you tell a teacher</u>"	In each segment give a code of 0 if the code is absent and 1 if present.
Characterological Self-Blame Attributions	Perceptions that the causes for a social event are a result of specific relatively non-modifiable characteristics of the individual such as their personality (e.g., "It's something about the way I am") or stable physical characteristics (e.g., a disability) (Graham & Juvonen, 1998). Decision Rules: 1) If they made it seem like it was the target of the aggression's fault because of something about the target as a person (e.g., I'm not cool so they pick on me), code as characterological self-blame	In each segment give a code of 0 if the code is absent and 1 if present.

	2) Any references to something about the self/participant as the problem or the source of the situation 3) References to the person's clothing being the reason they are being picked on should **NOT** be coded here. Ex 1: "You always trying to do something to me because I'm, it's me" Ex 2: "She doesn't really want me around, so why stay around." Ex3: "They do this to me because I won't fight back" Ex4: "Happens to me because other kids treat me this way."	
Behavioral Self-Blame Attributions	Perceptions that the causes for a social event are a result of the way the individual behaved (e.g., "It's something about what I did in this situation.") (Graham & Juvonen, 1998). Decision Rules: 1) If they made it seem like it was the target of the aggression's fault because of something they did (e.g., I should not have said that, then they wouldn't have picked on me) 2) References to the person's clothing as the reason that they are being picked on should be coded here. Ex 1: "I would be feeling embarrassed right then because the people were making fun of me for something I did." Ex2: "I should have been more careful (in my actions." Ex3: "It's my fault, I shouldn't have been in the hallway at that time." Ex4: "They probably just didn't like my clothes and if they didn't like my clothes they didn't have to say anything. All they had to do was keep it to themselves."	In each segment give a code of 0 if the code is absent and 1 if present.
External Causal Attributions	Perception that the causes for a social event are external to the participant. Decision Rules: 1) Anytime participant blamed cause of the situation on the other person, or gave advice to a target person that it was the other person in the situation's fault. 2) If they explained the reason for the peer's behavior	In each segment give a code of 0 if the code is absent and 1 if present.

	as being because of something about that person, like they are jealous (code only if it seemed like participant actually believed this, but not if it seemed like they were just teasing/talking back to the other kid as self-defense), or related to that person's behavior/life circumstances (e.g., "She just want to get her pick on cause she got something going on at home") 3) If they referenced the person's actions or cause for the event as being because the person is a "bad friend." Ex 1: "So I don't really see anything I've got to do to make her stop being mean to me, that's her own problem" Ex 2: "For real though, is your mama fat? Cuz you getting into us, somebody in your family must be fat." Ex 3: "And the other girl is just hating on her 'cause she got all the…she looks better than they do." Ex4: "When kids do pick on you now a days, they don't have nobody that love them, and that's sad." Ex 5: "I knew I couldn't trust you because you're not a true friend."	
Benign Intent Attributions	Judgments that a peer's intentions are non-threatening or benign (e.g., joking, not telling the truth, accidental insults) Decision Rules: 1) Code if person says "They/he/she was just joking/playing" or "It was an accident/mistake" 2) Code if statements start with "he is only doing X, or it was just X where X is something harmless, benign, or accidental (e.g., just messing with you) 3) Code if they say "I think they were being nice/kind etc" 4) References to "I wouldn't care because I know it's not true" or "don't know nothing about my family" should only be coded as benign intent if it is <u>clear</u> that the participant does not think the other person had mean or bad intentions. Ex 1: "I wouldn't do nothing but ignore it 'cause Marcus didn't do anything to me, except for just, um, tease me."	In each segment give a code of 0 if the code is absent and 1 if present.

	Ex 2: "This is nothing to fight over, why would I fight and get me in trouble when it was just an accident, cuz, I could, we could get, both of us in trouble just over something silly." Ex3: "I wouldn't take it that serious because a lot of people in my neighborhood act like that, but they're really playing"	
Hostile Intent Attributions	Judgments that a peer's intentions in a situation are purposely hostile or mean. Decision Rules: 1) Code if person says "You always do X or want to do X" or "I know she/he will do X or is being like X" where X is something mean-spirited or purposely unkind 2) Doing something on purpose or something mean-spirited as long as it isn't directly stated that they were being purposely mean in the script 3) "They are asking for it" 4) "They did that on purpose." 5) "They are trying to get back at me" 6) Do NOT code if the participants verbalization includes references to information provided in that segment of the script. Ex 1: "I think those other guys are startin to be major jerks, just because somebody's being a major jerk doesn't mean they have to come in and start following him, I mean he, they should probably be sticking up for the other guy. They don't know his family, his mom probably isn't fat at all. They just wanna, they just probably wanna be mean to him. Just because that other guy was." Ex 2: "His friends try to get him to fight because they want to see a fight. That's the only reason why, cuz they want to see a fight. " Ex 3: "Hey man, what's yo' problem?! You did that on purpose, you need to quit out. Quit it out!" Ex 4: "That kid is looking for trouble."	In each segment give a code of 0 if the code is absent and 1 if present.
Behavioral Intentions for Nonviolent Behavior	Expressions of the participant's intent to engage in non-violent behavior (e.g., walking away, talking it out, ignoring, doing nothing, confronting in a nonviolent way, not fighting) in response to the script.	In each segment give a code of 0 if the code is absent and 1 if present.

	Decision rule: 1) Usually takes the form of "I would do X" where X is some nonviolent action (e.g., talking it out, walking away, confronting the person in a nonviolent way etc.) 2) Can also take the form of talking back to the tape and telling the tape that they would walk away, not fight etc. Ex 1: "I would tell her to leave me alone and walk away." Ex 2: "I would probably turn around and say, why did you do that? And probably walk away if he tries to punch me or any of that. Umm, and go tell the teacher."	
Behavioral Intentions for Physical Aggression	Expressions of the participants' intent to engage in physical aggression (e.g., hitting, kicking, pushing, fighting, beating up) in response to the script. Also includes threats of physical aggression (e.g., if you keep doing X, I will punch you) Decision rule: 1) Usually takes the form of "I would do X" where X is a physically aggressive action (e.g., hit, push, kick, punch, etc.) 2) Can also take the form of talking back to the tape and pretending to beat the other person (in the script) up, etc. Ex 1: "I ain't going to say nothing, but if he keep looking at me, I might go over there and fight him." Ex 2: "If it still continues to go on and on, then I'm going to eventually start getting mad and eventually hit her." Ex 3: "This girl needs to stop spitting in my face and stop being all up in my face you know what I am just going to punch her."	In each segment give a code of 0 if the code is absent and 1 if present.
Behavioral Intentions for Non-Physical Aggression	Expressions of the participants' intent to engage in non-physical aggression, including verbal aggression (teasing, name-calling, threatening without specific intent for physical aggression) or relational aggression (intentionally damaging the relationship) in response to the script (e.g., if he said that to me, I would spread rumors about him). Decision rule: 1) Usually takes the form of "I would do X" where X is	In each segment give a code of 0 if the code is absent and 1 if present.

	some non-physically aggressive action (e.g., name calling, rumor spreading, etc.) 2) Can also take the form of talking back to the tape and calling that person names or telling that person they will spread rumors about them etc. 3) Does NOT include statements that are perceived as "instigating" or provoking conflict (e.g., What's your problem?", "What are you looking at?") Ex 1: "I would just keep letting them run their mouth and then I'd just bomb back on him. Talk about them back!" Ex 2: "If she was doing all that to me and my friend, I would go over there and say something to her, something mean to make her feel uncomfortable about everybody hearing and I wouldn't just stand there and let her talk about me that way cause that's wrong." Ex3: "You're a punk!"	
Verbalizations of Anger	This includes statements that are emotionally charged (e.g., "What the F___ is your problem?") or statements that are intended to elicit an emotional response (e.g., "You wanna start something bro?"), or statements that one is angry (e.g., "You are making me mad"). Decision Rules: 1) If the student refers to having an "anger problem", this is NOT coded as verbalization of anger 2) Most common form is "quoted responses" of the participant to those on the tape (e.g., "You talking about me bro?") Ex1: "What you ain't gunna do nothing. Not my fault you can't fight!" Ex2: "So you think you gonna be the boss of everybody?" Ex 3: "Girl, What's wrong with you!?" Ex4: "You talking about me boy!?"	In each segment give a code of 0 if the code is absent and 1 if present.

Appendix C

Problem-Solving Interview

A. Description. The Problem-Solving Interview (PSI) is semi-structured interview that assesses responses to two relationally provocative situations (being teased by a peer and a close friend saying something about their family). The process of the interview includes: (a) students described the situation as it might happen to them in the future; (b) students brainstormed responses for the situation; (c) students evaluated their first response by rating how well the response would work, identifying consequences, and describing how it would meet both their identified goals and predetermined goals (e.g., result in a fight, hurt your image, get revenge, get in trouble, and stop the problem); (d) students described their goals for the situation; and (e) students discussed their perceptions of specific provocative, aggressive, and effective nonviolent responses by identifying consequences for those responses.

B. Instructions. All participants were given the following instructions at the beginning of the semi-structured interview:

> "This is the interview that you and your parent agreed for you to participate in a while back. We record all the interviews so that we will have our exact words. Later we'll type up the conversations and change any names you mention. The interview will take about an hour. You don't have to answer any questions you don't want to, and you can let me know if at any time you want to stop the interview. If a teacher or student comes in while we're talking, we can stop until they leave. Everything you say will be kept private and will not be shared with your parents, teachers, friends, or anyone else. But if you tell me that someone is hurting you, or if you tell me that you are going to hurt yourself or someone else, then I will have to talk to my supervisor or a guidance counselor about it."

C. Script. All participants were interviewed using the script for the following two situations. Students were randomized as to which situation they received first.

Today is (*date*)**. I am** (*interviewer's name*)**, and I'm here with student ID# ____ .**

I want to talk with you about some problem situations that often happen to students your age. Some of these may have happened to you, or you may have heard about them happening to others. There are no right or wrong answers; we just want your honest opinions. Do you have any questions before we start?

Hand student preprinted card. SITUATION #3:

Written on this card is a situation that other students your age said has happened to them: "You told a close friend something private, and they told it to other people. This close friend promised they wouldn't tell anyone, but went behind your back and told other people."

PHASE I – IDENTIFY PROBLEM SITUATION

[*Visual Aid page 1*]

A. Has this *ever happened* to you? [*circle their response*]

YES NO

↓

IF NO: **How much *would* it bother you if it happened to you?** [*circle one*]

Not at all	A little	Somewhat	A lot	Couldn't be worse
[1]	[2]	[3]	[4]	[5]

IF YES:

How often has something like this happened to you in the past year? [*circle one*]

Never	1-2 times	3-5 times	6-9 times	10-19 times	20 or more times
[1]	[2]	[3]	[4]	[5]	[6]

How much did it bother you when it happened? [*circle one*]

Not at all	A little	Somewhat	A lot	Couldn't be worse
[1]	[2]	[3]	[4]	[5]

B. OK. I want to understand what this would be like for you. Put yourself in this situation and imagine the situation *as if it were actually happening to you*. *[If student has difficulty understanding can use example of imagining as if this was happening to you tomorrow.]*

Who is the other person – the friend - in this situation? Are they a close friend? [*If the friend named is not a close friend, prompt for them to use a friend they are closer to.*]

Can you think of a secret you would you tell your friend that was private? You don't have to say it out loud as long as you have it in your head. Is it something you really don't want others to know about? [*If student does not care if it is kept a secret, prompt for something more private*]

Where do you picture this happening?

Who else did they tell? How did you find out that they told someone else?

Do you think they were telling your secret to be mean? [*circle one*]

NO	YES
[0]	[1]

[*Refer to the situation described throughout interview.*]

PHASE II – ASSESSING RESPONSES

A. **What *would* you do if this was happening to you?** [*Write down their first response next to item 1.*]

[If student describes a vague reaction (e.g. I would confront them, say something)]
Can you tell me more about what you would do or say?

[If student describes an emotion (e.g. I would be angry)]
I hear you describing how you feel, what would you actually do?

[If student describes an over the top response (e.g. I would sue them, move to Italy.)]
I want to make sure, is this something you would actually consider doing?

Tell me more about why you would do that?

If that didn't work what would you try next? [*Use this prompt until student runs out of responses, do not push student if they say they can't think of anything else.*]

How well would things work out if you did (*insert first response*)? **[***circle number***]**

Very badly	Pretty badly	Could go either way	Pretty well	Very well
[1]	[2]	[3]	[4]	[5]

C. Response Consequences
[*Complete for first response only.*]

Now I want you to imagine that you are in that situation and that you actually *did* (*insert first response).* **What do you think *would* happen? What would be the result?**

[If student describes a vague consequence (e.g. Start an argument)]
Can you tell me more about what you think would happen? Can you describe what *(insert consequence)* **means?**

[If student describes an emotion (e.g. He would get mad.)]
I hear you describing how you/she/he would feel, what do you think would actually happen in the end?

[If student describes an over the top consequence (e.g. I might go to jail.)]
I want to make sure, is this something you think could actually happen?

What else might happen if you did (*insert first response)*? [*Prompt for more consequences, but don't push for a response*]

PHASE III –GOALS

A. [*Write on Goals Table*]

If this situation where *(insert name of other kid)* **said** (*insert what the kid said)* **was happening to you now, what would be your most important goal? How would you want it to work out or end?**

[If student describes a vague goal (e.g. Get away, confront him/her)]

Can you tell me more about what you would want to happen? Can you describe what you mean by *(insert goal)***?**

[If student describes an emotion (e.g. He would get mad.)]

I hear you describing how you/she/he would feel, what do you think would actually happen in the end?

[If student describes an action (e.g. I would hit him/her.)]

That's something you could do, how would you want this situation to work out?

[If student describes an over the top goal (e.g. Make him/her change schools.)]

I want to make sure, is this something you think could actually happen?

Why is that your goal?

What other results would you want to happen at the end? [*Prompt for more goals, but don't push*]

Why is that your goal? [*Ask for each goal mentioned*]

[*If child has difficulty generating an ending*]

What do you want to happen? What's the end result that you want?

B. Importance of Goals

[*Use Visual Aid page 3*]

How important is this goal to you? [*Write number for each goal listed on Goals Table*]

PHASE IV- RELATION BETWEEN FIRST RESPONSE AND GOALS

[*Use Visual Aid page 4*]

A. **In this situation you said that you would** (*insert first response*). **How likely is it that** (*insert first response*) **would help you reach** (*insert stated goals*) **on a scale from 1 to 5?**

[*Complete for each goal on the goal table rated a '3' or higher on importance*]

B. Relation Between First Response and Specific Goals

On a scale of 1 to 5, how likely is it that (*insert first response)* **would** …

[*circle number*]

	Definitely would not	Probably would not	Might or might not	Probably would	Definitely would
Result in an argument or fight?	[1]	[2]	[3]	[4]	[5]
Hurt your image and reputation?	[1]	[2]	[3]	[4]	[5]
What is your image and reputation?					
Help you get revenge?	[1]	[2]	[3]	[4]	[5]
Get you in trouble at home or school?	[1]	[2]	[3]	[4]	[5]
Break up your friendship?	[1]	[2]	[3]	[4]	[5]
Get your friend to stop telling others your secret?	[1]	[2]	[3]	[4]	[5]

PHASE V – CONSEQUENCES FOR PREDETERMINED RESPONSES

Now we are going to talk about some responses other students said they might try.

A. [*Place card containing response in front of student and complete Consequences*]

1. I would do the same thing to them - tell something my friend told me in private to other people.

The first response is I would tell something my friend told me in private to other people.

Now I want you to imagine that you are in that situation and that you *actually* told something your friend told you in private to other people. What do you think *would* happen? What would be the result?

[If student describes a vague consequence (e.g. Start an argument)]

Can you tell me more about what you think would happen? Can you describe what *(insert consequence)* **means?**

[If student describes an emotion (e.g. He would get mad.)]

I hear you describing how you/she/he would feel, what do you think would actually happen in the end?

[If student describes an over the top consequence (e.g. I might go to jail.)]

I want to make sure, is this something you think could actually happen?

What else might happen if you <u>told something your friend told you in private to other people</u>? [*Prompt for more consequences, but don't push for a response*]

B. [*Place card containing response in front of student and complete Consequences*]
2. I'd confront my friend and fight them.
The next response is I would <u>confront my friend and fight them</u>.

Now I want you to imagine that you are in that situation and that you *actually* <u>confronted your friend and fought them</u>. What do you think *would* happen? What would be the result?

[If student describes a vague consequence (e.g. Start an argument)]
Can you tell me more about what you think would happen? Can you describe what *(insert consequence)* **means?**

[If student describes an emotion (e.g. He would get mad.)]
I hear you describing how you/she/he would feel, what do you think would actually happen in the end?

[If student describes an over the top consequence (e.g. I might go to jail.)]
I want to make sure, is this something you think could actually happen?

What else might happen if you <u>confronted your friend and fought them</u>? [*Prompt for more consequences, but don't push for a response*]

C. [*Place card containing response in front of student and complete Consequences*]
3. I'd talk to my friend and ask why they broke their promise not to tell.
The next response is I would <u>talk to my friend calmly and ask why they broke their promise not to tell</u>.

Now I want you to imagine that you are in that situation and that you *actually* <u>talked to your friend calmly and asked them why they broke their promise not to tell</u>. What do you think *would* happen? What would be the result?

[If student describes a vague consequence (e.g. Start an argument)]
Can you tell me more about what you think would happen? Can you describe what *(insert consequence)* **means?**

[If student describes an emotion (e.g. He would get mad.)]
I hear you describing how you/she/he would feel, what do you think would actually happen in the end?

[If student describes an over the top consequence (e.g. I might go to jail.)]
I want to make sure, is this something you think could actually happen?

What else might happen if you <u>talked to your friend calmly and asked them why they broke their promise not to tell</u>? [*Prompt for more consequences, but don't push for a response*]

Hand student preprinted card. SITUATION #23:
Written on this card is a situation that other students your age said has happened to them: "Another student at your school has been teasing you. One morning at school this student comes up to you and says something disrespectful about your family to you in front of other students."

<u>PHASE I</u> – IDENTIFY PROBLEM SITUATION

[*Visual Aid page 1*]
A. **Has this *ever happened* to you?** [*circle their response*]

YES NO

↓

IF NO: **How much *would* it bother you if it happened to you?** [*circle one*]

Not at all	A little	Somewhat	A lot	Couldn't be worse
[1]	[2]	[3]	[4]	[5]

IF YES:
How often has something like this happened to you in the past year? [*circle one*]

Never	1-2 times	3-5 times	6-9 times	10-19 times	20 or more times
[1]	[2]	[3]	[4]	[5]	[6]

How much did it bother you when it happened? [*circle one*]

Not at all	A little	Somewhat	A lot	Couldn't be worse
[1]	[2]	[3]	[4]	[5]

B. **OK. I want to understand what this would be like for you. Put yourself in this situation and imagine the situation *as if it were actually happening to you*.** *[If student has difficulty understanding can use example of imagining as if this was happening to you tomorrow.]*

Who is the other person in this situation?

What would they say that would be disrespectful about your family? Would that bother you? [*If the comment would not be bothersome, prompt for a comment that would be more upsetting.*]

Where do you picture this happening?

What other people would be around?

Do you think they were teasing you to be mean? [*circle one*]

NO	YES
[0]	[1]

[*Refer to the situation described throughout interview.*]

PHASE II – ASSESSING RESPONSES

A. **What *would* you do if this was happening to you?** [*Write down their first response next to item 1.*]

[If student describes a vague reaction (e.g. I would confront them, say something)]
Can you tell me more about what you would do or say?

[If student describes an emotion (e.g. I would be angry)]
I hear you describing how you feel, what would you actually do?

[If student describes an over the top response (e.g. I would sue them, move to Italy.)]
I want to make sure, is this something you would actually consider doing?

Tell me more about why you would do that?

If that didn't work what would you try next? [*Use this prompt until student runs out of responses, do not push student if they say they can't think of anything else.*]

B. Response Effectiveness [*Use Visual Aid page 2*]
[*Complete ratings for first response only.*]

How well do you think things would work out if you did (*insert first response*)?
[*circle number***]**

Very badly	Pretty badly	Could go either way	Pretty well	Very well
[1]	[2]	[3]	[4]	[5]

C. Response Consequences
[*Complete for first response only.*]

Now I want you to imagine that you are in that situation and that you actually *did* (*insert first response).* **What do you think *would* happen? What would be the result?**

[If student describes a vague consequence (e.g. Start an argument)]
Can you tell me more about what you think would happen? Can you describe what *(insert consequence)* **means?**

[If student describes an emotion (e.g. He would get mad.)]
I hear you describing how you/she/he would feel, what do you think would actually happen in the end?

[If student describes an over the top consequence (e.g. I might go to jail.)]
I want to make sure, is this something you think could actually happen?

What else might happen if you did (*insert first response)*? [*Prompt for more consequences, but don't push for a response*]

PHASE III –GOALS

A. Generate Goals [*Write on Goals Table*]

If this situation where *(insert name of other kid)* **said** (*insert what the kid said)* **was happening to you now, what would be your most important goal? How would you want it to work out or end?**

[If student describes a vague goal (e.g. Get away, confront him/her)]

Can you tell me more about what you would want to happen? Can you describe what you mean by *(insert goal)***?**

[If student describes an emotion (e.g. He would get mad.)]

I hear you describing how you/she/he would feel, what do you think would actually happen in the end?

[If student describes an action (e.g. I would hit him/her.)]

That's something you could do, how would you want this situation to work out?

[If student describes an over the top goal (e.g. Make him/her change schools.)]

I want to make sure, is this something you think could actually happen?

Why is that your goal?

What other results would you want to happen at the end? [*Prompt for more goals, but don't push*]

Why is that your goal? [*Ask for each goal mentioned*]

[*If child has difficulty generating an ending*]

What do you want to happen? What's the end result that you want?

B. Importance of Goals

[*Use Visual Aid page 3*]

How important is this goal to you? [*Write number for each goal listed on Goals Table*]

PHASE IV- RELATION BETWEEN FIRST RESPONSE AND GOALS

[*Use Visual Aid page 4*]

A. **In this situation you said that you would** (*insert first response*). **How likely is it that** (*insert first response*) **would help you reach** (*insert stated goals*) **on a scale from 1 to 5?**

[*Complete for each goal on the goal table rated a '3' or higher on importance*]

B. Relation Between First Response and Specific Goals

On a scale of 1 to 5, how likely is it that (*insert first response)* **would** …
[*circle number*]

	Definitely would not	Probably would not	Might or might not	Probably would	Definitely would
Result in an argument or fight?	[1]	[2]	[3]	[4]	[5]
Hurt your image and reputation?	[1]	[2]	[3]	[4]	[5]
What is your image and reputation?					
Help you get revenge?	[1]	[2]	[3]	[4]	[5]
Get you in trouble at home or school?	[1]	[2]	[3]	[4]	[5]
Get the other student to stop teasing you?	[1]	[2]	[3]	[4]	[5]

<u>PHASE V</u> – CONSEQUENCES FOR PREDETERMINED RESPONSES

Now we are going to talk about some responses other students said they might try.

A. [*Place card containing response in front of student and complete Consequences*]
1. I would say something back about their family.
The first response is <u>I would say something back about their family</u>.

Now I want you to imagine that you are in that situation and that you *actually* <u>said something back about their family</u>. What do you think *would* happen? What would be the result?

[If student describes a vague consequence (e.g. Start an argument)]
Can you tell me more about what you think would happen? Can you describe what *(insert consequence)* **means?**

[If student describes an emotion (e.g. He would get mad.)]
I hear you describing how you/she/he would feel, what do you think would actually happen in the end?

[If student describes an over the top consequence (e.g. I might go to jail.)]
I want to make sure, is this something you think could actually happen?

What else might happen if you <u>said something back about their family</u>? [*Prompt for more consequences, but don't push for a response*]

B. [*Place card containing response in front of student and complete Consequences*]**]**
2. I'd fight them.
The next response is <u>I would fight them</u>.

Now I want you to imagine that you are in that situation and that you *actually* <u>fought</u> them. What do you think *would* happen? What would be the result?

[If student describes a vague consequence (e.g. Start an argument)]
Can you tell me more about what you think would happen? Can you describe what *(insert consequence)* **means?**

[If student describes an emotion (e.g. He would get mad.)]
I hear you describing how you/she/he would feel, what do you think would actually happen in the end?

[If student describes an over the top consequence (e.g. I might go to jail.)]
I want to make sure, is this something you think could actually happen?

What else might happen if you <u>fought</u> them? [*Prompt for more consequences, but don't push for a response*]

C. [*Place card containing response in front of student and complete Consequences*]**]**
3. I would try to talk it out calmly when nobody else is around.
The next response is <u>I would try to talk it out calmly when nobody else is around</u>.

Now I want you to imagine that you are in that situation and that you *actually* <u>tried to talk it out calmly when nobody else was around</u>. What do you think *would* happen? What would be the result?

[If student describes a vague consequence (e.g. Start an argument)]
Can you tell me more about what you think would happen? Can you describe what *(insert consequence)* **means?**

[If student describes an emotion (e.g. He would get mad.)]
I hear you describing how you/she/he would feel, what do you think would actually happen in the end?

[If student describes an over the top consequence (e.g. I might go to jail.)]
I want to make sure, is this something you think could actually happen?

What else might happen if you <u>tried to talk it out calmly when nobody else was around</u>? [*Prompt for more consequences, but don't push for a response*]

Appendix D

PSI Coding Manuals

Question	Code
Relevance of Situations	
Is this a real problem that has ever happened to you?	Enter student response 0 = No 1 = Yes
How often has something like this happened to you in the past year?	Enter student response 1 = Never Times 2 = 1-2 Times 3 = 3-5 Times 4 = 6-9 Times 5 = 10-19 Times 6 = 20+ Times
How much did (would) it bother you when(if) it happens?	Enter student response 1 = Not at All 2 = A little 3 = Somewhat 4 = Very 5 = Extremely
Do you think they were telling your secret to be mean?	0 = No 1 = Yes
Generated Responses	
What would you do if this was happening to you? Tell me more about why you would do that.	Enter student response (based on order student lists them)
How well would things work out if you did 1st response?	Enter student response: 1 = Very badly 2 = Pretty badly 3 = Could go either way 4 = Pretty well 5 = Very well
Code type of response	Code each response for type (*see Response Coding Manual)*
Effectiveness of each response	Coders rated effectiveness for each response (*see Response Coding Manual)*
# of responses generated	Calculated from coded responses

# of aggressive responses	Calculated from coded responses
# of effective nonviolent responses	Calculated from coded responses
# of ineffective nonviolent responses	Calculated from coded responses
# of provocative responses	Calculated from coded responses
# of avoidant responses	Calculated from coded responses
Rank of 1st aggressive response	Calculated from coded responses
Rank of 1st effective nonviolent response	Calculated from coded responses
Mean effectiveness of responses	Average of the effectiveness responses coded in response table for the student for those responses the student would actually do.
Effectiveness of 1st Response	The effectiveness rating of the 1st response selected (should be coded blind to student ratings)
Consequences of Generated Responses	
What do you think would happen? What would be the result?	Code by type of consequence (*See Consequence Coding Manual)*
Rating of likelihood of consequences generated for 1st response	Code by type of consequence (*See Consequence Coding Manual)*
Accuracy of perceived consequences	Mean of coders' ratings of likelihood of student generated consequences
Goals	
What would be your goal? Why is that your goal?	Enter goal.
Identified by 1st goal question: What is your most important goal?	Code yes for 1st goal identified in question 18 and no for other goals. 0 = No 1 = Yes
Goal category	Code each goal into one of the following categories (*See Goals Coding Manual)*
How important is this goal to you?	Enter student rating by goal number 1 = Not at all 2 = A little 3 = Somewhat 4 = A lot 5 = Very
Student - How likely is it that your 1st response would help you reach each of your goals? (coded for goals above a 3 in importance only)	Enter student rating for each goal 1 = Definitely would not 2 = Probably would not 3 = Might or might not 4 = Probably would

	5 = Definitely would
Likelihood that 1st response would help the student reach each of their goals? (coded for goals above a 3 in importance only)	Coders rate on same scale as students (*See Goals Coding Manual)*
Evaluation of First Generated Response	
How likely is it that 1st response will result in: .24/.59 – fight or argument .25/.60 – hurt image or reputation .27/.61 – get revenge .28/.62 – trouble @ home/school .29/.63 – break up your friendship .30/.64 – get your friend to stop	Enter student response: 1 = Definitely would not 2 = Probably would not 3 = Might or might not 4 = Probably would 5 = Definitely would
Coder Evaluation of how likely is it that 1st response will result in (interview questions or goal categories?) .25/.60 – hurt image or reputation .27/.61 – get revenge .28/.62 – trouble @ home/school .29/.63 – break up your friendship .30/.64 – get your friend to stop	Coder rate each consequence (*See Response Consequence Coding Manual)*: 1 = Definitely would not 2 = Probably would not 3 = Might or might not 4 = Probably would 5 = Definitely would
Difference between student and coder's rating	Eventually compare to community sample???
Consequences of Pre-determined Responses	
1st Predetermined Response - What do you think would happen? What would be the result?	Code by type of consequence (*See Consequences Coding Manual)*
2nd Predetermined Response - What do you think would happen? What would be the result?	Code by type of consequence (*See Consequences Coding Manual)*
3rd Predetermined Response - What do you think would happen? What would be the result?	Code by type of consequence (*See Consequences Coding Manual)*
Rating of likelihood of	Coder rate each consequence on Consequences spreadsheet

consequences generated for 1st response and each predetermined response	Code by type of consequence (*See Consequences Coding Manual)*: 0 = Not at all likely 1 = A little likely 2 = likely 3 = Very likely 4 = Extremely likely Eventually compare to community sample???
Accuracy of perceived consequences	Mean of coders' ratings of likelihood of student generated consequences

E. Coding. The following coding manuals were used to code youths' open-ended responses for PSI.

Response Category and Effectiveness		
Question: What *would* you do if this was happening to you? *Responses expressing ambiguous intent, such as using the word "might", should be coded disregarding the ambiguity (e.g. "I might fight" = "I would fight"). ** Responses that appear to have more than one theme should be coded based on the primary theme or purpose (e.g., "I would walk away so I can calm down" appears to include both tension reduction and avoidance. In considering the primary theme, however, the student is only walking away so they can calm down and therefore would only be coded as Reduce the Tension).		
Response Theme	**Definitions**	**Examples**
Aggressive Responses		
Physical Aggression	A physically aggressive response or assault. This includes: a) Hitting, slapping, pushing or shoving someone b) Throwing something at someone to hurt him/her c) Get someone else or others to beat up someone d) Breaking something of someone else's e) Threatening/intimidating someone with a weapon f) Hurting the other person	1) Hit him. 2) I might fight her. 3) Throw paper at him. 4) If I get angry enough I might think about hitting him. 5) My friend would fight them. 6) Hurting him.
Overt/Direct *(Nonphysical & Nonrelational)* Aggression	Verbal statements directed at the other person clearly intended to hurt or offend. This includes: a) Arguing or verbally fighting. b) Putting someone down to their face c) Insulting someone's family d) Giving someone mean looks (nonverbal overt aggression fits in this category) e) Picking on someone	1) Get out of my face. 2) Argue back and forth with him. 3) Say something about him and his mom. 4) Cuss her out. 5) Start an argument.

	f) Threatening/intimidating someone but without a weapon (e.g., threatening to hit them) **Rule Outs** Responses that are nonphysical, but are specifically aimed at harming someone's relationships with their peers should be coded in Relational Aggression (e.g., talking about a person's family to their face would be direct aggression, but talking about their family behind their back would be relational aggression).	
Relational Aggression	Verbal statements or behavior <u>intended to damage someone's relationships or reputation with peers</u> or threats of actions that would harm their relationship. These behaviors are often, but not always, covert or deceptive in nature. May include: a) Excluding someone from the peer group b) Telling someone you won't like him/her or won't be friends unless he/she does what you want c) Spreading a false rumor about someone d) Leaving someone out on purpose when it is time to do an activity e) Saying things about someone behind their back to make others laugh f) Other acts intended to ruin someone's reputation	1) Tell her secret. 2) Make up a rumor about him. Think about maybe…go and tell some of his stuff. 3) Just think about going up to her and say "I can't be your friend if you're going to talk about my mom bad." 4) Try to talk about his family. *(This is coded here because it is implied that it is general talking about their family which will impact how others see the person. If this included "to their face" then it would be Direct Aggression.)*
Confrontation	<u>Confronting or challenging someone</u> in a direct manner without explicit concern for tact, diplomacy, or being polite. May include physical assertiveness such as standing your ground in a situation that may exacerbate a situation. a) Tell them that what they did was wrong. b) Tell them you were upset or hurt by what they did. **Rule Outs** If respondent elaborates that they used a	1) I would say something to her. 2) Just tell him to leave me alone. 3) Stand up for myself.

	specific type of aggression, then the response should be coded as Physical Aggression, Overt/Direct Aggression, or Relational Aggression. If it is clear that confrontation is done in a positive way, including asking them about the problem rather than telling them, then it should be coded as Conflict Resolution.	
Unspecified Aggression	Responses that are clearly aggressive, but are vague and do not provide enough details to discern what type of aggression is being used.	1) I would get revenge. 2) Make her feel down/mad. 3) Get him in trouble.
Nonaggressive Responses		
Conflict Resolution	Attempting to resolve a situation (work it out) by talking it over politely, apologetically and calmly using diplomacy, tact and/or appropriate timing to find a solution. This includes a) Requesting clarification or more information b) Compromising c) Seeking forgiveness d) Asking someone nicely to give an object back e) Asking someone why they did what they did or said what they said without being confrontative f) Empathizing with the other person g) Asking the other person about the situation rather than telling them. **Rule Outs** If it is not clear that the respondent was talking in a polite or positive manner, the response should be coded as confrontation. If respondent indicates the purpose of conflict resolution is to reduce emotional response then it should be coded as Reduce the Tension.	1) How would you feel? 2) Ask him why did you go behind my back. 3) I would ask him politely can he stop talking about my family. 4) Mm like go tell her, 'do you want to go talk to it in the guidance office and see could we talk to, talk about it
Avoidant	Doing nothing, ignoring the situation, physically withdrawing from the situation, or avoiding contact with the individual involved in the situation. a) Distancing oneself from the situation b) Can be effective or non-effective	1) I probably would not talk to him for awhile. 2) Just forget it. 3) I'll walk away. 4) Find something else to do. 5) Probably stop being friends with him.

		6) Leave it alone.
Reduce the Tension	Engaging in a behavior that involves calming yourself down or reducing the intensity of negative emotions (e.g., anger) in a situation. h) Using humor i) Using relaxation techniques	1) Count to 10. 2) Deep breathing.
Defend Your Reputation	Defend your reputation by actions such as denying a rumor or telling others your version of events. **Rule Outs** Responses where student defends their reputation by engaging in aggression should be coded under the appropriate aggression category.	
Seek Help from an Adult	Asking an adult (e.g., parent, teacher, other adult) for help in the situation. This includes using the adult as a resource to regulate your emotion, to figure out an appropriate response, or to have the adult intervene in a positive way. **Rule Outs** Might consider whether there were instances of adult intervention that would be considered negative and whether we want to code these differently or code them here and just rely on the effectiveness ratings to differentiate among these.	1) Tell the teacher. 2) Ask can I go to my counselor. 3) Telling my mom.
Seek Help from a Peer or Older Youth	Asking a peer (e.g., friend, classmate, sibling) for help in the situation. This includes using the peer as a resource to regulate their emotion, to figure out an appropriate response, or to have the peer intervene.	1) Try to talk to another close friend. 2) My sister would come up to the school.
Seek Help Unspecified	Asking someone for help in the situation, but without specifying if this is a peer or adult. This includes using the other person as a resource to regulate their emotion, to figure out an appropriate response, or to have the other person intervene. **Rule Outs** If the individual only specifies a peer or an adult, it should be coded as Seek Help from a Peer and Seek Help from an	1) Get help. 2) I would get my friends and the teacher to stop him.

	Adult, respectively.	
Other Nonviolent Responses	Nonviolent responses that do not fit in one of the previous categories	1) Pray 2) Not fighting. 3) I'd be mad.

Response Effectiveness Score	**Definition**	**Example**
Instructions: Rate based on the answer to the question: "How well would things work out if the student did (*insert response*)?" All responses start out with a medium effectiveness score of 3 and will either be increased or decreased on a 1 to 5 rating scale based upon the following criteria. Many of these responses require careful consideration. Ratings should be based on how an objective, prosocial adult would judge effectiveness (In other words, do not put yourself "in the student's shoes" to judge effectiveness.) *Responses expressing ambiguous intent, such as using the word "might", should be coded disregarding the ambiguity (e.g. "I might fight" = "I would fight")		
1	*Very Badly:* Responses likely to result in <u>significant negative short term or long term consequences for the respondent.</u> This could include 1) getting him/her into serious trouble (e.g., getting suspended), 2) causing him/her physical harm, or other significant negative outcomes such as 3) serious problems with peers or with the individual they are interacting with (e.g., loss of an important friendship). Also includes responses that would likely result in 4) significant negative consequences for others or 5) a fight or another negative consequence for which there would be significant negative consequences (see examples #4 and #5).	1) I'd try to hurt them. *2)* I would tell something my friend told me in private to other people. *(This is scored 1 for situation #3, because it would result in the loss of an important friendship because the other person in the situation is specified as a "close friend".)* 3) I'd fight. 4) I'd start yelling or cussing at them. 5) Are you scared of someone my size?
2	*Pretty Badly:* Responses <u>likely to result in less serious negative consequences or that have a slight probability of resulting in serious negative consequences</u>. Responses that have some negative and some positive consequences are also in this category if the negative consequences outweigh the positive	1) I'd confront my friend, and if they meant to hurt me, I'd be ready to fight. 2) I would say something back about their family. 3) I would argue back. 4) Make her mad. 5) Confront her.

	consequences. Also includes responses that would result in somewhat negative consequences for others. **Rule Outs** Reponses likely to lead to significant negative consequences should be coded a '1'.	
3	*Could go either way:* Responses that would not be effective in resolving the situation, but are also not likely to lead to any negative consequences. This frequently includes responses where the participant states that they would not respond or do anything. **Rule Outs** Responses that involve aggression that could result in an additional positive outcome for the respondent, then the response effectiveness should be a 1 or a 2. Responses that involve doing nothing may also be rated a 4 if they are likely to be somewhat effective in the situation and not result in negative consequences.	1) I would just tell the truth. *(this is scored 3, because it is too vague to interpret)* 2) I would tell their parents about it. 3) Tell him to leave me alone … and … tell him don't bother me anymore. 4) Find something else to do. *(This is a 3 because they are not acting or attempting to solve the situation through their avoidance.)*
4	*Somewhat Effective:* Responses that are a reasonable attempt to resolve the problem prosocially, but it is unclear from the response how likely it is to be effective. This includes responses that do not provide enough details to determine how well they would work, but that seem reasonable. This also includes trying to have another peer intervene or solve the problem without you.	1) I'd tell my parents about it. 2) I wouldn't let it bother me because I'd know they were wrong. 3) I'd say "whatever" and walk away. 4) Can you … can you just stop picking on my mom. *(This is coded as a 4 for situation 23, because may not effective with a peer who is not a friend. Would be a 5 with a good friend in situation 3.)* 5) Just stay away from the other people that's like talking about it. *(This is a 4 because the avoidance is being used to stay out of trouble and stop the problem by staying away from problem situation.)*

		6) Not fighting him.
5	*Very Effective:* Responses likely to be effective. These generally reflect a plan that is likely to resolve the situation in a positive manner. This includes responses that are very effective at achieving one or more goals including 1) maintaining self-esteem/self-respect, 2) obtaining closure/resolution, 3) maintaining or improving the relationship with the other person, or 4) stopping the teasing or secret-telling. **Rule Outs** Respondents that indicate that the response would include talking with the other person in the situation, but are unclear as to how effective and polite it would be should be coded as a lower effectiveness score. This includes demanding that the participant apologize or stop, but no indication of the context of the conversation.	1) I would take it to peer mediation. *2)* I would tell an adult at school like a teacher or principal. *(this response gets a 5, whereas telling parents gets a 4, because the school staff is available to immediately respond within the actual situation.)* 3) I would talk to my friend and then I'd put it behind me. 4) I'd talk to my friend and ask why they broke their promise not to tell.

Goals		
Question*:* If this situation where *(insert name of other kid)* said (*insert what the kid said)* was happening to you now, what would be your most important goal? How would you want it to work out or end? Why is that your goal? ***Instructions:*** If the goal contains two categorical themes, code based on the prominent goal (i.e., reason why).		
Goal Theme	**Definition**	**Example**
Relationship Maintenance	Goal is to maintain the relationship or friendship, rather than prevailing in conflict. This includes goals of wanting components of a friendship to succeed or improve by the end of the situation (e.g., trust).	1) We'll become friends again. 2) Talk it out with her [bc she's a close friend]. 3) Trust her not to do it again [that way we can still be friends and I can tell her things about how I'm feeling]. 4) I would be trying to stay friends.
Moral	Goal emphasizes wanting to do the right, moral, or fair thing. **Rule Outs** Responses that are focused on a negative outcome occurring for the other person in the situation because	1) I would be trying to be fair. 2) For him to apologize [bc he had no right to talk about my mother].

	that is just or fair given what they have done should be coded as Revenge (e.g., She should get in trouble because that is fair for what she did to me."	
Tension Reduction	Goal is trying to reduce negative emotion, such as anger, by controlling oneself. Could reflect keeping oneself from getting anxious, upset, or tense. **Rule Outs** Responses that indicate the goal is to reduce tension within the relationship should be coded as Relationship Maintenance. Responses that indicate the goal is to reduce tension primarily in order to avoid conflict or a problem situation should coded in conflict avoidance.	1) I would be trying to keep myself from getting upset.
Instrumental-Control	Goal is to control the situation in order to meet one's own needs. Responses reflect a focus on getting what he/she wants, including keeping control over the interaction and not being pushed around by the peer (i.e., "winning"). This includes getting the specific problem to stop (situation #3 – stop spreading secrets; situation #23 – stop teasing). **Rule Outs** When the goal is focused more on maintaining the relationship than meeting the respondent's needs or wants, the goal should be coded as Relationship Maintenance. If meeting one's needs is focused on how others view the respondent then the goal should be coded as Maintain Image & Reputation/Self Defense (e.g., the goal for "others to stop teasing so they won't think I'm dumb" should be coded as Image & Reputation because the focus is on how others view the respondent).	1) I won't tell her any more of my secrets [bc she might tell someone else]. 2) Want her to apologize [so next time, she would know not to tell]. 3) Tell everyone what happened so they won't have to keep asking me [so it's final].
Revenge	Goal is to get even, harm or punish the other person in retaliation for their action in the situation This includes	1) To get revenge by saying things she did [because she did things to me so I should do things to her].

	using a 3rd party for revenge, such as trying to get the person in trouble with adults or ruining his/her relationship with peers. This includes interpersonal revenge (e.g., ending a friendship) and getting another student in trouble *to get back at them*.	2) Like SO to pick on him [so he can feel what I feel]. 3) Get his feelings hurt [he never should have said things about my momma to hurt my feelings]. 4) I would be trying to get back at my friend.
Conflict Avoidance	Goal attempts to prevent any escalation of the conflict by forgetting about the situation, ignoring the situation or more generally avoiding any conflict. **Rule Outs** When the goal is focused on maintaining control or having one's own way more than simply avoiding conflict or fighting, then the response should be coded as Instrumental-Control.	1) Ignore them [because it gets on my nerves]. 2) For us to forget about it [because I don't want to fight with her]. 3) I'll walk away [because if I say things she'll just say things back]
Maintain Image and Reputation/ Self-Defense	Goal is to protect or improve the way that one is viewed by others. This also includes seeking approval from others. This also includes components of self-defense, such as trying to stop hostile criticism, rumors, abuse of you or your family/friends. This includes goals that are generally focused on avoiding a negative view by others (e.g., saving face, damage control). **Rule Outs** For situation #23, items that only involve teasing stopping should be coded as Instrumental-Control.	1) People just forget about it. (*This is coded here because it is an attempt to control other's negative opinions through discussing situation. This is not instrumental control because it is focused on other people's impressions of the respondent).* 2) For other kids to stop teasing me [bc I don't want to be the laughingstock of the year]. 3) Everyone to stop looking at me and giggling [bc I don't want to be known as what the secret was]. 4) I would be trying to protect myself. 5) I would be trying to get others to see that I did the right thing.
Stay out of Trouble	Goal is focused on not getting in trouble with authority figures (e.g., teachers, parents). This does *not* include getting in trouble with peers.	1) Try not to let the teachers find out and report it [bc usually it's bad]
Seeking more information	Goal is related to obtaining more information about the peer or the circumstances in order to try to figure out how things happened.	1) I would want to know why he told my secret.
Other Goal	Goals not coded in previously listed	1) Talk to her [bc she promised but

	categories. This includes responses that are too vague to be accurately categorized. This also includes responses that appear to have no connection to the problem situation (example #2).	walk away if she makes a fuss 2) Go to his house and practice with him [so we can get better at baseball]

Goal Likelihood Score	Definition	Example
Questions: In this situation you said that you would (*insert first response*). How likely is it that (*insert first response*) would help you reach (*insert stated goals*) on a scale from 1 to 5 (*Definitely would not* to *Definitely would*)? ***Instructions:*** All ratings start out with a medium rating of 3 and will either increase or decrease based on the following criteria. The rating should reflect (a) whether the response will directly cause the goal and therefore are a match for each other (e.g., a physically aggressive response more closely matches an aggressive goal like getting revenge or an instrumental-control goal than a prosocial goal like avoiding conflict), and b) whether the goal is more or less severe than the response (e.g., the response "I would yell at them" is not as severe as "getting revenge". When considering what impact a response will have on other students you should generally assume that other students will hear about how the student responded in the situation.		
1	*Definitely would not:* The response has no clear connection to the goal and is very unlikely affect whether or not the goal is accomplished. This includes goals that are generally very unrealistic and unlikely to happen given any response.	*Situation #3* 1) *Response:* I probably would not talk to him for a while. *Goal:* To try to get people to stop believing it [so people won't tease me]. 2) *Response:* Tell her secret. *Goal:* To not have to listen to it anymore. *Situation #23* 3) *Response:* Just, face the other way. *Goal:* Get revenge. 4) *Response:* I would show him how, how tough I am. Like I just stand up to someone my own size instead of a girl. *Goal:* Like to see crowd of kids running after him with bats to see if he's scared [to see how tough he really is].
2	*Probably would not:* It is possible that the response could cause the goal, but it seems unlikely.	*Situation #3* 1) *Response:* I probably would not talk to him for a while. *Goal:* We could still be friends [because he was my best friend]. (*Note that the response is similar to Example 1, but the goal is different. This goal is considered more likely because this goal would be more likely to occur as a direct cause of the response.*) 2) *Response:* I would go confront Billy, and to go ask him if he really did it. And if he told me yes, I would go ask him to go around and tell everybody that it's not true, if he really is my friend. *Goal:* For other kids to stop teasing me [bc I don't want to be the laughingstock of the year]. *Situation #23* 3) *Response:* Just walk away. *Goal:* Just to be friends again.

3	*Might or might not:* It is not clear whether the response would directly lead to the respondent's goal and may or may not depending on the circumstances. This includes when responses are not detailed or clear enough to determine if they would help reach the goal or when the goal is vague or unclear.	*Situation #3* 1) *Response:* I would just deal with it. By ignoring her. *Goal:* That we get in an argument. 2) *Response:* I would tell him to stop. *Goal:* Want it to be over with, change to a diff subject [bc I won't have to keep talking about it over and over with him]. *Situation #23* 3) *Response:* I would get advice from another friend. *Goal:* Try to be friends [bc I don't want him to tease me anymore]. 4) *Response:* I would ask her what is up, why did she do that. *Goal:* Her to apologize [so she can see what she did wrong and I'll forgive her].
4	*Probably would:* The response could reasonably cause the goal, but does not rise to the level of "likely" to directly cause the goal. This includes when the goal is possible, but is not an exact match or is more extreme then what would be expected given the student's response.	*Situation #3* 1) *Response:* I'd go to her and say: why'd you tell my secret. *Goal:* Talk it out [bc I'd be very mad & violence doesn't solve anything]. 2) *Response:* I'll talk to him in private and ask him can he not tell anyone my, um, business. *Goal:* He won't tell anyone else my private business [so I feel I can trust him again]. *Situation #23* 3) *Response:* I would show him how, how tough I am. Like I just stand up to someone my own size instead of a girl. *Goal:* Like to see him get beat [so he could stop picking on everyone else]. 4) *Response:* I would probably either run or just walk away. *Goal:* Him not yelling and being near me [bc I don't want him yelling every time he's near me].
5	*Definitely would:* The response and goal are clear, logically related, and realistic where the it is very likely that the response would directly cause the goal.	*Situation #3* 1) *Response:* I would go up to her and ask her why she did it first. *Goal:* Find out why [so I can know why she did it instead of being mad at her]. 2) *Response:* Just forget about it. *Goal:* Move on [bc it wasn't that embarrassing of a thing, like a secret]. *Situation #23* 3) *Response:* Talk about somebody in her family. *Goal:* Get revenge.

Response Consequence Rating	**Definition**	**Example**
Instructions: Rate how likely you think the student's response to the problem situation would result in each consequence listed below. Likelihood is rated on a 5-point scale from *Definitely would not* to *Definitely would* result in the consequence listed. Rate the likelihood of the response resulting in the consequence even if you think the response is inappropriate or unrealistic. For example, if the student says they would kill the other person in the situation it		

is unlikely they would do that, but this response should be rated as likely to stop the problem . When rating responses expressing ambiguous intent (e.g., "I might fight") the ambiguity should be ignored. (e.g."I might fight." = "I would fight.")		
Consequence 1: Response would result in an argument or fight.		
1	*Definitely would not:* Response would most likely NOT result in additional verbal or physical conflict.	*Situation #3* 1) Just forget about what happened. 2) Talk it out with her in private. (*This is coded as a 1 because the student emphasized that they were trying to talk to the other person in a more effective way.)* *Situation #23* 3) Talk to my mom about it. 4) Go to class.
2	*Probably would not:* Response probably would not result in additional conflict. This includes responses that may reduce the conflict, but do not include enough details to be certain how well they would work.	*Situation #3* 1) Ask him why he did it. *Situation #23* 2) Talk it out.
3	*Might or might not:* Response is as likely to result in an argument as it is to be resolved peacefully. This category includes responses that are not described clearly enough to judge whether or not they would result in a fight.	*Situation #3* 1) Tell her I can't trust her anymore & not to tell my secrets. *Situation #23* 2) Tell her I think she needs to apologize.
4	*Probably would*: Response would (a) be likely to result in a mild escalation of conflict or (b) has a slight chance of resulting in a serious fight, though it is unclear from the response if this would always be the case.	*Situation #3* 1) Tell her secret. *Situation #23* 2) Say something back.
5	*Definitely would:* Response would be very likely to lead to a physical argument or fight.	*Situation #3* 1) Cuss him out. *Situation #23* 2) Punch him.
Consequence 2a: Response would hurt the image and reputation of the student if the student has a reputation of being aggressive, tough, or delinquent. When coding this category it should be assumed that others would know about the student's response. This rating includes both how consistent the response is with the image/reputation and how likely it is that this response would influence others' view of the respondent.		
1	*Definitely would not cause others to change their view:* Most others would view the response as very consistent with a tough/aggressive reputation and the response would strongly support or reinforce this image.	*Situation #3* 1) Yell at him. *Situation #23* 2) Talk about someone in her family. 3) I might get into a fight.

2	*Probably would not:* The response may not be clearly consistent with a tough/aggressive reputation, but it would probably not cause most others to change their view of a student with a tough/aggressive reputation.	*Situation #3* 1) Go up to him and confront him. 2) Be mad at her. *Situation #23*
3	*Might or might not:* Could go either way – it is not clear whether the response would cause others to change their view of a student with a tough/aggressive reputation. This includes responses that could be interpreted in different ways.	*Situation #3* 1) I would walk away and never talk to her again. *Situation #23* 2) Go up and talk to her about it.
4	*Probably would:* Many others could see the response as somewhat inconsistent with a tough/aggressive reputation and it could result in them changing their view of the student.	*Situation #3* 1) Ask my friend nicely why she went behind my back. *Situation #23* 2) Tell the teacher.
5	*Definitely would:* Most individuals would be likely to see the response as inconsistent with a tough/aggressive reputation and the response would be likely to affect their view of the student.	*Situation #3* 1) Count to 10. *Situation #23* 2) I would probably cry.
Consequence 2b: Response would hurt the image and reputation of the student if the student has a reputation of being prosocial (e.g., good student, good friend, kind, generous, responsible). When coding this category it should be assumed that others would be aware of the student's response. This rating includes both how consistent the response is with the image/reputation and how likely it is that this response would influence others' view of the respondent.		
1	*Definitely would not cause others to change their view:* Most others would view the response as very consistent with a prosocial reputation and the response would strongly support or reinforce this image.	*Situation #3* 1) Tell the teacher. 2) I would talk to her nicely about why she told my secret. *Situation #23* 3) Walk away and go to class.
2	*Probably would not:* The response may not be clearly consistent with a prosocial reputation, but it would probably not cause most others to change their view of a student with a prosocial reputation.	*Situation #3* 1) Start laughing. 2) Tell her I can't trust her anymore & not to tell my secrets. *Situation #23* 3) I would tell him not to talk about my family.
3	*Might or might not:* Could go either way – it is not clear whether the response would cause others to change their view of a student with a prosocial reputation. This includes responses that could be	*Situation #3* 1) I would stop talking to him. *Situation #23* 2) I would make him mad. 3) I would show her how tough I am.

	interpreted in different ways.	
4	*Probably would:* Many others could see the response as somewhat inconsistent with a prosocial reputation and it could result in them changing their view of the student.	*Situation #3* 1) I would tell one of his secrets. *Situation #23* 2) Say something back.
5	*Definitely would:* Most individuals would be likely to see the response as inconsistent with a prosocial reputation and the response would be likely to affect their view of the student.	*Situation #3 & #23* 1) Punch him. 2) I would yell and cuss him out.
Consequence 3: Response would help the respondent get revenge.		
1	*Definitely would not:* Response would clearly not result in the respondent getting revenge, both in that it does not promote any harm or negative outcome for the other person, AND it does not seem to be motivated by a desire to retaliate. In many cases, this response has the potential to result a positive outcome for both the respondent and the other person.	*Situation #3* 1) I'll talk calmly to her. *Situation #23* 2) I would probably cry. 3) Walk away.
2	*Probably would not:* Response does not appear to reflect vengeful intent OR would likely not harm the other person, but could include responses that inadvertently negatively affect the other person.	*Situation #3* 1) Tell him to stop telling my secrets. *Situation #23* 2) I would say something to her. 3) Get angry and have an attitude.
3	*Might or might not:* Response may or may not be related to getting revenge, or might not be detailed enough to suggest what the respondent's motive is. This could include responses that do not have much effect at all.	*Situation #3* 1) Try to make him mad. *Situation #23* 2) Tell the teacher to get her in trouble.
4	*Probably would:* Response reflects either a vengeful intent OR would likely results in negative impact on the other person, but not both. This could also include responses that are attempts to get revenge, but are likely to be unsuccessful in harming the other person.	*Situation #3* 1) I would tell her she's not my close friend anymore. 2) I would stop talking to her. *Situation #23* 3) Yell at him that he shouldn't tease me.
5	*Definitely would:* Response results in getting revenge both in that the consequence would clearly negatively impact the other person in the situation and reflects an effort to retaliate or "punish" the other person for their	*Situation #3* 1) Tell her secret. *Situation #23* 2) Punch him. 3) Make her mad, tease her, and get back at her.

	behavior.	
Consequence 4: Response would get the respondent in trouble at home or school.		
1	*Definitely would not:* Response would be very unlikely to result in the respondent being punished or having negative consequences imposed by parents or school staff. Response helps the respondent avoid blame for the incident as well as any form of reprimand or condemnation.	*Situation #3* 1) Ask him why he did that. 2) Just forget about it. *Situation #23* 3) I would go try to find a near adult. 4) Walk away and go to class.
2	*Probably would not:* Response would probably not result in the respondent being punished or having negative consequences imposed by parents or school staff.	*Situation #3* 1) Be mad at her. *Situation #23* 2) Tell her to apologize. 3) Tell my sister and let her handle it.
3	*Might or might not:* Response could result in punishment or getting in trouble under some circumstances, but not in other circumstances. These responses might not be detailed enough to provide a clear outcome.	*Situation #3* 1) I would confront Jim. 2) Say mean things to her. 3) Spread rumors about her. *Situation #23* 3) I might get angry and have an attitude.
4	*Probably would:* Response would likely result in some negative response from an authority figure, but may not always result in a negative consequence because the respondent may not always be caught or the behavior is not severe.	*Situation #3* 1) Cuss him out. 2) Make fun of her in front of our class. *Situation #23* 3) Talk about someone in her family.
5	*Definitely would*: Response would clearly result in the respondent getting in trouble by being punished or reprimanded in most cases.	*Situation #3* 1) I might get into a fight. *Situation #23* 2) Show him how tough I am [that I stand up to so my own size]. 3) Punch him.
Consequence 5: Response would break up the respondent's friendship with the other person. (Situation #3 only)		
1	*Definitely would not:* Response would NOT cause any negative impact on the relationship and would likely lead to a positive resolution to the problem with the respondent's friend.	1) I would talk to her privately and ask why she told my secret. 2) Talk it out.
2	*Probably would not:* Responses would probably not harm the relationship, but it is entirely clear from the response if this would always be the case.	1) I would ignore the problem. 2) Talk to another friend for advice.
3	*Might or might not:* Response could negatively or positively impact friend and	1) Confront her and tell her how I felt. 2) Be mad at her.

	the relationships, or might result in no effect on the relationship, depending on the circumstances, which are unclear from the response. This might include responses that would hurt some friendships and not affect others, depending on the strength of the relationship.	3) Tell him to stop. 4) Tell my mom or dad.
4	*Probably would:* Response could negatively impact relationship, but would probably not completely sever the relationship. This includes responses that indicate a negative response that can be resolved over time.	1) Talk to her and say mean things to her. 2) Tell her secret. 3) Tell her I can't trust her anymore.
5	*Definitely would*: Response would almost certainly lead to serious damage to the friendship and termination of the relationship.	1) Ask her why she told [we can't be friends no more]. 2) I'd tell her she's not my friend.
Consequence 6: Response would get the respondent's friend to stop telling others his or her secret. (Situation #3) OR **Would get the other student to stop teasing him or her.** (Situation #23)		
1	*Definitely would not*: Responses would definitely not get the other person to stop what they were doing.	*Situation #3* 1) Be mad at him. 2) Tell her secret. 3) I would beat her up. *Situation #23* 2) Do nothing.
2	*Probably would not:* The responses would probably not get the other person to stop what they were doing.	*Situation #3* 1) I would argue with him. *Situation #23* 2) Either run or walk away. 3) I would probably cry. 4) Ignore him.
3	*Might or might not:* Response is <u>just as likely</u> to cause the other person to cease their behavior as it is to cause them to continue. These responses could be unclear whether the problem would actually be stopped.	*Situation #3* 1) First ask Billy if he did it, then tell everybody it's not true. 2) I would tell her she's not my close friend anymore. *Situation #23* 3) Tell him that he's wrong and I don't really care what he thinks. 4) Ask him to stop talking about me and my family. 5) Ask why she'd say that.
4	*Probably would:* Response encourages other person to stop their behavior and	*Situation #3* 1) Talk it out with her.

	may have some success. This includes responses that may get the other person to lessen their behavior or stop for only a short time.	*Situation #23* 2) Tell my dad what happened. 3) Just stay away from other people that are talking about it. *(This is a 4 because the avoidance is being used to stay out of trouble and stop the problem by staying away from problem situation.)*
5	*Definitely would:* Response will almost certainly lead the other person to stop their negative behavior.	*Situation #3* 1) I would talk to her privately to resolve the situation. 2) I would talk to my friend and then I'd put it behind me. 3) I'd talk to my friend and ask why they broke their promise not to tell. *Situation #23* 4) Tell a teacher. *(This response gets a 5, whereas telling parents gets a 4, because the school staff is available to immediately respond within the actual situation which increases the likelihood that it will be effective.)*

Consequences		
Question: Now I want you to imagine that you are in the situation and that you actually did *(insert first response or predetermined response)*. What do you think would happen? What would be the result? *Consequences expressing an ambiguous result, such as using the word "might", should be coded disregarding the ambiguity (e.g. "We might fight" = "We would fight").		
Consequence Theme	**Definition**	**Example**
Positive Consequences		
The Problem *Defined in the Situation* Would Stop (PSTP)	The specific problem in the situation end (e.g., the other person would stop picking on or talking about you). This also includes the other person learning their lesson or not continuing the problem in the future. These answers should directly reflect the defined situation (#3 or #23). This may include vague responses that indicate that the situation would end in a positive manner. **Rule Outs** This does not include consequences	1) He would probably stop talking about me. 2) He may agree that he was wrong. And he will stop picking on me for a while. 3) People would forget about it. 4) It would probably end good. 5) She'll understand that that was really embarrassing and she didn't need to really tell nobody. She'll learn how to

	that explicitly reference a friendship/relationship or principles of a mutually beneficial relationship, such as trust or compromise. These are included in Positive Impact on Relationship.	keep secrets. 6) It would probably end up going OK.
The Problem *Defined in the Situation* Would Stop (PSTP)	The specific problem in the situation end (e.g., the other person would stop picking on or talking about you). This also includes the other person learning their lesson or not continuing the problem in the future. These answers should directly reflect the defined situation (#3 or #23). This may include vague responses that indicate that the situation would end in a positive manner. **Rule Outs** This does not include consequences that explicitly reference a friendship/relationship or principles of a mutually beneficial relationship, such as trust or compromise. These are included in Positive Impact on Relationship.	1) He would probably stop talking about me. 2) He may agree that he was wrong. And he will stop picking on me for a while. 3) People would forget about it. 4) It would probably end good. 5) She'll understand that that was really embarrassing and she didn't need to really tell nobody. She'll learn how to keep secrets. 6) It would probably end up going OK.
Positive Impact on Relationship (PRM)	The respondent's relationship or friendship with the other person in the situation is maintained or strengthened. This includes continuing to trust each other and working things out. This includes responses in which either person might be temporarily upset or the relationship would be hurt, but would still be friends at the end of the situation.	1) We'll probably be friends. 2) I'd be able to trust her again. 3) We would probably just work it out. 4) We would be friends, but not close friends.
The other person apologizes (OPA)	The other person in the situation apologizes to the respondent or seeks forgiveness.	1) She might apologize. 2) Maybe she'll apologize. 3) I think he would like apologize like, I'm sorry about talking to your family and then it'll go very well.
Negative Outcome Would Not Occur (NO-NEG)	A negative outcome is prevented. This includes responses that explicitly state the absence of an aggressive action.	1) We would not get into a fight. 2) We would not get suspended. 3) I wouldn't fight her

		(friend).
Other – Positive (POS)	Other responses, which the RESPONDENT considers positive, that are not coded in the categories listed previously. This includes a positive reaction from the other person or peers that does not clearly indicate a resolution to the situation.	1) He would start laughin. 2) He would probably agree with me.
Negative Consequences		
Fight or Argument (FGT)	There is a fight or argument in which the respondent is either a victim or perpetrator. This includes responses that indicate that the other person would initiate a fight regardless of respondent's role (See Example #2). This also includes verbal fighting (e.g., yelling back and forth). **Rule Outs** This only includes responses that are a clear altercation (e.g., "We would get mad" should be Negative Emotional Response – Both; "He would yell at me" should be Provocative/Teasing). If respondent is not included in the physical altercation (e.g., Other students would hit him) should be coded as Negative Outcome for the Other Person.	1) He would try to hit me and then we'll both fight. 2) He would try to fight me, but I wouldn't fight him. 3) He would try to chase me down. 4) We'll start yelling at each other. 5) She would beat me up.
Hurt Respondent's Image or Reputation (REP)	The respondent's image or reputation with peers is hurt. This includes suggestions that others would view the respondent as having done the wrong thing in the situation. This also includes when the respondent indicates that they would feel embarrassed or upset specifically in response to others' reactions to them, such as peers turning against them. **Rule Outs** When the image/reputation being hurt is only for the other person in the situation, it should be coded as Negative Outcome for the Other Person. When a general statement is made about negative emotions other than	1) He'd probably think I'm a punk. 2) He'd go around saying that that he didn't say that, and that would make me look like a liar. 3) It'd probably make both of us look bad. 4) People probably wouldn't see me as all shy and sweet, innocent. They'll probably like "Whoa." 5) I'm going to be embarrassed. 6) She might start a rumor at school.

	embarrassment, it should be coded as Negative Emotional Response (Respondent, Other or Both). When the consequence involves the other person telling someone in authority (e.g., parent or teacher) that could lead to the respondent getting in trouble or the authority figure being upset, it should be coded under 'Get in trouble at home or school – respondent.'	
Retaliation against respondent (RTL)	The other person in the situation retaliates or gets revenge against the respondent. Only general responses about retaliation are coded here. **Rule Outs** Specific responses that indicate *how* the peer would retaliate (e.g., verbally or physically) should be coded under that specific category (e.g., provocation or fight, respectively).	1) She would say something back about my family. 2) He might try to get back at me.
Get in trouble at home or school (a) Respondent (TRB - R) (b) Other Person in Situation (TRB - O) (c) Both Respondent and Other Person in Situation (TRB - B)	The (a) respondent; (b) other person; or (c) both the respondent and other person in the situation gets in trouble at home or at school. Also includes when telling someone in authority could lead to the (a) respondent, (b) other person, or (c) both getting in trouble (see Example #3). When the respondent does not clearly indicate who would get in trouble the outcome should be coded as (c) both (see Examples #7 and 8).	**(a) Respondent** 1) I'll get suspended. 2) He might tell the teacher and might get an office referral. 3) He might tell his mom. **(b) Other Person** 4) Peer would try to hit student and they'll get in trouble. 5) [I'd] Probably tell her parents. Probably tell a principal. **(c) Both Respondent and Other Person** 6) We would both get in trouble. Expelled or might get in trouble with the officer and get in trouble at home. 7) Would get in trouble. 8) Get in trouble, such as getting suspended.
Problem *Defined by Situation* Would **Not** Stop (NSTP)	The problem continues. This includes responses that explicitly state that the other person or other students would continue picking on the respondent or	1) He'll tell something else about me. 2) The nonsense will never end.

	talking about the respondent. These answers should be in direct relation to the defined situation (#3 or #23).	3) They'll try to hurt our family. He'll keep treating my aunt the same way.
Negative Impact on Relationship (NRM)	The friendship of the respondent and other person in the situation is damaged. This includes both harming (e.g., no longer trust) and ending the relationship. This also includes responses in which either the respondent or other person would stop sharing secrets, not spend time together, not trust one another, etc. **Rule Outs** Consequences that indicate that the other person would react with a negative emotion should be coded as Negative Emotional Response – Other.	1) She (friend) wouldn't be my friend no more. 2) She probably wouldn't tell me nothing else. 3) He would've said I shoulda never told you. He would say I'm not a true friend. He wouldn't talk to me anymore. 4) We wouldn't tell each other secrets and stuff. 5) I can really like tell her fake secrets to know that it's not real and stuff and see where she keep it.
Negative Emotional Response (a) Respondent (EMT-R) (b) Other Person in Situation (EMT-O) (c) Both Respondent and Other Person in Situation (EMT-B)	The (a) respondent; (b) other person; or (c) both the respondent and other person in the situation have a negative emotional reaction (e.g., anger, sadness, upset, or general bad feeling). **Rule Outs** This does not include humor, which is coded as either Other - Positive, or embarrassment, which is coded under Hurt Image or Reputation.	**(a) Respondent** 1) It would start to get annoying. 2) I would be upset. **(b) Other Person** 3) Student would still be mad. 4) He might snap. 5) Friend would have a bad feeling. **(c) Both Respondent and Other Person** 6) I think that we'd probably both be sad after after we finish fightin'. And thinkin' about it because we have been friends for a while, long time.
Provocative/Teasing (PRV)	The other person in the situation makes a provocative or teasing response. This includes responses that are vague. **Rule Outs** This does not include outcomes that involve a physical fight. Consequences that are a clear continuation of the problem situation (e.g., he would keep on teasing me) should be coded as Problem Would Not Stop.	1) She'll probably call me a big baby. 2) He'll probably say something back about mine. And he would joke on me. He might joke on other people in the classroom if they say anything. 3) He would come to me and confront me about what I did.
Injury/Hurt	The (a) respondent; (b) other person; or	**(a) Respondent**

(a) Respondent (INJ-R) (b) Other Person in Situation (INJ-O) (c) Vague/Both Respondent and Other Person in Situation (INJ-B)	(c) both the respondent and other person in the situation gets injured, hurt (generally or physically), or needs treatment because of physical injuries (e.g., going to the hospital). When the respondent does not indicate who would be hurt in the situation, it should be coded as (c) Vague/Both (see Example #7) **Rule Outs** Responses that indicate a clear emotional response should be coded in one of the categories labeled Negative Emotional Response. Responses that indicate that a fight has occurred, but do not specify an injury should be coded as Fight or Argument (see example #8).	1) Imma get hurt, or could get hurt. 2) I will have a broken nose, and that's it. **(b) Other Person** 3) I might hurt him. **(c) Vague/Both Respondent and Other Person** 4) Somebody could get hurt and be in the hospital. Um, somebody could get stitches. Somebody could get cut or something. 5) That one of us would get really hurt and end up going to the hospital. 6) Maybe we would both might be hurt. 7) I could I could kill somebody or something, because I'm mad at myself and I could jump off of a building or somethin.
Negative Outcome for the Other Person (NOUT)	There is a negative outcome for the other person in the situation not falling into one of the previously specified categorties (i.e., gets in trouble, injured or hurt, and negative emotional response). This includes negative outcomes that result from the respondent having another individual enact the consequence (see Example #2). This also includes when the response would result in getting revenge on the other person. **Rule Outs** Responses that specifically relate to the other person getting in trouble should be coded as Get in Trouble at Home or School – Other. Responses that indicate that the other individual would have a negative emotional reaction should be coded as Negative Emotional Response-Other.	1) They'll be mad at her like she was mad at me. 2) My sister would probably fight her. Um my other sister might fight her too. 3) I would get revenge.
Other – (NEG)	Other responses, that would be a	1) She'll probably go home

	negative consequence for the respondent, that are not coded in the categories listed previously.	and tell her mama who will come up and make the situation worse. 2) He'll sue me.
Neutral Consequences		
Lack of Response/Avoidance (AVD)	The other person fails to respond to, forgets about, ignores, walks away, or avoids the situation.	1) She probably would of left and leave it alone. 2) She might just forget about it. 3) He won't say anything. 4) It wasn't me.
Other - Neutral or Ambiguous Result (NTRL)	The response does not reflect a clear positive or negative result. This includes both items of uncertainty that the response could go either way or responses that indicate a neutral result or no consequence resulting from the response. This also includes when others besides the respondent would take action that is ambiguous and not clearly negative or positive (see Example #5).	1) No consequence. 2) If it could be that could, that could help me. 3) I don't think anything would happen. 4) We'd go on with our day. 5) Somebody would try and ask and come over there and see what was going on. 6) He'll tell me why and I'll agree if, if that was a good reason or not.

Consequence Likelihood Score	**Definition**	**Example**
Instructions: This score assesses the student's ability to identify likely consequences of his or her first response and the predetermined responses. All responses start out with a medium likelihood score of 3 and will either be increased or decreased on a 1 to 5 rating scale based upon the following criteria. When coding you should first determine whether the consequence is logical or whether it is based in fantasy. All responses based in fantasy or extremely unrealistic should automatically be coded as a "1". For consequences that may be difficult to predict due to the involvement of others outside the situation, the coder should consider what would happen in most families or schools. The coder may also find it helpful to consider whether the response and consequence are consistent (i.e., both positive or negative) and the severity of the consequence when considering the rating. *Consequences expressing an ambiguous result, such as using the word "might", should be coded disregarding the ambiguity (e.g. "We might fight" = "We would fight").		
Consequences for Respondent's First Generated Response ***(Similar manuals were used for each provided response)***		
1	Consequence is very unrealistic and is very unlikely to happen. This includes consequences that are illogical or much	*Situation #3* 1) *Response:* Ignore him. *Consequence:* Try to come after me with a knife. And then …

	more extreme than would be expected given the situation. This includes consequences that appear to be based in fantasy.	then I would run away. 2) *Response:* You actually told him to stop. *Consequence:* I would probably get suspended. *Situation #23* 3) *Response:* Try to talk to her about it in private. *Consequence:* I might get in trouble because I'm defending myself
2	Consequence might occur, but seems unlikely given the response.	*Situation #3* 1) *Response:* I ask her wh'd you tell this is my secret. *Consequence:* Probably not being friends. *Situation #23* 2) *Response:* Go up to her and say "what are you talking about?" you know why are you saying things. *Consequence:* It would go well. We'd probably work it out.
3	A consequence that may or may not happen. This includes responses that include a significant amount of uncertainty where the likelihood of the consequence cannot be predicted with the information given, such as consequences that are vague or unclear.	*Situation #3* 1) *Response:* Tell everybody it wasn't true. *Consequence:* I guess they would believe me. 2) *Response:* Did confront him. *Consequence:* Probably broke up into a fight or something. 3) *Response:* Did talk to him. *Consequence:* We might get mad, both of us might get mad. *Situation #23* 4) *Response:* Walk away. *Consequence:* It would go well. We'd probably work it out.
4	This consequence could reasonably occur, but does not rise to the level of "likely" to occur. This also includes consequences that are possible, but more extreme than would be expected without being so extreme as to make them unlikely to occur.	*Situation #3* 1) *Response:* I told her secret. *Consequence:* She might try to fight me. 2) *Response:* Talked to her. *Consequence:* We could just forget about it and not let it happen again. 3) *Response:* You approach him and ask him why he did that. *Consequence:* He might apologize. 4) *Response:* Talked to him in private and asked him not to tell anyone your business. *Consequence:* He'll apologize and we'll become friends again. *Situation #23* 5) *Response:* Tell a teacher what he said about his mom. *Consequence:* He might get in trouble. He might have to go to in school detention or get expelled and get in trouble at

		home.
5	This is a clear, logical, and realistic consequence that is likely to occur.	*Situation #23* 1) *Response:* Showed how tough you are. *Consequence:* We would, we woulda got in an argument. 2) *Response:* Punch this guy. *Consequence:* I'd get in trouble.

Curriculum Vita

Denicia Katherine Holley Titchner, M.S.
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Education

Doctor of Philosophy (Expected: 2013)	Clinical Psychology Specialization: Child Clinical Psychology Virginia Commonwealth University, Richmond, Virginia Doctoral Dissertation: The Relation Between Patterns of Beliefs About Fighting and Social Information-Processing: Differences in Cognitions, Goals, and the Response-Decision Process in Adolescents Advisor: Albert Farrell, Ph.D. GPA: 4.0
Masters of Science 2011	Major: Clinical Psychology Specialization: Child Clinical Psychology Virginia Commonwealth University, Richmond, Virginia Master's Thesis: Developmental Trajectories of Physical and Relational Aggression and Their Relation to Delinquency and Substance Use in Adolescence Advisor: Albert Farrell, Ph.D. GPA: 4.0
Bachelor of Arts 2003	Psychology and English (Double Major) The College of William and Mary, Williamsburg, Virginia

Post Graduate Education & Training

2012-2013	Predoctoral Psychology Internship (APA Accredited) VA Maryland Health Care System/University of Maryland Baltimore Psychology Internship Consortium Supervisors: Nancy Lever, Ph.D., Nicole Evangelista Brandt, Ph.D., Catharine Weiss, Ph.D., & Sharon Stephan, Ph.D.

Honors and Awards

2011 - present	Phi Kappa Phi Honor Society

2013	Highest Biller Award, University of Maryland School Mental Health Program
2011	VCU Department of Psychology Travel Award
2010	Society for the Advancement of Psychology Travel Award
2010	Selected as one of twenty doctoral graduate students to attend the Summer Institute on Youth Violence Prevention at the University of CA, Berkeley.
2009	Departmental and Graduate Student Travel Grants for presentation at the Society for Research on Child Development
2001 - present	Golden Key International Honor Society
2003 – 2005	Apple Award for Excellence in Reading Education
2003	Wrote and received an Educational Reading Grant
2001	Psi Chi National Honor Society (Undergraduate)

Clinical Experience

Psychology Associate July 2012 – July 2013
University of Maryland School Mental Health Program
University of Maryland, Baltimore, Maryland
Supervisor: Nancy Lever, Ph.D.

- Primary School-based Mental Health Clinician and Site Supervisor for the University of Maryland Team (e.g., licensed social worker, child psychiatry fellow, social work intern) at Patapsco Elementary/Middle School in Cherry Hill, Maryland.
- Implement evidence-base individual, group, and family therapies, and crisis management for a variety of academic, behavior, and mental health concerns including Trauma, ADHD, Anxiety, Mood Disorders, and Disruptive Behavior Disorders.
- Collaborate with UMD Child Psychiatry Fellow for student's medication management.
- Clinician for several University of Maryland (Interpersonal Psychotherapy for Depression Adolescents/IPT-A, Motivational Interviewing) and Johns Hopkins University (Structured Psychotherapy for Adolescents Responding to Chronic Stress/SPARCS) evidence-based intervention research projects. Participate in weekly on-going supervision from project developers.
- Conduct teacher and school staff consultation, school-wide professional development, and classroom presentations to promote school-wide prevention and early intervention best practices.
- Students are primarily African American and of low socioeconomic status presenting with complex symptoms and histories, especially exposure to traumatic experiences.

Psychology Associate July 2012 – July 2013
Maryland Psychological Assessment & Consultation Center
University of Maryland, Baltimore, Maryland
Supervisor: Catharine Weiss, Ph.D.

- Conduct comprehensive psychological and psychoeducational assessments for youth ages 5 to 18 for a variety of academic, behavior, and mental health concerns.
- Administration, scoring, and interpretation of assessments, observations, and consultations.

- Write comprehensive evaluation reports summarizing assessment findings, diagnosis, and recommendations for the child/adolescent, family, therapists, and school staff.
- Conduct interactive feedback sessions to share assessment results and recommendations with child/adolescent's family.

Psychology Practicum Student July 2010 – May 2012
Acute Inpatient & Outpatient Therapist
Virginia Treatment Center for Children
Virginia Commonwealth University Medical Center, Richmond, Virginia
Supervisor: Leslie Kimball-Franck, Ph.D.

- Administered evidence-based individual, family, and group therapies to youth who reside on an acute inpatient unit and their families. Primary diagnoses included Trauma, Depression, Mood, Anxiety, Disruptive Behavior, and Psychotic Disorders.
- Conducted case management to facilitate treatment and successful discharge from the hospital.
- Administered evidence-based individual and family outpatient therapy for youth with ADHD, Trauma, Depressive, and Disruptive Behavior Disorders.
- Conducted cognitive, psychological, and personality integrative assessments on children/adolescents.
- Clients represented a broad range of socioeconomic statuses and ethnicities.

Psychology Practicum Student January 2010 – April 2012
Outpatient Therapist, Assessor & Group Facilitator
Virginia's Associated Behavioral Outcomes and Developmental Experts of Virginia (VABODE), Community-Based Mental Health Agency, Richmond, Virginia
Supervisors: Micah McCreary, Ph.D. & Rebecca McCracken, Ph.D.

- Served as a group leader using Aggression Replacement Training with children and adolescents.
- Served as a group leader of a reoccurring 8-week Parent Training Group with youth ages 1 to 15 working on Parent Management Training and Parent-Child Interaction Therapy.
- Participated in the development of both group therapy programs and have served as a supervisor in the training of VABODE staff in running group therapy sessions.
- Provided evidence-based individual therapy, family therapy, and school consultation.
- Conducted comprehensive psychodiagnostic assessments and wrote integrated reports for children and adolescents. Clients represented a broad range of ethnicities and low socioeconomic status.

Body Acceptance Intervention: Group Facilitator March 2010 – June 2010
Virginia Commonwealth University, Richmond, Virginia
Supervisor: Suzanne Mazzeo, Ph.D.

- Served as a group leader for an empirically supported dissonance-based body acceptance intervention for undergraduate university students.

Clinical Interviewer June 2009 – August 2010
The Chesterfield-VCU Adaptation of Depression and Anxiety Psychological Treatments for Children (ADAPT) Project

Virginia Commonwealth University, Richmond, Virginia
Supervisor: Michael Southam Gerow, Ph.D.

- Administered and trained to reliability on the Kiddie-Schedule for Affective Disorders and Schizophrenia (KSADS) and associated intake interviews.
- Conducted with children and their parents who were enrolled in multi-focus therapy in a community mental health clinic for children with comborbid internalizing and externalizing disorders.

Behavioral Specialist & Parent Group Leader March 2009 – May 2011
T.E.E.N.S. Healthy Weight Management Program
Virginia Commonwealth University, Richmond, Virginia
Supervisors: Marilyn Stern, Ph.D. & Suzanne Mazzeo, Ph.D.

- Conducted intakes and provided therapy for obese adolescents participating in a multidisciplinary program with their family in order to work towards weight and health goals.
- Individual and family sessions included providing psychological support and promoting and working through behavioral changes, such as exercise and dieting.
- Co-led a parent group to provide information and discussion regarding parenting, nutrition, physical activity, difficulties with behavior change for their child, and their own behavior change.
- Trained and supervised developing parent group leaders.

Staff Therapist: Autism Clinic Fall 2009 – August 2010
Center for Psychological Services and Development
Virginia Commonwealth University, Richmond, Virginia
Supervisor: Bryce McLeod, Ph.D.

- Served as a staff therapist for the Autism Clinic, which provided empirically supported assessment and treatment serves to children and adolescents with Autism Spectrum Disorders (ASDs) and their families in an outpatient community mental health clinic.

Staff Therapist: August 2008 – August 2010
Center for Psychological Services and Development
Virginia Commonwealth University, Richmond, Virginia
Supervisors: Bryce McLeod, Ph.D. and Katherine Macie, Ph.D.

- Administered empirically supported treatments to child, adolescent, adult, and family clients.
- Utilized diagnostic and behavioral assessments to improve and monitor treatment outcomes.
- The CPSD is an outpatient community mental health clinic serving a diverse population of children, adolescents, and adults that represent a broad range of socioeconomic statuses and ethnicities.

Intelligence Testing Examiner September– October 2009
The Collegiate School, Richmond, Virginia

- Administered the WISC-IV to third grade students as part of the routine intelligence assessment.

- Provided teachers with reports and interpretations of students' cognitive abilities.

Group Facilitator for Drug and Alcohol Awareness Night April 2007
St. Christopher's and St. Catherine's Schools, Richmond, Virginia
- Facilitated a group of middle school students and parents focusing on issues surrounding middle school student's exposure to, understanding of, and approach to drugs and alcohol.

Summer Intern May – August 2002
Shelter House – Family Homeless Shelter, Falls Church, Virginia
- Developed and implemented Festival of HOPE for families living at the homeless shelter.
- Incorporated parent training, support and relaxation for families, and strengthening for family relationships as a part of services offered to families.

Volunteer, Co-leader for Group Therapy September 2001 – May 2002
Avalon Domestic Abuse Shelter
The College of William and Mary, Williamsburg, Virginia
- Co-lead children's group therapy, which was designed to provide psychological support for children who had witnessed and experienced abuse.
- Volunteered and lead events at the shelter's day care center.

Research Experience

Pre-doctoral Psychology Intern July 2012 – July 2013
National Center for School Mental Health (CSMH)
University of Maryland School of Medicine, Baltimore, Maryland
Supervisor: Nicole Evangelista Brandt, Ph.D., Nancy Lever, Ph.D. & Sharon Stephan, Ph.D.
- Serve as a member of the research staff at the Center for School Mental Health, a national resource center for advancing school mental health training, research, policy, and practice.
- Collaborate with Center directors, managers, and researchers on advancing school-based mental health initiatives.
- Write issue briefs, review articles for peer reviewed journals, participate in an examination of the common elements for social emotional learning, and conduct literature reviews and journal and news scans on hot topics in school-based mental health research and the implementation and dissemination of evidence-based practices in schools.
- Coordinate a research project and presentation on family engagement in school mental health.
- Create mental health training modules for educators for the Maryland State Department of Education.
- Assist with the running the School Health Interdisciplinary Program and Annual Conference on Advancing School Mental Health.

Dissertation: January 2011 – August 2013
Beliefs About Fighting & Social Information-Processing
Virginia Commonwealth University, Richmond, Virginia

Supervisor: Albert Farrell, Ph.D.

- Conduct an empirical research study titled: Doctoral Dissertation: The Relation Between Patterns of Beliefs About Fighting and Social Information-Processing: Differences in Cognitions, Goals, and the Response-Decision Process in Adolescents.
- Examine differences in social-information processing patterns between youth with varying patterns of belief about aggression, such as beliefs against aggression, beliefs supporting aggression, and beliefs that fighting is sometimes necessary.
- This study uses two innovative measures of social information-processing skills that use relevant and difficult situations for youth and allow them to respond in real-time as they experience the situation.

Master's Thesis: Developmental Trajectories of Aggression August 2008 – April 2011
Virginia Commonwealth University, Richmond, Virginia
Supervisor: Albert Farrell, Ph.D.

- Conducted an empirical research study titled: Developmental Trajectories of Physical and Relational Aggression and Their Relation to Delinquency and Substance Use in Adolescence.
- Examined how physical and relational aggression were different based upon their trajectories over time and how those trajectories predicted both a trajectory and subsequent changes in Delinquency and Substance Abuse.
- Utilized data from the Multisite Violence Prevention Project.

Research Assistant August 2007 – June 2012
Clark-Hill Institute for Positive Youth Development (CHIPYD)
Academic Center of Excellence in Youth Violence Prevention
Virginia Commonwealth University, Richmond, Virginia
Supervisor: Albert Farrell, Ph.D.

- Served as a research assistant on large-scale, grant-funded, community- and school-based research projects on risk and protective factors associated with youth violence and working on improving interventions to prevent youth violence.
- Coordinated and assisted with the development of novel measures of problem solving and aggressive and prosocial schemas, including providing training for and supervising interviewers within middle schools.
- Performed qualitative coding and analyses utilizing a qualitative research computer program on interviews with middle-school students, conducted literature searchers for studies and manuscripts, performed quantitative analyses using SPSS, SAS, and MPlus, organized and updated data sets utilizing statistical software, assisted with IRB submissions and bi-annual grant reviews, and collaborated on manuscripts and presentations.
- Worked as a part of a team to implement and assess the fidelity of a school-based violence prevention program and served as an interviewer and lead supervisor for assessments within the Richmond and Chesterfield Public School systems. These interviews are being used to develop and evaluate effective violence prevention programs for high-risk adolescents, such as assessing social information-processing skills with a semi-structured interview.

Research Assistant July 2005 – July 2007
Emory Women's Mental Health and Epilepsy Programs
Departments of Psychiatry and Neurology
Emory University, Atlanta, Georgia
Supervisors: Page Pennell, M.D. and Zachary Stowe, M.D.

- Served as a research assistant for several large-scale, grant-funded research projects investigating the impact of mental illness, epilepsy, and medication on the perinatal period and babies' outcome.
- Coordinated the Epilepsy and Childbirth Project of a NIMH SCOR Grant.
- Other responsibilities included writing and assisting with articles for publication in scientific research journals, coordinating and implementing study duplication at Grady Memorial Hospital, administering semi-structured interviews, collecting and processing blood and urine samples as a certified phlebotomist, and assisting in data collection, coding, and analyses.
- Assisted in the submission of grant proposals, including coordinating a TRCBS grant submission.
- Served as a clinical interviewer by conducting a variety of clinical interviews and phone intakes, which determined eligibility for the clinic and research studies.
- Administered and trained to reliability on the Structured Clinical Interview for DSM-IV, Hamilton Rating Scale for Depression, Mania Rating Scale, Yale-Brown Obsessive Compulsive Scale, Panic Disorder Severity Scale, and other related mood and anxiety assessments. This experienced resulted in over 1,100 hours of administering clinical interviews.

Literacy Committee 7th Grade Chair August 2003 – July 2005
Kennedy Middle School, Atlanta, Georgia

- Served on the literacy committee, which was formed to analyze problems with students' low reading abilities and suggest research-based methods of improving their reading skills.
- Assisted with development and implementation of a school-wide development plan to improve students' reading and achieve student success, and analyzing student data and test scores.

Student Researcher May 2002 – May 2003
Independent Psychology Research
College of William and Mary, Williamsburg, Virginia
Supervisor: Glenn Shean, Ph.D.

- Conducted an independent investigation of depression and interpersonal relationships within college students through examining the development of the relationship between freshmen roommates.
- Completed an APA style write-up and research proposal.

Student Researcher August – December 2002
Advanced Research in Personality Theory
College of William and Mary, Williamsburg, Virginia
Supervisor: Carolyn Parish, Ph.D.

- Designed, conducted, and analyzed an investigation of the relationship of self-esteem, self-monitoring, and the importance of physical attractiveness.
- Wrote and presented an APA style research paper.

Research Assistant January – May 2000
Psychology Anger Research
College of William and Mary, Williamsburg, Virginia
Supervisor: Michael Griffin, M.A.

- Completed research and data collection, data entry, and data analysis for a Masters Student investigating the impact of an audio anger manipulation on college undergraduates.

Teaching Experience

Guest Instructor March 2013
Professional Development for Psychology and Social Work Graduate Students
University of Maryland School Mental Health Program, Baltimore, Maryland

- Co-instructed professional development on the use of evidence-based therapies, family engagement, and crisis management strategies in school mental health.
- Professional development included instruction, practice, and discussion of best practices and students challenging cases.

Teach for America August 2003 – July 2005
Kennedy Middle School, Atlanta, Georgia

- Served as a member of a national service corps of outstanding recent college graduates of all academic majors who commit two years to teach in an under-resourced urban public school.

Supervision Experience

Graduate Student Supervisor August 2012 – June 2013
University of Maryland School Mental Health Program, Baltimore, Maryland
Supervisor: Nancy Lever, Ph.D.

- Provide supervision to graduate student in the University of Maryland School Of Social Work.
- Supervision includes identifying areas of strength and growth, reviewing evidence-based individual, family, and group therapies and general clinical skills, assisting with crisis management, and providing support and guidance on other professional issues.

Graduate Student Supervisor August 2010 – April 2012
Virginia's Associated Behavioral Outcomes and Developmental
Experts of Virginia (VABODE), Community-Based Mental Health Agency
Richmond, Virginia
Supervisor: Rebecca McCracken, Ph.D.

- Provided training and supervision to practicum students from Virginia Commonwealth University's Clinical and Counseling Psychology Doctoral Programs and an in-home counselor at VABODE.

- Supervision and training focused on the implementation of Aggression Replacement Training Child and Adolescent Groups and Parent Training Groups.

Graduate Student Supervisor August 2010 – May 2011
T.E.E.N.S. Healthy Weight Management Program
Virginia Commonwealth University, Richmond, Virginia
Supervisor: Suzanne Mazzeo, Ph.D.

- Trained and supervised developing parent group leaders, including observation, role-plays, and feedback regarding clinical skills and therapy implementation.

Research Coordinator and Supervisor February 2008 – June 2010
Clark-Hill Institute for Positive Youth Development (CHIPYD)
Academic Center of Excellence in Youth Violence Prevention
Virginia Commonwealth University, Richmond, Virginia
Supervisor: Albert Farrell, Ph.D.

- Provided interviewer training and supervision to undergraduate and graduate students at Virginia Commonwealth University who were conducting semi-structured interviews in Richmond City and Chesterfield County middle schools.
- Led group training sessions and provided one-one-one supervision on interviewing techniques, general clinical skills, and the interview protocol.
- One-on-one supervision included feedback on audio tapes of interviews and role-plays focused on interviewing techniques and clinical skills.

Presentations & Publications

Peer-Reviewed Journal Articles:

Galanti, M., Newport, D.J., Pennell, P.B., **Titchner, D**., Newman, M., Knight, B.T., & Stowe, Z.N. (2009). Postpartum depression in women with epilepsy: Influence of antiepileptic drugs in a prospective study. *Epilepsy & Behavior*, 16(3), 426-430.

Pennell, P.B., Peng, L., Newport, D.J., Ritchie, J.C., Koganti, A., **Holley, D.K.,** Newman, M., & Stowe, Z.N. (2008). Lamotrigine in pregnancy: Clearance, therapeutic drug monitoring, and seizure frequency. *Neurology, 70*, 2130-2136.

Manuscripts in Preparation:

Farrell, A.D., **Titchner, D**., Yaros, A., & Sullivan, T.N. (2013). Response generation deficits in problem solving skills of aggressive and victimized adolescents. Manuscript in preparation.

Farrell, A.D., **Titchner, D**., Yaros, A., & Sullivan, T.N. (2013). Deficits in evaluation of responses to peer problem situations in aggressive and victimized adolescents. Manuscript in preparation.

Titchner, D.K. & Farrell, A. D. (2013). Developmental trajectories of physical and relational aggression and their relation to externalizing problems in adolescence. Manuscript in preparation.

Web-based articles:

Cammack, N.L., **Titchner, D**., Joseph, R., Evangelista Brandt, N., Stephan, S., & Lever, N. (In press). Integrating the treatment of co-occurring disorders among school mental health programs. Baltimore, MD: Center for School Mental Health, Department of Psychiatry, University of Maryland School of Medicine.

Paper Symposia:

Holley, D.K., Pennell, P.B., Newman, M.L., Newport, D.J., Koganti, A., Beach, A., Stowe, Z.N. (2006, April). *Depressive Symptoms during Pregnancy and the Postpartum Period in Women with Epilepsy.* Paper Symposium for American Academy of Neurology 58th Annual Meeting, San Diego, California.

Poster Presentations:

Titchner, D.K., Pugh, K.L., Bettencourt, A., & Farrell, A. (June 2012). *The Influence of Parental Messages and Delinquent Peers on Social Information-Processing: Whose Influence Matters More?* Poster presentation at the Society for Prevention Research Annual Meeting, Washington, D.C.

Mehari, K., Mays, S., Wheat, E., Pugh, K.L., **Titchner, D.K.**, Kramer, A., & Farrell, A. (June 2011). *Relevance of a Violence Prevention Program for Urban Middle School Students: A Qualitative Study of Participants' Perceptions*. Poster presentation at the Society for Prevention Research Annual Meeting, Washington, D.C.

Titchner, D.K., & Farrell, A. (June 2011). *Developmental Trajectories of Physical and Relational Aggression and Their Relation to Delinquency and Substance Use in Adolescence*. Poster presentation at the biennial meeting of the Society for Prevention Research, Washington, D.C.

Pugh, K., Bettencourt, A., **Titchner, D.**, Mehari, K., & Farrell, A. (June 2010). *An Evaluation of the Application of the Articulated Thoughts in Simulated Situations Paradigm to Urban African American Adolescents.* Poster presentation at the Society for Prevention Research Meeting, Denver, CO.

Titchner, D.K., Pugh, K.L., Mehari, K.R., & Farrell, A.D. (June 2010). *Development and Evaluation of a Measure of Social Problem Solving Skills for Urban Adolescents.* Poster presentation at the 18th annual meeting of the Society for Prevention Research, Denver, CO.

Titchner, D.K., & Farrell, A. (March 2010). *Developmental Trajectories of Physical and Relational Aggression and Their Relation to Delinquency and Substance Use in Adolescence*. Poster presentation at the biennial meeting of the Society for Research on Adolescence, Philadelphia, PA.

Titchner, D. K., Pugh, K.L., Mays, S.A., Bettencourt, A. F., Kramer, A. M., & Farrell, A.D.

(April 2009). *Development and Evaluation of an Interview-based Measure of Social-Cognitive Processes Related to Aggression.* Poster presentation at the biennial meeting of the Society for Research on Child Development, Denver, CO.

Holley, D.K., Newport, D.J., Knight, B.T., Stowe, Z.N. (May 2007). *The Effects of Childhood Trauma on Obstetrical Outcome.* Poster presentation for the American Psychiatric Association Annual Meeting, San Diego, CA.

Friedland, J.P., Pennell, P., Koganti, A. **Holley, D.K.**, Newman, M, Newport, D.J., Stowe, Z.N. (April 2007). *Pregnancy Outcomes for Women on Antiepileptic Drugs: A Prospective Observational Study.* Poster presentation for American Academy of Neurology 59th Annual Meeting, Boston, MA.

Holley, D.K., Pennell, P.B., Newport, D.J., Ritchie, J.C., Newman, M.L., Stowe, Z.N. (December 2006). *Pregnancy-induced Alterations in Oxcarbazepine (MHD) Clearance and Placental Passage.* Poster presentation for American Epilepsy Society 60th Annual Meeting, San Diego, California.

Pennell, P.B., Koganti, A., Peneg, L., Newman, M., **Holley, D.**, Stowe, Z.N. (December 2006). *Seizure Frequency in Women on LTG during Pregnancy using Therapeutic Drug Monitoring.* Poster presentation for American Epilepsy Society 60th Annual Meeting, San Diego, California.

Holley, D.K., Pennell, P.B., Newport, D.J., Newman, M.L., Ritchie, J.C., Koganti, A., Stowe, Z.N. (May 2006). *Mood Stabilizers and Depression in the Postpartum Period.* Poster presentation for American Psychiatric Association 159th Annual Meeting, Toronto, Canada.

Professional Service & Volunteer Work

Manuscript Reviewer July 2012 – July 2013
Advances in School Mental Health Promotion
Journal of Youth and Adolescence
School Mental Health

Member of the Haiti Committee April 2011 – June 2012
Cathedral of the Sacred Heart - Richmond, VA

- Provided insight of research methods and best educational practices to education subcommittee, focused on assessing and addressing factors that impact students' success and continuation in school.
- This committee focused on assuring the continuation of an elementary school in Carissade, Haiti and the success of students attending the elementary and secondary schools.

Graduate Student Mentor August 2010 – May 2011

Alcohol Awareness Family Group Discussion Facilitator April 2007
St. Christopher's School of Richmond, Virginia

Professional Organizations

American Psychological Association, Division 53 (APA)
Association for Behavioral and Cognitive Therapies (ABCT)
Society for Prevention Research (SPR)
Society for Research in Adolescence (SRA)

Relevant Graduate Coursework

Research Methods in Clinical Psychology	Adult Psychopathology
General Linear Models I and II	Minority Issues in Mental Health
Principles of Psychological Measurement	Biological Basis of Behavior
Individual Tests of Intelligence	Learning and Cognition
Diagnostic and Behavioral Assessment	Ethics
Clinical Assessment of Childhood Disorders	Family Therapy
Advanced Child Psychopathology	Introduction to Clinical Interviewing
Child and Adolescent Psychotherapy	Social Psychology
Developmental Processes	

Specialized Training

Cognitive Behavioral Intervention for Trauma in Schools (CBITS)	November 2012
Life-Skills Program Training	August 2012
Structured Psychotherapy for Adolescents Responding to Chronic Stress (SPARCS): Initial Training and Ongoing Supervision	August 2012
Interpersonal Psychotherapy for Depressed Adolescents (IPT-A): Initial Training and Ongoing Supervision Trainer: Laura Mufson, Ph.D.	August 2012
Autism Diagnostic Observation Schedule, Second Edition (ADOS-2)	July, August 2012
Family Check-Up: University of Oregon Child & Family Study Center Trainers: Tom Dishion, Ph.D. & Elizabeth Stormshak, Ph.D.	July 2012
Trauma Focused Cognitive Behavioral Therapy (TF-CBT)	July 2012
Olweus Bullying Prevention Program Training	October 2011
Rorschach Inkblot Test Training	July 2010, 2011
Suicide Assessment, Prevention, and Treatment Training	July 2010, 2011
Eating Disorders Examination Interview Training	January 2011

Summer Institute on Youth Violence Prevention	August 2010
Therapeutic Options (TOVA) Training	August 2010
Therapeutic Crisis Intervention: Crisis Prevention and Management	August 2010
Collaborative Problem Solving Training	July 2010
Research Interviewer Training: Kiddie-Schedule for Affective Disorders and Schizophrenia (KSADS)	June 2009
Multi-level Model Training	May 2009
Strategies for Enhancing School Mental Health in Youth	May 2009
Research Interviewer Training: Structured Clinical Interview for DSM-IV (SCID)	July 2005