2003

Aggressive boys' attributions of emotions and intentions in social situations.

Wendy Manel

University of Windsor

Follow this and additional works at: https://scholar.uwindsor.ca/etd

Recommended Citation
https://scholar.uwindsor.ca/etd/916

This online database contains the full-text of PhD dissertations and Masters' theses of University of Windsor students from 1954 forward. These documents are made available for personal study and research purposes only, in accordance with the Canadian Copyright Act and the Creative Commons license—CC BY-NC-ND (Attribution, Non-Commercial, No Derivative Works). Under this license, works must always be attributed to the copyright holder (original author), cannot be used for any commercial purposes, and may not be altered. Any other use would require the permission of the copyright holder. Students may inquire about withdrawing their dissertation and/or thesis from this database. For additional inquiries, please contact the repository administrator via email (scholarship@uwindsor.ca) or by telephone at 519-253-3000ext. 3208.
Aggressive Boys' Attributions of Emotions and Intentions in Social Situations

by

Wendy Manel

A Thesis
Submitted to the Faculty of Graduate Studies and Research through the Department of Psychology in Partial Fulfillment of the Requirements for the Degree of Master of Arts at the University of Windsor

Windsor, Ontario, Canada

2003

© 2003 Wendy Manel
The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.
Abstract

This study compared aggressive and non-aggressive boys' attributions of emotions and intentions in social situations. Forty males aged 9-12 years of age participated in this study. The aggressive group (n=20) was referred from three different children's mental health centers. The non-aggressive group (n = 20) consisted of boys recruited from the community. Participant's parents completed two measures assessing behaviour problems in childhood. Participants were presented with 12 vignettes in which one child was involved in behaviour, which resulted in a negative outcome for another child. For half of the stories participants were asked to imagine themselves as the story victim and for the other half they were asked to imagine themselves as the story victimizer. Participants were then questioned regarding the characters' intentions and emotions. In addition participants were administered tasks assessing intelligence and a self-report assessing behaviour problems. Results revealed differences between groups with respect to their intent attributions when they were asked to imagine themselves as the story victimizer. With respect to emotion attributions, compared to non-aggressive boys, aggressive boys were less likely to attribute mixed emotions to story victimizers. Although non-aggressive participants attributed both inappropriate and appropriate emotions simultaneously to story victimizers, aggressive participants attributed either inappropriate or appropriate emotions. Results are discussed in terms of their implications for social and emotional information processing research.


Acknowledgements

This study would not have been possible without the contributions and assistance from a number of individuals. First and foremost, I would like to thank my advisor Dr. Rosanne Menna for her guidance, support, enthusiasm and patience throughout this study. Thank you for all of your helpful suggestions and for your continued encouragement and reassurance (especially during some of the “tougher” moments). I am very grateful for your availability and input, without which this study would not have been completed.

I would also like to thank the other members of my committee, Dr. Sharon McMahon (Nursing) and Dr. Mary Broga (Psychology), for their support and valuable suggestions throughout this project.

A number of agencies were involved in making this project a reality. I would like to thank Dr. Mary Broga and the staff and Windsor Regional Children’s Centre. Thank you to Janet Kelly, Kathy Morneau, Pat Thomas and the staff at Children’s Achievement Centre. I would also like to thank Pat Peloso, Dr. Sharon Horlick and Angela Lukas at Maryvale Adolescent and Family Services. I am grateful for your support and assistance with this project. Working with you has truly been a wonderful experience.

My sincerest thanks to the children and parents who participated in this study. Without your help, this study would not have been possible.

I am grateful to Dr. Charles Helwig for his valuable suggestions at the early stages of project development and who first sparked my interest in children’s sociomoral development. I would especially like to thank Ryan Stanga for his brilliant statistical savvy, Dana Barratt for the marathon late night in the lab, Jeff Cochran for his quick coding skills, and Shannon Zaitsoff for proofreading and answering numerous questions. In addition, I would like to thank Barb Zakoor for her patience, encouragement and reassurance. Thanks Barb for helping to keep me sane!

Finally, I would like to thank my parents and my brother, my extended family, and my friends for their support and encouragement throughout my academic career. I am very grateful to have such a wonderful support system and would not be where I am today without you.
# Table of Contents

Abstract ................................................................................................................... iii

List of Tables ........................................................................................................ vii

Chapter I: Introduction ......................................................................................... 1
  General Context and Objectives of the Present Study ........................................ 1
  Social-Information Processing .......................................................................... 4
  Intent attributions of aggressive children ....................................................... 7
  Aggressive children's outcome expectancies .................................................. 12
  Developmental lag hypothesis ........................................................................ 13
  Emotion Attributions ....................................................................................... 16
  Emotional-consequences and affect-event associations .................................. 16
  Children's emotion attributions about victimizers .......................................... 18
  Emotion attributions of aggressive children .................................................. 25
  Summary of the problem and objectives of the present study ....................... 29
  Specific Hypotheses ......................................................................................... 30

Chapter II: Method ............................................................................................... 32
  Participants ....................................................................................................... 32
  Procedure ........................................................................................................ 36
  Measures .......................................................................................................... 36
  Coding Systems for Interview Responses ...................................................... 39

Chapter III: Results ............................................................................................. 43
  Intent Attributions .......................................................................................... 43
    Preliminary analyses ..................................................................................... 43
    Intent attributions: Victim role ................................................................. 43
    Intent attributions: Victimizer role ............................................................ 45
  Emotion Attributions ....................................................................................... 50
    Preliminary analyses ..................................................................................... 51
    Emotion attributions: Victim role ............................................................... 54
    Emotion Attributions: Victimizer role ........................................................ 54
  Emotion Justifications ...................................................................................... 61

Chapter IV: Discussion ......................................................................................... 64
  Intent Attributions .......................................................................................... 64
  Emotion Attributions ....................................................................................... 73
  Emotion Justifications ...................................................................................... 78
  Limitations of the Present Study ................................................................... 79
  Concluding Remarks and Directions for Future Research ......................... 81

References ........................................................................................................... 83
Appendix A: Emotion and Intention Attribution Task.................................88
Appendix B: Background Information Questionnaire..................................93
Appendix C: Emotion Justification Coding System......................................95
Vita Auctoris..............................................................................................97
# List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td>Characteristics of Aggressive and Non-aggressive Comparison Sample</td>
<td>34</td>
</tr>
<tr>
<td>Table 2</td>
<td>Frequencies of Intention Categories by Story Type and Group, Regardless of Role</td>
<td>44</td>
</tr>
<tr>
<td>Table 3</td>
<td>Frequencies of Intention Categories by Story Type and Group, Victim Role Only</td>
<td>46</td>
</tr>
<tr>
<td>Table 4</td>
<td>Frequencies of Intention Categories Story Type and Group, Victimizer Role Only</td>
<td>48</td>
</tr>
<tr>
<td>Table 5a</td>
<td>Frequencies of Victim Emotion Attributions by Intention Type and Group, Regardless of Role</td>
<td>52</td>
</tr>
<tr>
<td>Table 5b</td>
<td>Frequencies of Victimizer Emotion Attributions by Intention Type and Group, Regardless of Role</td>
<td>53</td>
</tr>
<tr>
<td>Table 6a</td>
<td>Frequencies of Victim Emotion Attributions by Intention Type and Group, Victim Role Only</td>
<td>55</td>
</tr>
<tr>
<td>Table 6b</td>
<td>Frequencies of Victimizer Emotion Attributions by Intention Type and Group, Victim Role Only</td>
<td>56</td>
</tr>
<tr>
<td>Table 7a</td>
<td>Frequencies of Victim Emotion Attributions by Intention Type and Group, Victimizer Role Only</td>
<td>57</td>
</tr>
<tr>
<td>Table 7b</td>
<td>Frequencies of Victimizer Emotion Attributions by Intention Type and Group, Victimizer Role Only</td>
<td>58</td>
</tr>
<tr>
<td>Table 8</td>
<td>Frequencies of Victim Justifications by Story Type and Group</td>
<td>62</td>
</tr>
<tr>
<td>Table 9</td>
<td>Frequencies of Victimizer Justifications by Story Type and Group</td>
<td>63</td>
</tr>
</tbody>
</table>
Chapter 1

Introduction

General Context and Objectives of the Present Study

Over the past few years there has been increased interest in the aggressive behaviour of children (Kingsbury, Lambert, & Hendrickse, 1997). Childhood aggressive behaviour is highlighted in the media, and many schools have adopted a zero-tolerance policy against aggression and delinquent behaviour.

Aggressive children are described as having poor self-reflection and emotion regulation. They have little frustration tolerance and quickly become upset. They demonstrate chronic non-compliance and extreme tantrums and aggressiveness. They act out aggressively if disciplined by a caregiver or if intruded upon by peers. These children are argumentative and stubborn and they have not adequately developed self-control (Campbell, 1995; Dishion, French, & Patterson, 1995; Menna & Landy, 2001; Offord, Adler, & Boyle, 1986).

There is evidence to suggest that many of the behaviours associated with aggressive children are overlearned through repeated transactions over time (Dishion et al., 1995). Researchers have suggested that aggression and antisocial behaviour in childhood is consistent across contexts and tends to remain stable over time (Dishion et al., 1995). Moreover aggression in childhood has been linked to later delinquency and conduct problems (Dishion et al., 1995; Richters & Cicchetti, 1993a; Vitaro, Gendreau, Tremblay, & Oligny, 1998).

Although research has identified possible predictors, correlates, and trajectories of childhood aggressive behaviour, little information is known about why the behaviour of aggressive children is so resistant to change (Richters & Cicchetti, 1993a). The psychological factors associated with aggression may be an important key in understanding the resilience of
aggressive behaviour. As discussed previously, aggressive children experience difficulties in social situations. This group of children also has difficulties with emotional information, both in regulating their own emotions and with interpreting the emotions of others (Arsenio & Fleiss, 1996; Richters & Cicchetti, 1993b). Children’s aggressive behaviour may be attributable to deficient or distorted social and emotional cognitions about the world. It is important to understand the way in which aggressive children process social and emotional information so that an effort can be made toward designing effective intervention programs for these children.

With respect to social information processing, an examination of the psychological factors underlying maladaptive behaviours may provide important insight into problematic processing that may influence aggressive children’s disruptive and antisocial behaviour. An examination of the way in which these children interpret social situations may provide useful information regarding their processing difficulties.

Few studies have explored the emotional information processing ability of aggressive children. One particular area in need of investigation is aggressive children’s ability to interpret and accurately attribute emotions to others. This area of investigation is crucial as aggressive children inflict harm on others; thus, it is important to identify whether these children are able to acknowledge the impact of their behaviour on others. Further, it is important to explore the role of these children’s emotion attributions during the initial processing of social information. Initial attributions about other’s emotions can influence subsequent social information processing; therefore, it is important to determine if aggressive children are experiencing difficulties at the initial stages of processing emotional information.

The present study has three objectives. The first is to examine and compare the ability of aggressive boys and non-aggressive boys to accurately identify and interpret emotional cues in
social situations. Specifically, the present study is designed to examine these two groups of boys and their emotion attributions in both sociomoral situations, (i.e., situations in which the behaviour of one individual has potential negative consequences to either the self or others) and prosocial situations (i.e., those in which the behaviour of one individual has potential positive outcomes for either the self or others, and that not behaving does not produce negative consequences). Situations involving either moral (e.g., victimization) or prosocial (e.g., helping or sharing) events were chosen to be studied because they tend to be “affectively charged” (Arsenio & Lover, 1995, p.89) and are therefore likely to elicit emotion attributions.

The second objective of the present study is to contrast the ways in which aggressive and non-aggressive boys process social information. Although there is ample amount of research investigating aggressive and non-aggressive children’s social information processing, little research has specifically investigated clinic-referred aggressive children; thus, it is necessary to examine and compare this group’s abilities at the initial steps of the processing sequence. The present study examines boy’s interpretation of situational cues. Although there are many interpretative mechanisms involved at this step of processing (Crick & Dodge, 1994), this study focuses on boys’ attributions of other’s intentions in social situations. This area is targeted for investigation because children’s attributions about another person’s intentions can both influence, and be influenced by, their interpretations and attributions about one’s emotions.

The third objective of the present study is to examine the relation between boys’ attributions of emotions and intentions. The present study seeks to investigate whether boys’ attributions of emotion are related to their attribution of intention. The first section of the literature review primarily pertains to research related to children’s social information processing
while the second half of the review pertains to children’s ability to interpret and attribute emotions to others.

Social Information-Processing

Over the past few decades, researchers have begun to examine the way in which aggressive children process social information. An example of such work is that of Crick and Dodge (1994). These researchers have put forward a model that consists of a six-step sequence of social information processing that is related to children’s social adjustment. The model is based on the premise that social cognitions lead to behaviour, which in turn leads to social competence. These authors contend that children process social information via a sequential process of encoding, interpreting, and responding to information coming from social situations.

According to Crick and Dodge (1994), children enter social situations with mental representations of past social experiences. Input is presented to them in the form of an array of cues and children selectively focus on specific situational cues (step 1) and rely on stored situational memory or schemas to help interpret those cues (step 2). Once the cues are interpreted, a goal or desired outcome is selected (step 3) and children then access possible situational responses from memory or create new response options for novel events (step 4). Children then evaluate and select the most favourable response option (step 5). As with the previous steps, these authors propose that a number of independent processes (e.g., outcome expectancies and evaluation of self-efficacy) are involved in the evaluation and selection of a response option. The final step in the process is the behavioural enactment of the chosen response (step 6). Once the behaviour has been carried out, it is proposed that children will incorporate social reactions to their behaviour into their schema, which will in turn influence future behaviour.
Crick and Dodge (1994) propose that, with repeated social interactions, social information processing becomes more efficient and rigid, even if the processing is maladaptive or problematic. Research has explored different aspects of this social information processing model in both aggressive and non-aggressive children, and has provided evidence which suggests that socially maladjusted children have difficulties at various steps in the processing of social information (see Crick & Dodge, 1994, for a review). For example, a study by Quiggle, Garber, Panak and Dodge (1992) found that aggressive children showed a hostile attributional bias (step 2 in Crick and Dodge's, 1994 model), were more likely to condone the use of aggressive behaviour (step 5), and indicated that aggression would be an “easy” behaviour for them (step 5 and step 6).

The model proposed by Crick and Dodge (1994) provides a framework from which to evaluate specific areas where children may be having difficulty processing social information, however it is limited in its description of the role that emotions play in guiding each step of the process. These authors identify emotion as an important aspect at every step of the model and they discuss the role of emotion in terms of the child’s internal arousal influencing processing. One shortcoming of this work however, is that although they acknowledge the role of emotion in cognition, these authors fail to empirically examine emotion and it's relation to social information processing. Moreover, “emotions also have interpersonal regulative functions” (Bretherton, Fritz, Zahn-Waxler, & Ridgeway, 1986, p.530); thus, in addition to attending to their own internal state, children’s social information processing may be guided by the processing of the emotional states of others. For example, in an ambiguous situation, children may attend to and encode another person’s emotional state as a cue for how to interpret the situation (Bretherton et al., 1986). This emotional information is incorporated into a child’s
situational schema, becoming part of their cognitive representation of an event (Arsenio & Lover, 1995), and can have a strong impact in guiding the processing of future situations.

In their review of literature examining information processing in both socially competent and socially maladjusted children, Crick and Dodge (1994) identify three indices of social maladjustment frequently employed in the literature. The first index is peer acceptance, the second is aggression and the third is withdrawal. Children who are considered socially maladjusted are “rejected by their peers, engage in aggression frequently or withdraw from social contact” (p.82). Thus, a distinction is made in the literature between aggressive and withdrawn children. The term ‘maladjusted’ in the social information processing literature can therefore refer to either rejected-aggressive children or rejected-withdrawn children. As the present study focuses on aggressive children, the proceeding review will concentrate exclusively on the findings related to rejected-aggressive children, rather than rejected-withdrawn children.

The majority of the studies examining the social information processing of aggressive children have employed teacher and peer nominations as a measure of aggressiveness (Crick & Dodge, 1994). One problem with this method of defining aggression is that it is context specific; it only focuses on behaviour in the school and does not account for behaviour at home. Moreover, although these groups are important to study, little research has examined clinic-referred aggressive children. It is important to examine clinic-referred aggressive children in order to gain a better understanding of this population as they are likely to be the individuals who present for treatment.

Intent attributions of aggressive children. Much research on children’s social information-processing abilities has focused on the initial steps of Crick and Dodge’s (1994) model (e.g., encoding and interpretation). A number of studies have compared socially adjusted
and aggressive children and have found that aggressive children display a hostile attributional bias in ambiguous situations (e.g., Dodge, 1980; Dodge, Murphy, & Buschsbaum, 1984; Feldman & Dodge, 1987; Nasby, Hayden, & DePaulo, 1980). Aggressive children are more likely than their non-aggressive peers to attribute hostile intentions to an individual who has caused a negative outcome, despite the fact that the individual’s actual intentions were benign (e.g., the outcome occurred accidentally). These attributions have been found in both hypothetical and “real life” situations (e.g., Dodge, 1980).

A study by Dodge (1980) for example, examined the intent attributions of aggressive and non-aggressive boys in each of three different grades (2, 4, and 6). In the first part of the study boys were exposed to a negative outcome during a puzzle-making task for which they could win a prize. The boys were led to believe that a peer (in a different room) destroyed the boy’s puzzle. The unseen peer was heard (over a speaker) to display either hostile, benign, or ambiguous intent. Boys were then provided with the opportunity to “retaliate” by being left alone with the peer’s puzzle. Dodge found that both aggressive and non-aggressive boys retaliated against their peer in the hostile intent condition. In the benign condition, both aggressive and non-aggressive boys were more likely to refrain from aggression. However, group differences emerged in the ambiguous intent condition: Aggressive boys were more likely than their non-aggressive peers to behave aggressively.

In the second part of Dodge’s (1980) study, boys were presented with hypothetical vignettes. The stories involved situations in which a peer caused a negative outcome for the target child himself. The story was worded such that the peer’s intentions were ambiguous. The results of the study revealed that aggressive boys were more likely than non-aggressive boys to attribute hostile intentions to the peer. Moreover, aggressive boys were also more likely than
non-aggressive boys to respond that they would react aggressively to peers with hostile intentions.

The results of this study suggest that aggressive boys are more likely than their non-aggressive peers to attribute hostile intentions to others in ambiguous situations and are more likely to react aggressively to these situations. A number of studies have replicated these findings (e.g., Dodge & Somberg, 1987; Feldman & Dodge, 1987; Quiggle et al., 1992). Moreover, studies have shown that this attributional bias is exacerbated under conditions of threat to the self (Dodge & Somberg, 1987) and is not influenced by the child’s relationship to the individual whose behaviour is being interpreted (Sancilio, Plumert, & Hartup, 1989). Further, studies have indicated that aggressive boys not only display a hostile attributional bias, they are also inadequate at accurately interpreting other’s intentions (e.g., prosocial intention) in a variety of situations (e.g., Dodge & Somberg, 1987; Nasby et al., 1980).

Few studies have examined the intent attributions of clinic-referred aggressive children (Dodge, Price, Bachorowski, & Newman, 1990). In fact, a recent meta-analysis examining the relation between intent attributions and aggressive behaviour (Orobio de Castro, Veerman, Koops, Bosch & Monshouwer, 2002), included 41 studies of which only 7 studies included a sample of referred children. Moreover, the studies that were included in the “referred” category included children referred to any type of intervention (e.g., special education, psychiatric care, prison, etc.). Thus, few studies have explicitly examined the social information processing of clinic-referred aggressive children. This is an important population to investigate however, as clinic referred children are the ones that would be exposed to, and thus benefit the most from treatment programs aimed toward addressing distorted cognitions.
A study by Dodge et al. (1990) examined hostile attributional biases in severely aggressive adolescent males who were incarcerated in a maximum-security prison for juvenile offenders. These authors hypothesized that attributional biases would be related to ratings of undersocialized aggressive conduct disorder (DSM-III, American Psychiatric Association, 1980). The results of the study indicated that a hostile attributional bias in this population was positively related to level of severity of undersocialized conduct disorder, measures of reactive aggression and to interpersonally violent crime. Moreover, a positive relation was found between hostile attributions and number of interpersonally violent crimes committed. Thus, the more severely aggressive the male adolescent was, the more likely he was to possess a hostile attributional bias. This effect held even when intelligence, SES and race were statistically controlled.

Although correlational in nature, the results of Dodge et al.’s (1990) study suggest that as severity of aggressive and antisocial behaviour increases, so too does an individual’s difficulty in correctly interpreting and processing social information. In fact, the meta-analysis by Orobio de Castro et al. (2002) examining the relation between hostile attribution of intent and aggressive behaviour, found that effect sizes covaried with the range in severity of aggression. Specifically, larger effect sizes were found for studies that included more severely aggressive children. However, it should be noted that the majority of the studies included in the meta-analysis included non-referred children. Moreover, the majority of the studies failed to report scores on standardized measures of behaviour problems making it difficult to ascertain accuracy of severity ratings. Nonetheless, the study provides initial support for the suggestion that severity of aggression is positively related to social information processing difficulties. It is unknown whether these information processing difficulties cause the aggressive behaviour or are the result of the behaviour; however, the relationship is likely to be reciprocal in nature (Dodge et al.,
1990). Thus, related to the present study, based on the literature it is predicted that a robust hostile attributional bias will be found, given the fact that the aggressive boys in this study will include clinic-referred aggressive boys. It is predicted that aggressive boys will be more likely than age matched non-aggressive boys, to attribute hostile intentions to story characters in ambiguous situations.

There are a number of limitations of the intent attribution studies that warrant discussion. Specifically, there has been a lack of consistency in the literature with respect to the methodologies employed to assess intent attributions (Orobió de Castro et al., 2002). For example, in order to assess intent attributions, one study (Dodge, 1980) asked children an open-ended question, which allowed the child to express how the situation came about. However, the questions were coded dichotomously based on whether the actor intended the action or did not intend the action (e.g., whether it was intended or accidental). If the child indicated that the actor intended the behaviour, the response was coded as hostile. Given that the stories were ambiguous, children could indicate that the actor intended the action but for a benign reason and this response would still be considered “hostile” according to this study’s coding system. Thus, a limitation of the study is that it did not thoroughly represent the participants’ responses.

Similarly, other studies have employed a multiple-choice method of assessing children’s intent attributions (e.g., Dodge & Somberg, 1987; Dodge et al., 1990). In these studies, participants were asked to choose one of the following attributional options to describe the antagonist’s intent (e.g., Dodge et al., 1990): (a) to be mean; (b) it was an accident; (c) to be helpful; and (d) it is unclear why he did it. Although this method of assessing children’s intent attributions provides more information than the previously reviewed dichotomous coding, it still
does not enable the child to elaborate his or her response and thus might fail to capture important
information concerning his or her interpretation of the situation.

In addition to limitations in the method of accessing children’s intent attributions,
different studies employ different scoring procedures and fail to provide rationales for employing
the specific procedure (Orobio de Castro et al., 2002). For example, the meta-analysis by Orobio
de Castro et al. (2002), found that some of the studies reviewed based their hostile attribution
score on the proportion of hostile intent responses. Conversely, other studies based their hostile
attribution score on hostile intent attributions minus benign attributions or an average of ratings
made on quantitative rating scales. Thus, there is a lack of consistency and accountability with
respect to the scoring procedures employed in these studies.

Moreover, the studies assessing children’s attributional competency have only required
children to attribute intentions to the victimizer when they themselves were imagined to be the
victim. Although this information is important, it is equally important to know how children
would respond when they are asked to imagine themselves as the transgressor. Because
aggressive children repeatedly violate the rights of others, it is important to know what kind of
intentions they would attribute to both themselves and the victim. This information would
provide integral insight into their conceptualization of the social dynamics that result in
aggressive behaviour. Although no research has explicitly examined children’s attributions of
intentions when they are the imagined victimizer, it was still possible to make predictions based
on other literature on aggressive children. Specifically, the finding that aggressive children
employ a hostile attributional bias when interpreting others’ intentions, suggests that these
children might also apply such a bias to the interpretation of the victim’s intentions. That is, it is
plausible that when asked to attribute intentions to themselves, aggressive boys would likely
externalize blame by attributing hostile intentions to the victim thereby conveying the idea that the victim provoked or deserved to be victimized. This hypothesis is consistent with the findings that suggest that aggressive children de-emphasize victim suffering (e.g., Gibbs, 1991; Slaby & Guerra, 1988) and blame others when relationships fail (Crick & Ladd, 1993), in that aggressive children may believe that the victim deserved to be victimized.

Thus, a further prediction of the present study is that, when the child is asked to imagine himself as the victimizer, aggressive boys will be more likely than age matched non-aggressive boys, to externalize blame for the transgression. Specifically, it is hypothesized that aggressive boys will not acknowledge their role in an incident in which there was a negative outcome for another story character.

**Aggressive children’s outcome expectancies.** In addition to a propensity to attribute hostile intentions to individuals in ambiguous situations, aggressive children are more likely than their socially adjusted peers to blame others when relationships fail (Crick & Ladd, 1993). Moreover, aggressive children are also more likely than their non-aggressive peers to de-emphasize victim suffering and hold the view that aggression produces positive outcomes for the aggressor (Gibbs, 1991; Perry, Perry, & Rasmussen, 1986; Slaby & Guerra, 1988).

A study by Perry et al. (1986) compared aggressive children to their non-aggressive peers on measures of self-efficacy and outcome expectancy for a variety of situations. They found that aggressive children reported more confidence that their aggression would produce tangible rewards than did non-aggressive children. In addition, aggressive children reported that it was likely they would feel proud in a situation in which they behaved aggressively. The results suggest that aggressive children believe that their behaviour is likely to produce positive outcomes for the self. Interestingly, aggressive children did not differ from their non-aggressive
peers in evaluations of victim suffering. That is, both groups of children acknowledged victim suffering; however, aggressive children seemed to highlight the material gain for themselves despite this suffering.

Similarly, a study by Slaby and Guerra (1988) compared the cognitive processing patterns of antisocial aggressive juvenile offenders with those of aggressive and non-aggressive high-school students. These authors found that antisocial participants were more likely than aggressive and non-aggressive adolescents to attribute hostile intent to a hypothetical story character. In addition, they were also more likely than the other two groups to agree with the belief that aggression helps to avoid a negative image. Interestingly, antisocial and aggressive adolescents were both significantly more likely than non-aggressive participants to endorse the notion that victims don’t suffer. The researchers concluded that “low-aggressive, high-aggressive, and antisocial-aggressive groups represent increasing levels of aggression that were consistently related to both a decreasingly extensive display of social problem-solving skills and an increasing endorsement of non-normative beliefs concerning aggression” (p. 586). Thus, in addition to a hostile attribution bias, aggression is also related to distorted beliefs about the consequences of behaviour.

Developmental lag hypothesis. A number of authors have proposed that an explanation for both the intent attribution difficulties and the distorted cognitions found in aggressive and antisocial children is related to a delay in sociomoral and cognitive development; these youth are thought to developmentally lag behind their non-aggressive peers (hereafter referred to as the developmental lag hypothesis; e.g., Dodge et al., 1984; Gibbs, 1991). Piaget (1965) was one of the first authors to suggest that a child’s ability to differentiate others’ intentions and his or her ability to then integrate that information into his own behavioural repertoire, is a skill that is
acquired developmentally. A number of Piagetian researchers (e.g., Chandler, 1973) have hypothesized that childhood aggressive behaviour may be related to delays with respect to the development of this skill. Gibbs (1991) for example, contends that antisocial and aggressive youth are egocentric and display immature moral judgments. According to Gibbs, these youth are delayed with respect to certain cognitive abilities (e.g., perspective-taking). He asserts that this developmental lag, coupled with cognitive distortions (e.g., hostile intent attributions, misplacing blame) result in solidifying inappropriate and antisocial behaviour. Gibbs notes that “virtually all individuals... possess: (a) some degree of empathic predisposition, and (b) a motivation to maintain self-consistency or avoid cognitive dissonance between behaviour and self-concept” (p. 98). Antisocial individuals however, have developed defense mechanisms (e.g., cognitive distortions) that prevent them from experiencing cognitive dissonance (Gibbs, 1991).

Gibbs’ developmental lag hypothesis is supported by a number of studies demonstrating that aggressive or antisocial children display cognitive and sociomoral reasoning abilities similar to those of younger children (e.g., Dodge et al., 1984). A study by Dodge et al. (1984), for example, compared younger (kindergarten aged) and older (grades 2 and 4) aggressive and non-aggressive children’s ability to identify intentions in different situations. Dodge et al. found that all groups (i.e., aggressive and non-aggressive children in all age groups) were able to correctly identify intentions in hostile situations. However, when the situations depicted prosocial or benign (e.g., accidental) intentions, aggressive older children performed the same as non-aggressive younger children. Older aggressive children made just as many errors as younger children when attempting to discriminate between character’s intentions in these stories.

The developmental lag hypothesis can also be applied to emotional development. Although Gibbs (1991) asserts that all people experience a degree of empathic predisposition,
Hoffman (1991) contends that “if one empathized with a victim one would to some extent share the victim’s feeling of distress. One would then be motivated to alleviate the victim’s pain, if for no other reason than to reduce one’s own empathic distress” (p.278). Thus, in addition to the developmental lag hypothesis, one possible reason that aggressive children de-emphasize the victim’s suffering (as found in outcome studies) and make inappropriate intent attributions is because they do not experience the proper emotional reaction to suffering (e.g., empathy).

Another possible reason for aggressive children’s cognitive distortions (e.g., lack of concern for the victim) could be related to their emotion attributions. Although aggressive children acknowledge victim suffering, they may not attribute the correct (or any) emotions to the victim. Aggressive children might know that victimization produces some type of negative effect for the victim but are unable to correctly attribute emotion to the victim. Difficulties attributing emotions to the victim may make it difficult for aggressive children to experience an adequate emotional reaction to the victim’s distress (Hoffman, 1991). In fact, a study by Hughes and Dunn (2000) found that hard-to-manage children were more likely to respond empathically to stories of victimization if they were also able to correctly attribute complex emotions (e.g., mixed feelings, remorse) to story characters. Moreover, a study by Arsenio, Cooperman and Lover (2000) found that children’s incorrect emotion attributions significantly predicted their initiation of aggression.

Thus, it appears that aggressive children, in addition to experiencing a developmental lag with respect to cognitive development, might also lag behind their adjusted peers with respect to emotional development. The following discussion reviews literature that has investigated the emotion attributions of both adjusted and maladjusted children.
Emotion Attributions

Many cognitive developmental studies examining children’s reasoning and behaviour in social situations have failed to acknowledge or identify the role of emotions. This is unfortunate since children’s mental representations of events include emotional information, which they use to anticipate the outcomes of future events and to guide their behaviour in subsequent interactions (Arsenio & Lover, 1995). An area of research, which has explored emotions, cognitions and their inter-relation, is that of sociomoral development.

Arsenio and Lover (1995) have proposed a model of the role of emotion and cognition in sociomoral development. According to their model, children act as both observers and participants in a wide variety of sociomoral events. With repeated exposure to similar events children form associations between specific types of events and the emotions they produce, thereby creating an affect-event schema of each situation. Children then use these affect-event schemas to guide their reasoning and behaviour in subsequent social situations. Over time children will group together individual affect-event representations and form more general sociomoral principles. For example, they suggest that with repeated exposure to prosocial events, children will eventually form a more general principle of helping and caring for others. According to Arsenio and Lover, individual differences (e.g., different personal histories) influence emotional outcome expectancies, especially in ambiguous situations. However, for a variety of events, many children will predict similar emotional consequences and will form similar affect-event associations.

Emotional consequences and affect-event associations. Over the past few decades there have been a number of studies examining children’s emotional outcome expectancies in sociomoral situations. One of the seminal studies of this kind was carried out by Barden, Zelko,
Duncan and Masters (1980). These researchers examined children’s knowledge about the emotional consequences of a variety of private (e.g., dishonesty—not caught) and social situations (e.g., success, nurturance, dishonesty-caught, justified punishment, unjustified punishment, aggression and failure). Kindergarten, third, and sixth grade children were presented with vignettes conveying one of the eight different categories of private or social experiences common to children. After each story, children were asked to indicate whether they would feel happy, sad, scared, mad, or just okay. The order of the five emotions was randomized as was the order of the vignettes. The results of the study indicated that certain categories of experiences elicited consensus across all age groups with respect to the type of emotion produced (e.g., for the success and nurturance scenarios, most children reported that they would feel happy). However, responses to the dishonesty-not caught scenario varied with age. For this situation, younger children tended to respond that they would feel happy, whereas both third- and sixth-graders responded that they would feel scared. A similar pattern of responses emerged for the dishonesty-caught vignette, which yielded ‘happy’ or ‘mad’ responses from the younger children and more ‘scared’ responses from the two older groups. Taken together the results of this study suggest that children as young as 4 years of age show consensus with one another with respect to their emotional attributions in a variety of situations. Moreover, it appears that there is a developmental trend with respect to the emotions elicited in certain types of situations (e.g., dishonesty) whereby younger children tend to endorse more positive emotions than do older children.

Similarly, a study by Arsenio (1988) investigated children’s conceptions of affect in a variety of sociomoral events. Children were presented with stories representing six different types of rules: inhibitive morality (e.g., events involving victimization such as theft), active
morality (e.g., intervening on behalf of a victim such as one child stopping an unfair fight), conventional (e.g., events that function to maintain social order but are somewhat arbitrary such as a child violates a school rule by wearing only a bathing suit to class), personal (e.g., events that affect the actor only such as a teacher forcing a child to reveal what he has written in a notebook during recess), distributive justice (e.g., events involving the distribution of group resources such as one child evenly dividing up money earned between three classmates), and prosocial morality (e.g., events involving beneficial outcomes for others such as one child helps another pick up something that was accidentally dropped). The findings revealed children’s conceptions of the emotional consequences of the various events varied across different rule systems. However, within each rule system there was consensus with respect to the emotions attributed to story characters. That is, there were no significant differences between the emotion attributions of the various grade levels, indicating that there was consensus amongst the children with respect to the emotional outcomes of the events. However, the children did make distinctions between the different types of events suggesting that different categories of experience can elicit different emotional reactions.

Children’s emotion attributions about victimizers. It has been proposed that young children’s understanding of the emotional consequences of events influences their actual behaviour (Arsenio, 1988). If this is so, then an interesting observation with respect to children’s emotion attributions was Barden et al.’s (1980) finding that young children attributed positive emotions to moral transgressors. If young children expect that victimizers will experience positive affect after transgressing, then this expectation might serve to encourage children to commit moral transgressions (Arsenio, 1988).
A study by Nunner-Winkler and Sodian (1988) set out to empirically examine possible explanations for the finding that young children endorse positive affect in situations involving dishonesty. These authors proposed two possible reasons for the finding that young children are more likely than older children to attribute positive emotions to moral transgressors. First, young children might not know the acts are wrong and would therefore attribute positive emotions to the story character. A second and more plausible explanation is that young children are unable to attribute conflicting emotions to one individual (e.g., in a story where one child steals from another, younger children are unable to attribute to the transgressor both happiness for obtaining the desired object and guilt for committing a transgression). When there is an emotional conflict between positive and negative emotions, young children are unable to conceptualize this conflict and will choose to attribute positive emotions to story characters rather than negative ones.

These authors designed a series of experiments that examined children’s conceptions of the emotional consequences of moral events. The first experiment investigated children’s attributions of emotion to both a hypothetical story protagonist who violated a moral rule, and a protagonist who resisted temptation to violate a moral rule. Children aged 4- to 8-years-old were presented with a story in which a character committed an act of minor theft and did not get caught, and a story in which an actor resisted temptation to steal. Children were asked to identify how the story protagonist felt and why. Moreover, in order to assess whether children knew the acts were wrong, children were asked whether the protagonist was allowed to take the item and why or why not. These authors reasoned that if young children neglect the moral aspects of the story, they would be more likely to attribute happiness to the character that stole and sadness to the character who resisted the temptation to steal. If, on the other hand, young children are biased
towards reporting positive emotions in conflict situations they should attribute positive emotions to both story characters.

The results of the study indicated that children in all age groups understood that the story protagonist was not allowed to steal and the reasons for this rule. Thus, children’s positive emotion attributions to wrongdoers are not related to an inability to identify the moral ‘wrongness’ of the act. However, despite judging the act as wrong, these authors found that, consistent with Barden et al.’s (1980) study, young children attributed positive emotions, and older children attributed negative emotions to the wrongdoer. In the resistance to temptation story, young children attributed negative emotions to the story character whereas older children’s attributions were positive. Upon examination of their justifications, it was found that young children (4-year olds) were likely to focus on the outcome of the act as a reason for their attributions (e.g., “he feels sad because he did not get the candy”) whereas the oldest children (8-year-olds) were likely to focus on the moral aspects of the situation (“he feels happy/proud because he did not steal”). Interestingly, the middle age group (6-year-olds) was more likely to focus on the moral aspects of the act when the wrongdoer stole, but was more likely to be outcome oriented when the protagonist resisted temptation to steal. Thus, contrary to the authors’ hypotheses, the fact that children attributed different emotions to the story characters in the two situations suggests that they are not biased towards only reporting positive emotions to story characters in conflict situations.

In addition to exploring both children’s emotional attributions to the story characters and their justifications for those attributions, Nunner-Winkler and Sodian (1988) presented children with two additional stories depicting either a sad (remorseful) child or happy child who had stolen a toy. Children were then asked to judge the moral worth of the two children. Another
developmental trend was found with respect to children’s judgments of moral worth. Almost all of the 8-year-olds and the majority of 6-year-olds judged the child who stole and was happy to be worse than the child who stole and was sad. The majority of the 4-year-olds however, judged both children as being equally bad. Again, older children’s justifications reflected a moral orientation whereas the younger children displayed outcome-oriented reasoning.

The findings of the study suggest that, when faced with an emotional conflict, younger children are more likely to orient toward situational outcomes when making emotion attributions and older children are likely to focus on the moral aspects of the situation. This finding is consistent with Piaget’s (1932/1965) seminal work regarding children’s moral development. According to Piaget, in judging an act’s ‘wrongness’, young children tend to focus on objective consequences as opposed to the actor’s intentions. With respect to aggressive children, it might be expected that their attributions and justifications would resemble that of the younger non-aggressive children. That is, as the developmental lag hypothesis suggests, aggressive children would be outcome oriented in their reasoning and would attribute positive emotions to moral transgressors.

Nunner-Winkler and Sodian (1988) proposed that the salience of the outcome information might explain young children’s outcome orientation. These authors reasoned that young children might focus more on the outcome of the situation because the tangible profit is more salient than the action’s moral value. In their second experiment, these authors investigated whether young children’s (4-year-olds) emotional attributions vary as a function of outcome salience. In addition, they also examined whether children’s emotion attributions vary as a function of the severity of the moral transgression.
The results revealed that children’s emotion attributions did not differ as a function of the salience of the outcome. In situations both with and without a tangible outcome, it was found that the majority of the children attributed positive emotions to wrongdoers and justified their answers with respect to the outcome of the action. Further, the majority of the children acknowledged that moral transgressions differ in severity; however, when making emotion attributions, young children did not appear to consider the moral value of the act. That is, they were able to identify differences in the severity but did not use that information in their attribution of emotion. The results of the study suggest that young children’s emotion attributions do not vary as a function of either the salience of the profit or the severity of the act.

As it was found that young children do not consider the moral value of the act when attributing emotions to others, Nunner-Winkler and Sodian (1988) designed a third experiment to explore other possible criteria children use when making emotion attributions. Specifically, they examined whether young children’s emotion attributions vary as a function of the protagonist’s intentions. They reasoned that there were three possible explanations for children’s positive emotional attributions to moral transgressors. First, young children may conceptualize that people feel good unless they are negatively affected by an event. Second, young children might attribute positive emotions to someone who causes a visible effect, regardless of their intentions. A third explanation might be that young children have a stereotype of “good” and “bad” and will attribute positive emotions whenever the outcome of an individual’s actions matches their label, regardless of their actual intentions.

In order to examine these possible explanations, 4-and 5-year-old children were presented with four stories that varied with respect to a character’s intention and the situational outcome. Findings revealed that by 5 years of age, children’s emotion attributions are dependent on a
match between an individual's intention and the outcome of the act. That is, when the
protagonist intended an action (whether good or bad) and succeeded in carrying out that action,
the children attributed positive emotions to them. However, when the protagonist either did not
intend an outcome or when the outcome did not match the protagonist’s intentions, children
made negative emotion attributions. The findings suggest that children as young as 4 and 5 years
old are able to assess the moral value of situations. However, when there is a match between an
actor’s intentions and situational outcomes, young children are likely to attribute positive
emotions regardless of whether the act is “right” or “wrong”.

Taken together, the findings of the Nunner-Winkler and Sodian (1988) experiments
suggest that there is a developmental shift from outcome orientation to moral orientation in
children’s attributions of emotions to a moral transgressor (hereafter referred to as the
‘attributional shift hypothesis’). According to Nunner-Winkler and Sodian’s attributional shift
hypothesis, younger children base their decisions about other’s emotional experiences on a
match between intention and outcome whereas older children focus on moral values and
standards. Related to aggressive children, as it has been found that these children have
difficulties correctly identifying others’ intentions, it is likely that these children will also
experience difficulty correctly identifying another individual’s emotions.

Arsenio and Kramer (1992) suggested that the attributional shift hypothesis was not
warranted based on the methodology of the Nunner-Winkler and Sodian (1988) study. They
proposed that the findings of the Nunner-Winkler and Sodian study were limited because they
only assessed the victimizer’s emotions rather than both the victim and the victimizer in the
stories. Arsenio and Kramer (1992) reasoned that by asking children to identify the victim’s
emotions, children would be more likely to attribute conflicting emotions to the victimizer. They
conducted a study exploring children’s emotion attributions to both the victimizers and the victims of sociomoral events and found that all children (4-, 6- and 8-year-olds) were able to distinguish between the emotions of the victimizer and the victim. However, although most of the children attributed negative emotions to the victims, almost all of the 4- and 6-year-olds and the majority of the 8-year-olds attributed positive emotions to the victimizer. Thus, contrary to their prediction, the authors did not find that children attributed mixed emotions to the victimizer when asked to assess the victim’s emotions as well.

In addition to examining children’s conceptions of the emotions of both victims and victimizers, Arsenio and Kramer (1992) proposed that the Nunner-Winkler and Sodian (1988) study did not adequately manipulate outcome salience. They conducted a second study whereby salience was manipulated by (a) presenting a story that described a hypothetical victimizer and victim as friends, and (b) presenting a story in which the participant him- or herself was described as the victim, and the victimizer was described as a known friend of the participant. It was reasoned that these manipulations would highlight the salience of the victim’s loss and would thereby serve to elicit mixed-emotion attributions. In addition, they hypothesized that one reason for the finding that children do not attribute mixed emotions to story victimizers might be that the questions asked of the children did not probe their full understanding of the emotional consequences of the event. Thus, in addition to asking the children how the story character’s felt, the researchers asked children probe questions to explore whether children could attribute additional emotions to victimizers in addition to the ones selected.

The results of the study revealed that manipulations of the salience of loss for the victim did not influence younger children’s emotion attributions but did moderate older children’s attributions. Almost all of the younger children attributed positive emotions to the victimizer,
despite the salience of victim harm. Older children (8-year-olds) on the other hand, were more likely to attribute negative or mixed emotions to the victimizer in situations when the harm done to the victim was made more salient. In addition, although children initially did not attribute mixed emotions to the victimizers, upon probing, most of the 6- and 8-year-olds were able to attribute opposing emotions to the victimizer, in addition to those originally selected. Taken together the findings suggest that, as opposed to a distinct attributional shift or reversal from outcome orientation to moral orientation, there is a subtle change as children develop the ability to understand and attribute mixed emotions in social situations (Arsenio and Kramer, 1992).

**Emotion attributions of aggressive children.** Very few studies have examined aggressive children’s conceptions of the emotional consequences of sociomoral events. This area of investigation is important, however, as children’s understanding of the emotional consequences of a moral event might aid in their appreciation of the importance of following moral principles (Arsenio & Lover, 1995). Since aggressive children repeatedly violate sociomoral rules, it is important to examine their understanding of sociomoral affect.

A study by Blair (1997) compared the moral reasoning and emotion attributions of behaviourally difficult children with and without psychopathic tendencies (i.e., psychopathic tendencies include impulsivity, conduct problems, and interpersonal difficulties). The children were presented with vignettes depicting different rules (moral vs. conventional) and different emotions (e.g., some of the stories pulled for attributions of happiness, sadness, embarrassment, anger, fear, guilt, worry, or surprise). The participants were asked to identify how the story protagonist felt in each of the situations. The results of the study indicated that the two groups did not differ with respect to the emotions attributed to story characters in the happiness, embarrassment and fear stories. There were group differences however, with responses to the
sadness and guilt stories. For the sadness story, children with psychopathic tendencies attributed sadness to the story characters whereas the control group made more complex attributions involving both sadness and anger. Moreover, in the guilt story, children with psychopathic tendencies were less likely than the control group to attribute guilt or sympathy to the story characters.

Similarly, a study by Arsenio and Fleiss (1996) examined disruptive children (83% male and 17% female) and their emotion attributions to characters in sociomoral situations. These authors proposed that behaviourally disruptive children might not follow moral rules as a result of their deficient understanding of the emotional consequences of events. They compared behaviourally disruptive (i.e., children meeting DSM-III-R criteria for conduct or oppositional defiant disorders; American Psychiatric Association, 1987) and typical children’s understanding of the emotional consequences of sociomoral events. Children were presented with stories from four different sociomoral categories: inhibitory morality (e.g., events involving victimization), conventional (e.g., events that promote the cohesive functioning of social groups), personal (e.g., events that primarily affect the actor) and prosocial morality (e.g., events in which personal resources are employed to create positive outcomes for others). Children were then asked to identify how the story protagonist felt in each situation. The findings revealed that although both typical and behaviourally disruptive children’s emotion attributions varied according to the sociomoral category being assessed, these groups differed both with respect to their emotion attributions to the story characters within each category and to the explanations they provided. For the stories involving inhibitory morality, the majority of the children in both groups attributed more positive emotions to moral transgressors than to the victims. However, compared to behaviorally disruptive children, typical children attributed more fear and less sadness to the
story characters. An examination of their justifications revealed that both groups acknowledged the negative impact that the transgressions had on the victims. Behaviourally disruptive children were more likely to include descriptions of the tangible or material gains experienced by the transgressor and less likely to focus on the consequences of the transgression. For both the conventional stories and the personal stories, behaviourally disruptive children anticipated that the situations would produce more sadness than the typical children did. Interestingly, younger typical children also selected sadness more than the other emotions. This finding suggests that behaviourally disordered children’s emotion attributions are immature; their responses are developmentally delayed (Arsenio & Fleiss, 1996). Moreover, the findings are consistent with the developmental lag hypothesis in that younger non-aggressive children in the Arsenio and Kramer (1992) study also attributed positive emotions to the victimizer, despite the salience of victim harm. Although both groups of children in the Arsenio and Fleiss (1996) study anticipated that both actors and recipients of prosocial morality would feel happy, behaviourally disruptive children attributed more happiness to these characters than did typical children. Behaviourally disruptive children were more likely to focus on the negative consequences the actor had avoided by behaving prosocially and less likely to focus on the beneficial consequences of the act.

The findings of the Arsenio and Fleiss (1996) study suggest that behaviourally disruptive children place a large emphasis on material gain when making emotion attributions. Moreover, behaviourally disruptive children’s response patterns are similar to those of younger typical children, suggesting that their processing of emotional information may be developmentally delayed.
Boys’ Attributions of Emotions and Intentions

Because none of the studies reviewed assessed clinic-referred aggressive boys, the present study was designed to compare these boys’ emotion attributions to those of non-aggressive age matched peers. Moreover, in assessing children’s emotion attributions, many of the emotion attribution studies reviewed presented children with a specified number of emotions, displayed in the form of facial expressions, from which to choose. However, this fails to provide the child with the opportunity to spontaneously express their attribution. That is, by providing children with faces displaying a set range of emotions (e.g., happy, sad, etc.) the child may simply match the face that best represents how they have seen others respond in actual similar situations. Alternatively, by presenting children with a set range of emotions, it enables the children time to reflect upon each emotion and how well it fits the story. Thus, information is lost concerning children’s automatic processing and spontaneous production of emotional responses.

In addition, previous research in the field (e.g., Nunner-Winkler & Sodian, 1988) has coded children’s responses as either positive emotion or negative emotion and then has coded their justifications for such attributions separately. Utilizing a dichotomous coding system in this way fails to capture children’s interpretation of the story. That is, children may say a victimizer in a story was happy but their reason for the happiness may be completely benign. That is, the child might be attributing the victimizer’s emotion as the result of a tangential reason or perhaps because they were anticipating the victimizer’s future reparative behaviour. Thus, the present study was designed to allow boys to generate their own emotional terms to story characters. Moreover, in addition to coding for positivity or negativity, boys’ emotional responses will be coded in such a way as to capture the appropriateness of their emotion attribution. Based on the literature, it is predicted that aggressive boys will be less accurate than age matched non-
aggressive boys, at attributing appropriate emotions to both the victim and victimizer in hypothetical stories.

Summary of the Problem and Objectives of the Present Study

The preceding review of the literature has demonstrated that aggressive children are likely to experience difficulties attributing both intentions and emotions to others. Although both of these findings have been supported empirically by a number of studies, few studies have actually assessed both emotion attributions and intent attributions simultaneously. Since research has demonstrated that emotion attributions may in part be related to the match between an actor’s intentions and the outcome of the act (e.g., Nunner-Winkler and Sodian, 1988), it seems necessary to study both emotion and intent attributions in a single study. As no study has assessed the relation between emotion attributions and intent attributions, one of the objectives of the present study is to explore the relation between these two attributions.

Moreover, as discussed previously, none of the studies reviewed has asked children to attribute intentions to both the victim and the victimizer. Specifically, none of the intent attribution studies have asked children to imagine themselves as the victimizer and to make attributions about their own intentions. This information may provide important insight with respect to how aggressive children view the motivation behind their behaviour. Thus, a second objective of the present study is to examine boys’ emotion and intention attributions when they are asked to imagine themselves as either the victim or the victimizer.

Further, it has been demonstrated that severity of aggression may be an important factor in hostile attributional biases. It is important to examine clinic-referred aggressive children in order to gain a better understanding of this population as they are likely the individuals who present for
treatment. Thus, the third objective of the present study is to gain a better understanding of the social and emotional information processing abilities of clinic-referred aggressive boys.

The present study therefore, is designed to assess and compare the emotion and intention attributions of aggressive boys to their age matched non-aggressive peers. Following previous methodologies, the present study will present boys with hypothetical vignettes depicting characters in a variety of sociomoral settings and will require boys to attribute emotions and intentions to the story characters. This study is novel in that it assesses both cognitive and emotional factors in a single study. Further, this study includes a sample of clinic-referred aggressive boys. This group of children has yet to be tested with respect to both their intention and emotion attributions. Moreover, this study will utilize open-ended questions and expanded coding systems in an attempt to gain a more thorough understanding of boys' social and emotional information processing.

In addition, consistent with the majority of the literature, all of the participants in this study will be male. It is well documented in the literature that aggression and conduct problems are more prevalent among males (e.g., Dishion et al., 1995; Lahey et al., 2000). Moreover, there is evidence to suggest that both the form and function of aggressive behaviour is different for boys and girls (Dishion et al., 1995). For example, over the course of development girls tend to increase their use of more covert, indirect forms of aggression (Dishion et al., 1995). Thus, in order to control for gender differences, an all male sample will be used in this study.

Specific Hypotheses

Based on previous research it was predicted that:
1. When the child is asked to imagine himself as the victim, aggressive boys will be more likely than age matched non-aggressive boys, to attribute hostile intentions to story characters in ambiguous situations.

2. When the child is asked to imagine himself as the victimizer, aggressive boys will be more likely than age matched non-aggressive boys, to externalize blame for the transgression. Aggressive boys will fail to acknowledge that they could have intended to perform an action that resulted in a negative consequence for another story character.

3. Aggressive boys will be less accurate than age matched non-aggressive boys at attributing emotions to both the victim and victimizer in hypothetical stories. Specifically, it was predicted that aggressive boys will be more likely to attribute positive emotions to story characters whose intentions match the outcome of the story. Moreover, based on the developmental lag hypothesis, it is predicted that, compared to non-aggressive boys, aggressive boys will be less likely to attribute mixed emotions to story characters.
Chapter II

Method

Participants

Participants were 40 male children (20 aggressive and 20 non-aggressive) between 9 and 12 years of age. The mean age of the boys was 11.11 years ($SD = 1.09$). The majority of the boys were white (95%), followed by 2.5% African-Canadian and 2.5% Asian-Canadian. Additional demographic data indicated that the sample was primarily from working class to lower-middle class socioeconomic status. With respect to maternal education, data was not available for 7 participants (17.5%), 5% completed elementary school only, 12.5% completed high school only, 35% completed college, 17.5% completed University, and 12.5% completed post-graduate training. With respect to paternal education, data was not available for 8 participants (20%), 2.5% completed grade school only, 35% completed high-school only, 22.5% completed college, 5% completed University and 15% completed post-graduate training. For the overall sample, 52.5% of participant’s parents were married, 30% were divorced and data was not available for the remaining 17.5%. Demographic data and child characteristics are shown in Table 1.

The aggressive group (AGG) consisted of boys referred from 3 different children’s mental health centers in Southwestern Ontario. These boys were identified by the clinic as aggressive. Three of the boys were recruited from a day-treatment program, 9 boys were recruited from an outpatient facility and 7 boys were recruited from a psychiatric in-patient facility. One additional participant was recruited from the community and was placed in the aggressive group due to clinically significant aggressive scores on two parent checklists.
Boys were classified as aggressive in one of two ways. First, boys were classified as aggressive if they met the criterion score on having a self-report checklist (Youth Self report; YSR: Achenbach, 1991c) and/or a parent report Child Behaviour Checklist (CBCL: Achenbach, 1991) score above the 95th percentile for Aggressive Behaviour Syndrome or Delinquent Behaviour Syndrome. Second, boys were classified as aggressive if they met the criteria for Oppositional Defiant Disorder or Conduct Disorder as assessed by the Child Symptom Inventory-4: Parent Checklist (CSI-4: Gadow & Sprafkin, 1994). Thus for a child to be assigned to the aggressive group, they needed to score above the 95th percentile on the YSR or the CBCL or receive significant scores for Oppositional Defiant Disorder or Conduct Disorder on the CSI-4. Four exceptions were made with respect to the aggressive group. Specifically, for four boys from the in-patient facility, parents were not available to respond to the questionnaires and thus the staff at the center completed the questionnaires. Although the staff did not indicate any clinically significant scores on the checklists, these boys were admitted to the facility as a result of extreme aggressive behaviour. Thus, for these four boys, client records and psychiatric diagnoses were substituted for checklist scores.

Boys were assigned to the comparison group (NON) if they were within the normal ranges (below the 70th percentile) on all syndromes measured by the CBCL and if they did not receive significant scores for Oppositional Defiant Disorder or Conduct Disorder on the CSI-4. One child received a significant score for Oppositional Defiant Disorder on the CSI-4. However, it was decided to include this child in the comparison group because his score was at the cutoff point and his scores on all other questionnaires were within the normal range.
Table 1

Characteristics of Aggressive and Non-aggressive Comparison Sample

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Aggressive Sample (N=20)</th>
<th>Non-Aggressive Sample (N = 20)</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Child’s age (in years)</td>
<td>11.28</td>
<td>1.11</td>
<td>10.95</td>
</tr>
<tr>
<td>Mother’s age (in years)</td>
<td>38.06</td>
<td>4.84</td>
<td>39.13</td>
</tr>
<tr>
<td>Father’s age (in years)</td>
<td>42.00</td>
<td>5.31</td>
<td>41.25</td>
</tr>
<tr>
<td>Number of Siblings</td>
<td>1.41</td>
<td>.62</td>
<td>2.06</td>
</tr>
<tr>
<td>CBCL – Externalizing T-Score</td>
<td>66.94</td>
<td>8.36</td>
<td>44.39</td>
</tr>
<tr>
<td>CBCL – Delinquency T-Score</td>
<td>63.31</td>
<td>8.21</td>
<td>52.28</td>
</tr>
<tr>
<td>CBCL – Aggressive T-Score</td>
<td>69.00</td>
<td>10.40</td>
<td>51.39</td>
</tr>
<tr>
<td>YSR – Externalizing T-Score</td>
<td>59.13</td>
<td>6.96</td>
<td>44.23</td>
</tr>
<tr>
<td>YSR – Delinquency T-Score</td>
<td>58.88</td>
<td>9.12</td>
<td>50.85</td>
</tr>
<tr>
<td>YSR – Aggressive T-Score</td>
<td>59.44</td>
<td>6.66</td>
<td>52.69</td>
</tr>
<tr>
<td>YSR – Internalizing T-Score</td>
<td>54.00</td>
<td>12.03</td>
<td>46.85</td>
</tr>
<tr>
<td>WISC – Block Design</td>
<td>8.78</td>
<td>3.17</td>
<td>12.25</td>
</tr>
<tr>
<td>WISC – Vocabulary</td>
<td>8.89</td>
<td>3.43</td>
<td>11.10</td>
</tr>
<tr>
<td>CSI-4 Oppositional Defiant Disorder</td>
<td>77.8%</td>
<td>6.3%</td>
<td></td>
</tr>
<tr>
<td>CSI-4 Conduct Disorder</td>
<td>27.8%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Table 1 (continued)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aggressive Sample</td>
<td>Non-Aggressive Sample</td>
<td>Statistic</td>
</tr>
<tr>
<td>Participant Medications</td>
<td>None</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td>Medical (e.g., asthma)</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>Ritalin</td>
<td>25%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Other Psychiatric (e.g., risperdal)</td>
<td>35%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Data Not Available</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Mother’s Marital Status</td>
<td>Married</td>
<td>40%</td>
<td>65%</td>
</tr>
<tr>
<td></td>
<td>Divorced</td>
<td>40%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Data Not Available</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>Mother’s Education</td>
<td>Grade School</td>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>High School</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>College</td>
<td>35%</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>University</td>
<td>0%</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>Post-graduate Training</td>
<td>20%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>Data Not Available</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>Father’s Education</td>
<td>Grade School</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>High School</td>
<td>30%</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>College</td>
<td>25%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>University</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>Post Graduate Training</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>Data Not Available</td>
<td>25%</td>
<td>15%</td>
</tr>
</tbody>
</table>

*p<.05  
**p<.001
Procedure

Informed parental consent was obtained for each participant before the study and informed assent was obtained from each boy. Each boy was brought into a private room and tested. Testing took approximately 1 hour for each boy. The aggressive boys were seen at the children’s mental health center from which they were recruited. The control group was seen at the University of Windsor. Each child was assured of the confidentiality of his responses, which were tape-recorded and later transcribed for coding purposes. The WISC subtests were administered first. Boys were then presented with the intention and emotion attribution task (see Appendix A). The task was conducted in interview format and illustrations were provided to aid in understanding (one illustration per vignette). The illustrations were created by an artist in the community and portrayed boys engaged in the scenario described by the story. All facial expressions were depicted as neutral. Upon completion of the intention and emotion attribution task, where applicable, the child was asked to complete the YSR. Boys were then presented with a $5 McDonald’s gift certificate as a token appreciation for their participation. While the child was being tested, his parents were seated in a separate room and were asked to complete a background demographics questionnaire, the CBCL and the CSI-4.

Measures

**Background questionnaire.** Demographic information including age of child, grade, ethnicity, parental marital status, age of parents, parental education and parental occupation was obtained from the participants’ parents (see Appendix B for full description of questionnaire).

**Wechsler intelligence scale for children - third edition.** To evaluate verbal and spatial ability, boys were administered the vocabulary and block design subtests of the Wechsler intelligence scale for children (WISC-III: Wechsler, 1991). These two subtests have been found
to be the most highly correlated with indices of general intelligence (Sattler, 1992). Each child’s subtest raw score was converted to a standard score (\( M = 10, SD = 3 \)). Both the aggressive and the non-aggressive group had mean scores within one standard deviation of the mean on both subtests. For the aggressive group, the mean block design score was 8.78 (SD = 3.17) and the mean vocabulary score was 8.89 (SD = 3.43). For the non-aggressive group, the mean block design score was 12.25 (SD = 3.01) and the mean vocabulary score was 11.10 (SD = 2.55). Correlations were conducted to investigate the relation between WISC-III subtest scores and the variables of interest (e.g., intent attributions, emotion attributions and emotion justifications). No significant correlations were found and therefore WISC-III scores were excluded from further analyses.

Child behaviour checklist. In order to assess aggression and other symptomology, parents of the participants were asked to complete the well-validated parent report form of the CBCL (Achenbach, 1991). The CBCL was designed to assess children’s competencies and problems as reported by their parents. The checklist consists of 118 items that describe a broad range of problems children may be experiencing. For each item, parents are asked to indicate on a 3-point scale how applicable the statement is to their child (e.g., 0 = not true, 1 = somewhat or sometimes true, 2 = very true or often true). These items are grouped together to form eight internally consistent subscales. Three of these subscales (Withdrawn, Anxious/Depressed, Somatic Complaints) are summed to generate the Internalizing scale, and two of the subscales (Delinquency, Aggression) are summed to generate the Externalizing scale. The Externalizing and Internalizing scales were derived via second-order factor analysis. The three additional subscales, not included in the calculation of Externalizing and Internalizing scales are: Social Problems, Thought Problems and Attention Problems.
Each child receives a raw score on each subscale, which is then converted into a t-score. Mean t-scores were calculated for each group (see table 1) and significant differences were found between the two groups. Specifically, as expected, compared to the non-aggressive group, boys assigned to the aggressive group had higher t-scores on both the aggression and delinquency subscales of the CBCL.

In addition, those boys aged 11-years and older, were asked to complete the CBCL youth self-report (YSR: Achenbach, 1991c). This instrument is well validated and yields information regarding the same subscales as the parent report form. Mean t-scores were calculated for each group (see table 1) and significant differences were found between the two groups. Compared to the non-aggressive group, boys assigned to the aggressive group had higher t-scores on both the aggression and delinquency subscales of the YSR.

**Child symptom inventory – 4: Parent checklist.** In order to confirm the participants’ diagnoses and to gain descriptive information about the population that enabled classification of the participants according to group, the Child Symptom Inventory-4: Parent Checklist (CSI-4: Gadow & Sprafkin, 1994) was administered to the participants’ parents. The CSI-4 consists of 97 items describing children’s problem behaviours. Parents were asked to indicate which rating best describes their child’s overall behaviour (e.g., never, sometimes, often, very often). These items are then divided into 10 categories corresponding with the Diagnostic and Statistical Manual-IV (American Psychiatric Association, 2000) diagnostic categories of disorders in childhood. The percentage of participants in each group that met the CSI-4 criteria for oppositional defiant disorder or conduct disorder is reported in Table 1.

**Intention and emotion attribution task.** In order to assess boys’ attributions of emotions and intentions to the same story, participants were presented with 12 vignettes (see Appendix A
Boys' Attributions of Emotions and Intentions

for description of the stories). Boys were presented with hypothetical stories in which one of the story characters contributed to a negative outcome for another character. The stories are grouped into four categories of intention (ambiguous, prosocial, hostile, and accidental/benign). For the prosocial, hostile, and accidental/benign categories, boys were presented with one story in which they were asked to imagine themselves as the victim and a second story in which they were asked to imagine themselves as the victimizer. Because aggressive boys' hostile attributional bias has been found to be most evident in ambiguous situations, for the ambiguous intention category boys were presented with three stories in which they were asked to imagine themselves as the victim and three stories in which they were asked to imagine themselves as the victimizer. The stories in the ambiguous condition differed with respect to outcome. Specifically, two stories included outcomes related to physical harm (e.g., child scrapes his knee), two stories included property outcomes (e.g., child's shirt is ruined, child's candy is missing) and two stories included a non-tangible outcome such as hurt feelings. The order of the stories (type of intention) and the role that the child was asked to assume (victim vs. victimizer) was counterbalanced. The majority of stories was adapted from the literature (e.g., Dodge, 1980; Dodge & Somberg, 1987).

In order to assess participants' intent attributions, following the presentation of each story, participants were asked to indicate how they believe the situation happened (e.g., why did the ball hit you?). Participants were probed until they elicited an intention attribution. In order to assess participants' emotion attributions and justifications, participants were asked how both story characters felt and why.

Coding Systems for Interview Responses

Intent attributions. For the questions addressing intent attributions (e.g., why did the ball hit you?), a coding scheme was developed based on the literature (e.g., Dodge, 1980; Dodge &
Somberg, 1987). Participants’ intent attributions were classified as 1 = hostile, 2 = benign, or 3 = prosocial.

**Emotion attributions.** With respect to emotion attributions, because no study has addressed both emotion and intent attributions in a single study, for the questions addressing emotion attributions, a coding scheme was developed based on the participant’s responses. Previous research investigating children’s emotion attributions (e.g., Nunner-Winkler & Sodian, 1988) has employed very general coding systems. For example, emotion attributions were classified as positive or negative and justifications were classified as outcome oriented, moral oriented, or mixed. However, based on the participant’s responses to this study, it was reasoned that important information would be lost with such a generalized coding system. For example, some participants would attribute positive emotions to victimizers in the stories because they were happy for the outcome. However, other boys would attribute positive emotions to the victimizer but the reason would be appropriate, such as the “victimizer felt good because they intended to make amends”. Although both of these responses reflect positive emotions, the first reflects positivity for inappropriate reasons whereas the second reflects positivity for appropriate reasons. Thus, after examining the participant’s responses, for both the victim and the victimizer, a coding system was devised to account for appropriateness. Specifically, with respect to the emotion they attributed to each of the story characters (i.e., victim and victimizer), participants’ responses were coded as negative appropriate (e.g., sad because he did something wrong), negative inappropriate (e.g., mad because now he is going to get in trouble), positive appropriate (e.g., happy because he is helping the kid pick up his stuff), positive inappropriate (e.g., happy because he hurt the kids feelings). Because participants were free to provide as many emotion attributions as they chose, each participant received a score of 0 = absent or 1 = present for each
of the 4 emotion categories. This enabled participants, if they chose, to make both appropriate and inappropriate responses to the same story character. Responses to the victim and responses to the victimizer were coded separately.

**Emotion justifications.** With respect to participants’ justifications for their emotion attributions, in addition to the categories used by Nunner-Winkler and Sodian (1988) which included moral justifications or outcome justifications, a more elaborate coding system was developed based on participant’s responses. The responses were reviewed and general themes emerged. Specifically, the coding system involved the following categories (see Appendix C for examples of each category): outcome (the child’s response focused on the outcome of the act as a reason for their emotion attribution), act/action (the child’s response focused on the act itself as a reason for their emotion attribution, intention matched (e.g., because the outcome matched the character’s intention), intention assumed/misattributions (e.g., because the one character thinks the other character performed the act purposely), intention mismatched (e.g., because the outcome did not match the character’s intentions – accidental), moral (e.g., concepts of rights, justice, fairness, responsibility), empathic (response evidenced one character considering the other character’s feelings or perspective), anticipated consequences (the child’s response focused on future outcomes or consequences of the scenario as a reason for their emotion attribution) and irrelevant/tangential (responses that did not focus on the details of the story or were irrelevant).

Because participants were free to provide as many justifications as they chose, each participant could receive as many codes as were applicable to their response. Each participant then received a score for each justification category with respect to the percent usage of that category in their response. For example, if a participant only referred to the outcome as a reason for their attribution, they would receive a score of ‘1.00’ for that category because 100% of their...
response used that category, and they would receive a ‘0’ for all of the other categories. However, if a participant referred to both the outcome and to anticipated consequence as reasons for their attributions, they would receive a ‘0.50’ for each of those categories because each category comprised 50% of their response and they would receive a ‘0’ for the other categories.

In order to establish inter-rater agreement a second coder (a 4th year undergraduate psychology student) was trained on the 3 coding systems. The second coder was first provided with a list of codes and examples were provided for each coding system. Next, a sample interview was coded with the second coder and each code assigned and the rationale for assigning the code was discussed. Following training, a random selection of 25% of the interviews was coded by the second coder in order to establish inter-rater agreement. Both of the coders were blind to the participant’s group status during coding.

For the intent attributions, exact inter-rater agreement for 25% of the interviews was 95%. For the emotion attributions exact inter-rater agreement for 25% of the interviews was 93%. For the emotion justifications, inter-rater agreement was 92%. Disagreements between raters were resolved through discussion.
Chapter III

Results

Intent attributions

Preliminary analyses. Before examining specific hypotheses concerning the effects of role (victim vs. victimizer) on group differences in intent attributions for the various stories, a chi-square analysis was conducted on the distribution of intent attributions for each story type regardless of role. Contrary to previous findings, results revealed no significant differences between the aggressive and non-aggressive groups with respect to their intent attributions, $\chi^2 (2, n=239) = 1.15, p > .05$. In fact, although not significantly different, compared to aggressive participants, non-aggressive participants made more hostile attributions to ambiguous stories (45.8% of non-aggressive boys made hostile attributions compared to 39% of aggressive boys). For both groups, 1 participant in each group made prosocial intent attributions to ambiguous stories, the remainder of intent attributions were benign (53.5% for non-aggressive group and 60.5% for aggressive group). Chi-square analyses were also conducted for each of the ambiguous story subtypes (e.g., physical outcome, property outcome, non-tangible outcome). Once again no significant group differences were found (see table 2). For physical outcome, $\chi^2 (1, n=80) = 1.25, p > .05$; for property outcome, $\chi^2 (2, n=80) = 2.62, p > .05$; for non-tangible outcome $\chi^2 (2, n=78) = 1.42, p > .05$. Interestingly, when the outcome was tangible (e.g., physical harm or property damage), both groups of participants made more benign intent attributions than hostile. However, when the outcome was non-tangible (e.g., hurt feelings), both groups made more hostile intent attributions than benign.

Intent attributions: Victim role. With respect to hypothesis testing, the first hypothesis was that, when the child is asked to imagine himself as the victim, aggressive boys would be
Table 2

Frequencies of Intention Categories by Story Type and Group, Regardless of role

<table>
<thead>
<tr>
<th>Intention</th>
<th>Ambiguous, physical</th>
<th>Ambiguous, property</th>
<th>Ambiguous, non-tangible</th>
<th>Prosocial</th>
<th>Hostile</th>
<th>Accidental</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
<td>AGG</td>
</tr>
<tr>
<td>Hostile</td>
<td>25</td>
<td>15</td>
<td>40</td>
<td>27.5</td>
<td>76.3</td>
<td>0</td>
</tr>
<tr>
<td>Benign/accidental</td>
<td>75</td>
<td>85</td>
<td>57.5</td>
<td>72.5</td>
<td>21.1</td>
<td>2.5</td>
</tr>
<tr>
<td>Prosocial</td>
<td>0</td>
<td>0</td>
<td>2.5</td>
<td>0</td>
<td>2.6</td>
<td>97.5</td>
</tr>
</tbody>
</table>

Note: Values are percentages.
more likely than age matched non-aggressive boys, to attribute hostile intentions to story characters in ambiguous situations. To examine this hypothesis, chi-square analyses were conducted on the distribution of intention attributions for each story type (e.g., ambiguous, hostile, benign and prosocial) as well as the ambiguous story subtypes (e.g., physical outcome, property outcome, and non-tangible outcome) in order to determine if story outcome affected responses. Only attributions made when participants were asked to imagine themselves as the victim were included. Contrary to the hypothesis, results revealed no significant differences between groups with respect to their intent attributions both in the case of collapsing the 6 ambiguous stories $\chi^2(2, n=120) = 1.02, p > .05$ and examining the 3 story subtypes (see table 3). For stories with a physical outcome, $\chi^2(1, n = 40) = 0.11, p > .05$; for stories where the outcome is related to property $\chi^2(2, n = 40) = 1.05, p > .05$; and for stories with a non-tangible outcome, $\chi^2(1, n=40) = 0.173, p > .05$. In fact, when all of the ambiguous stories are examined simultaneously, both groups of participants attributed the same number of hostile intentions to story characters (55% of participants in both groups made hostile attributions in ambiguous situations). Similarly, for hostile stories, when they were imagined to be the victim, 100% of both groups were accurately able to attribute hostile intentions to the story character. For benign stories, 100% of aggressive participants attributed benign intentions to story characters. Surprisingly, for the control group, although 19 participants accurately attributed benign intentions to the story character, 1 participant attributed hostile intentions to the story character. For prosocial stories 100% of both groups attributed prosocial intentions to the story characters. Intent attributions: Victimizer role. The second hypotheses was that when the child is asked to imagine himself as the victimizer, aggressive boys would be more likely than age matched non-aggressive boys, to fail to acknowledge that they could have intended to
Table 3

Frequencies of Intention Categories by Story Type and Group, Victim Role Only

<table>
<thead>
<tr>
<th>Intention</th>
<th>Ambiguous, physical</th>
<th>Ambiguous, property</th>
<th>Ambiguous, non-tangible</th>
<th>Prosocial</th>
<th>Hostile</th>
<th>Accidental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hostile</td>
<td>35</td>
<td>30</td>
<td>50</td>
<td>80</td>
<td>85</td>
<td>0</td>
</tr>
<tr>
<td>Benign/accidental</td>
<td>65</td>
<td>70</td>
<td>45</td>
<td>50</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Prosocial</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Values are percentages.
perform an action that resulted in a negative consequence for another story character. To examine this hypothesis, chi-square analyses were conducted on the distribution of intention attributions for each story type (e.g., ambiguous, hostile, benign and prosocial) as well as the ambiguous story subtypes (e.g., physical outcome, property outcome, and non-tangible outcome) in order to determine if story outcome affected responses. Only attributions made when participants were asked to imagine themselves as the victimizer were included. No significant differences were found for the overall chi-square which collapsed all of the ambiguous stories into one category, $\chi^2 (2, n=119) = 3.90, p > .05$. That is, when in the role of the victimizer, no significant differences were found between groups with respect to the intentions they attributed to the victimizer in ambiguous stories with varying outcomes. It is noteworthy however, that although not significant, the pattern of responses was in the expected direction. That is 36.7% of non-aggressive participants made hostile attributions when they were the imagined victimizer compared to only 22% of aggressive participants. The rest of the participants made benign intent attributions, with the exception of one aggressive participant who attributed a prosocial intention to the victimizer in an ambiguous story.

However, significant results emerged when intent attributions were compared across each of the different types of ambiguous stories (see table 4). Specifically, for ambiguous stories where the outcome was related property, compared to non-aggressive participants, aggressive participants made significantly less hostile attributions to the victimizer when they were asked to imagine themselves in that role, $\chi^2 (1, n = 40) = 4.33, p < .05$. Only 5% of aggressive participants made hostile attributions compared to 30% of non-aggressive participants. The rest of the attributions were benign for both groups. Although not significant, a similar pattern was found for stories in which the outcome was physical harm, $\chi^2 (1, n = 40) = 3.24, p > .05$. That is, none
Table 4

Frequencies of Intention Categories by Story Type and Group, Victimizer Role Only

<table>
<thead>
<tr>
<th>Intention</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ambiguous, physical</td>
<td>Ambiguous, property</td>
<td>Ambiguous, non-tangible</td>
<td>Prosocial</td>
<td>Hostile</td>
<td>Accidental</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
</tr>
<tr>
<td>Hostile</td>
<td>15</td>
<td>0</td>
<td>30</td>
<td>5</td>
<td>65</td>
<td>66.7</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Benign/accidental</td>
<td>85</td>
<td>100</td>
<td>70</td>
<td>95</td>
<td>35</td>
<td>27.8</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Prosocial</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5.5</td>
<td>95</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Values are percentages.
of the aggressive participants attributed hostile intentions to themselves when the outcome was physical harm compared to 15% of non-aggressive participants. Finally, when the outcome was non-tangible, 65% of non-aggressive participants and 63.2% of aggressive participants attributed hostile intentions to the story character, $\chi^2 (2, n = 39) = 0.58, p > .05$. Thus, the results are somewhat consistent with the hypothesis that aggressive boys are less likely than non-aggressive boys to attribute or admit to their own hostile intentions.

In addition to examining differences in intent attributions between groups for each role (e.g., victim and victimizer), chi-square analyses were conducted to examine within group differences. It was found that, for ambiguous stories, aggressive participants were significantly less likely to attribute hostile intentions to a story character when they were in the role of the victimizer than when they were in the role of the victim, $\chi^2 (2, n = 119) = 13.74, p = .001$. Specifically, when they were the imagined victim, 55% of aggressive participants made hostile attributions to story characters in ambiguous situations. Conversely, when they were the imagined victimizer, only 22% of aggressive participants made hostile attributions to the story character. This same finding was not found for non-aggressive participants, $\chi^2 (2, n = 120) = 5.45, p > .05$. When examined for each ambiguous story subtype, this pattern was significant for both tangible outcome stories. Specifically, for physical outcomes, when they were the imagined victim, 30% of the aggressive participants attributed hostile intentions to the story character compared to 0% when they were the imagined victimizer, $\chi^2 (1, n = 40) = 7.06, p < .05$. Similarly, for property outcomes, when they were the imagined victim, 50% of aggressive participants attributed hostile intentions to story characters compared to only 5% when they were the imagined victimizer, $\chi^2 (1, n = 40) = 10.16, p = .001$. This same significant finding was not found for ambiguous stories with a non-tangible outcome. For these stories, when they were the imagined victim, 85% of aggressive
participants attributed hostile intentions to the story characters compared to 67% when they were the victimizer, $\chi^2 (2, n = 39) = 2.26, p > .05$.

**Emotion Attributions**

For the emotion attributions, participants’ responses were calculated in two different ways. First, regardless of valence (i.e., negative vs. positive), each participant received a categorical score of response appropriateness. This was calculated by determining whether the participant used only inappropriate emotion attributions, a mixture of appropriate and inappropriate responses, or only appropriate emotion attributions. A separate score was calculated for emotion attributions to the victim and emotion attributions to the victimizer.

Second, regardless of appropriateness, each participant received a categorical score of valence. This was calculated by determining whether the participant used only negative emotion attributions, a mixture of negative and positive emotion attributions, or only positive emotion attributions. A separate score was calculated for emotion attributions to the victim and emotion attributions to the victimizer. The reason for calculating participant’s emotion attributions in this way, was to allow for an exploration of both the appropriateness of participant’s responses and the emotional valence of their responses. Previous research (e.g., Nunner-Winkler & Sodian, 1988) has only examined emotional valence but has not considered the appropriateness of the responses. The present study sought to investigate both aspects of emotion information processing.

It was hypothesized that aggressive participants would be less accurate than non-aggressive participants at attributing emotions to both the victim and victimizer in hypothetical stories. Specifically, it was predicted that aggressive participants would be more likely to attribute positive emotions to story characters whose intentions matched the outcome of the story. Moreover, based on the developmental lag hypothesis, it was predicted that, compared to non-
aggressive participants, aggressive participants would be less likely to attribute mixed emotions to story characters. In order to explore this hypothesis, chi-square analyses were conducted on both the appropriateness distribution and the valence distribution for participants’ emotion attributions to the victim and to the victimizer, for each type of intention. Three sets of analyses were conducted. The first analyses were conducted overall, regardless of role. The second analyses focused on participants’ emotion attributions to both the victim and the victimizer when they were assuming the role of the victim. The third set of analyses focused on participants’ emotion attributions to both the victim and the victimizer when they were assuming the role of the victimizer. The results are as follows.

**Preliminary analyses.** When participant’s role (i.e., victim vs. victimizer) was not taken into consideration, no significant differences were found between groups with respect to the appropriateness of victim emotion attributions for each of the three types of intention (see table 5a). For hostile intentions, \( \chi^2 (2, n = 183) = 2.16, p > .05 \); for benign intentions, \( \chi^2 (2, n = 214) = 5.34, p > .05 \); and for prosocial situations, \( \chi^2 (1, n = 81) = 1.04, p > .05 \). Thus, for situations in which they attributed hostile intention to the story character, 3.5% of aggressive participants and 1% of non-aggressive participants made inappropriate emotion attributions to the victim, 96.5% of aggressive participants and 97.9% of non-aggressive participants made appropriate emotion attributions to the victim and 0% of aggressive participants and 1% of non-aggressive participants made a combination of both appropriate and inappropriate emotion attributions to the victim.

A different pattern emerged for appropriateness of victimizer emotion attributions (see table 5b). That is, significant differences were found between groups with respect to the
### Table 5a

**Frequencies of Victim Emotion Attributions by Intention Type and Group, Regardless of Role**

<table>
<thead>
<tr>
<th>Emotion Attribution</th>
<th>Hostile</th>
<th>Benign</th>
<th>Prosocial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
</tr>
<tr>
<td>Appropriate</td>
<td>97.9</td>
<td>96.5</td>
<td>93.2</td>
</tr>
<tr>
<td>Inappropriate</td>
<td>1</td>
<td>3.5</td>
<td>1</td>
</tr>
<tr>
<td>Mixed appropriateness</td>
<td>1</td>
<td>0</td>
<td>5.8</td>
</tr>
<tr>
<td>Negative</td>
<td>100</td>
<td>97.9</td>
<td>93.2</td>
</tr>
<tr>
<td>Positive</td>
<td>0</td>
<td>2.3</td>
<td>5.8</td>
</tr>
<tr>
<td>Mixed negative &amp; positive</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Values are percentages.
Table 5b

Frequencies of Victorizer Emotion Attributions by Intention Type and Group, Regardless of Role

<table>
<thead>
<tr>
<th>Emotion Attribution</th>
<th>Hostile</th>
<th>Benign</th>
<th>Prosocial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
</tr>
<tr>
<td>Appropriate</td>
<td>33.3</td>
<td>27.9</td>
<td>90.3</td>
</tr>
<tr>
<td>Inappropriate</td>
<td>44.8</td>
<td>62.8</td>
<td>8.7</td>
</tr>
<tr>
<td>Mixed appropriateness</td>
<td>21.9</td>
<td>9.3</td>
<td>1.0</td>
</tr>
<tr>
<td>Negative</td>
<td>100</td>
<td>93.9</td>
<td>92.9</td>
</tr>
<tr>
<td>Positive</td>
<td>0</td>
<td>3.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Mixed negative &amp; positive</td>
<td>0</td>
<td>3.0</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Note: Values are percentages.
appropriateness of victimizer emotion attributions for hostile intentions, $\chi^2(2, n = 182) = 7.69, p < .05$. Specifically, compared to non-aggressive participants, aggressive participants made more inappropriate and less mixed attributions to the victimizer. Thus, for situations in which they attributed hostile intention to the story character, 62.8% of aggressive participants compared to 44.8% of non-aggressive participants made inappropriate emotion attributions to the victimizer, 27.9% of aggressive participants and 33.3% of non-aggressive participants made appropriate emotion attributions to the victimizer, and 9.3% of aggressive participants compared to 21.9% of non-aggressive participants made a combination of both appropriate and inappropriate emotion attributions to the victimizer.

No significant differences were found between groups with respect to the valence of their emotion attributions to the victim or the victimizer for any of the intent categories.

**Emotion attributions: Victim role.** Chi-square analyses were also conducted when participant role was taken into consideration. When in the role of the victim, no significant differences were found between groups with respect to either the appropriateness or the valence of their emotion attributions to the victim (see table 6a) and the victimizer (see table 6b) for any of the intent categories.

**Emotion attributions: Victimizer role.** When participants were asked to assume the role of the victimizer, some significant differences were found (see tables 7a & 7b). Specifically, although there were no significant differences between groups with respect to appropriateness of victim emotion attributions when the intentions they attributed to victimizers were hostile, $\chi^2(2, n = 76) = 1.58, p > .05$, or prosocial (no chi-square statistic available because for both groups, 100% of the emotion attributions were appropriate), significant differences between groups were found when participants attributed benign intentions to story characters, $\chi^2(2, n = 122) = 10.05, p > .05$. Table 6a
Frequencies of Victim Emotion Attributions by Intention Type and Group, Victim Role Only

<table>
<thead>
<tr>
<th>Emotion Attribution</th>
<th>Hostile</th>
<th>Benign</th>
<th>Prosocial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
</tr>
<tr>
<td>Appropriate</td>
<td>100</td>
<td>94.3</td>
<td>95.6</td>
</tr>
<tr>
<td>Inappropriate</td>
<td>0</td>
<td>5.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Mixed appropriateness</td>
<td>0</td>
<td>0</td>
<td>2.2</td>
</tr>
<tr>
<td>Negative</td>
<td>100</td>
<td>96.2</td>
<td>91.1</td>
</tr>
<tr>
<td>Positive</td>
<td>0</td>
<td>3.8</td>
<td>8.9</td>
</tr>
<tr>
<td>Mixed negative &amp; positive</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Values are percentages.
Frequencies of Victimizer Emotion Attributions by Intention Type and Group, Victim Role Only

<table>
<thead>
<tr>
<th>Emotion Attribution</th>
<th>Hostile</th>
<th>Benign</th>
<th>Prosocial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
</tr>
<tr>
<td>Appropriate</td>
<td>28.3</td>
<td>28.3</td>
<td>88.9</td>
</tr>
<tr>
<td>Inappropriate</td>
<td>54.7</td>
<td>66</td>
<td>8.9</td>
</tr>
<tr>
<td>Mixed appropriateness</td>
<td>17</td>
<td>5.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Negative</td>
<td>100</td>
<td>89.5</td>
<td>90.7</td>
</tr>
<tr>
<td>Positive</td>
<td>0</td>
<td>5.3</td>
<td>0</td>
</tr>
<tr>
<td>Mixed negative &amp; positive</td>
<td>0</td>
<td>5.3</td>
<td>9.30</td>
</tr>
</tbody>
</table>

Note: Values are percentages.
Table 7a

Frequencies of Victim Emotion Attributions by Intention Type and Group, Victimizer Role Only

<table>
<thead>
<tr>
<th></th>
<th>Hostile</th>
<th></th>
<th>Benign</th>
<th></th>
<th>Prosocial</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
<td>AGG</td>
</tr>
<tr>
<td>Emotion Attribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate</td>
<td>95.3</td>
<td>100</td>
<td>91.4</td>
<td>92.2</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Inappropriate</td>
<td>2.3</td>
<td>0</td>
<td>0</td>
<td>7.8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mixed appropriateness</td>
<td>2.3</td>
<td>0</td>
<td>8.6</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Negative</td>
<td>100</td>
<td>100</td>
<td>94.8</td>
<td>98.4</td>
<td>5.3</td>
<td>19</td>
</tr>
<tr>
<td>Positive</td>
<td>0</td>
<td>0</td>
<td>3.4</td>
<td>1.6</td>
<td>89.5</td>
<td>71.4</td>
</tr>
<tr>
<td>Mixed negative &amp; positive</td>
<td>0</td>
<td>0</td>
<td>1.7</td>
<td>0</td>
<td>5.3</td>
<td>9.5</td>
</tr>
</tbody>
</table>

Note: Values are percentages.
Table 7b

Frequencies of Victimizer Emotion Attributions by Intention Type and Group, Victimizer Role Only

<table>
<thead>
<tr>
<th>Intention</th>
<th>Hostile</th>
<th>Benign</th>
<th>Prosocial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
</tr>
<tr>
<td>Emotion Attribution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate</td>
<td>39.5</td>
<td>27.3</td>
<td>91.4</td>
</tr>
<tr>
<td>Inappropriate</td>
<td>32.6</td>
<td>57.6</td>
<td>8.6</td>
</tr>
<tr>
<td>Mixed appropriateness</td>
<td>27.9</td>
<td>15.2</td>
<td>0</td>
</tr>
<tr>
<td>Negative</td>
<td>100</td>
<td>100</td>
<td>94.5</td>
</tr>
<tr>
<td>Positive</td>
<td>0</td>
<td>0</td>
<td>3.6</td>
</tr>
<tr>
<td>Mixed negative &amp; positive</td>
<td>0</td>
<td>0</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Note: Values are percentages.
Compared to non-aggressive participants, aggressive participants made more inappropriate and less mixed emotion attributions to victims (see table 7a). Thus, when they were the imagined victimizer, for situations in which they attributed benign intentions to the story character, 7.8% of aggressive participants compared to 0% of non-aggressive participants made inappropriate emotion attributions to the victim. 92% of aggressive participants and 91.4% of non-aggressive participants made appropriate emotion attributions to the victim and 0% of aggressive participants compared to 8.6% of non-aggressive participants made a combination of both appropriate and inappropriate emotion attributions to the victim. This suggests that non-aggressive participants were able to acknowledge that the victim may feel both appropriate emotions (e.g., upset that they were hurt) and inappropriate emotions (e.g., angry even though it was an accident) at the same time. Aggressive participants on the other hand, did not acknowledge that a victim could feel both types of emotions simultaneously.

With respect to appropriateness of emotion attributions to the victimizer, when assuming the role of the victimizer (see table 7b), there were no significant differences found between groups when they attributed benign intentions to the victimizer, $\chi^2(2, n = 122) = 2.79, p > .05$. Although not significant, a trend was found for hostile intent attributions, $\chi^2(2, n = 76) = 4.87, p < .10$. Specifically, 57.6% of aggressive participants compared to 32.6% of non-aggressive participants made inappropriate emotion attributions to the victimizer, 27.3% of aggressive participants and 39.5% of non-aggressive participants made appropriate emotion attributions to the victimizer, and 15.2% of aggressive participants compared to 27.9% of non-aggressive participants made a combination of both appropriate and inappropriate emotion attributions to the victimizer. A significant difference was found between groups when they attributed a prosocial intention to the story character, $\chi^2(2, n = 40) = 4.02, p < .05$. Compared to non-aggressive participants, aggressive participants made significantly more inappropriate attributions to the story victimizer.
Results indicated that 19% of the aggressive participants compared to 0% of the non-aggressive participants made inappropriate emotion attributions to victimizers when they attributed prosocial intentions to the victimizer. This suggests that aggressive participants were more likely to focus on the negative aspects of prosocial behaviour (e.g., when sharing you end up giving up something).

No significant differences were found between groups with respect to the valence of their emotion attributions to the victim or the victimizer for any of the intent categories.

In addition to the analyses examining participants’ emotion attributions to both the victim and the victimizer for each type of intent attribution, similar analyses were conducted examining participants’ emotion attributions to both the victim and victimizer for each type of story. One significant result was found with respect to ambiguous stories where the outcome was related to property. Specifically, when they were imagined to be the victim, aggressive participants made significantly more inappropriate victimizer emotion attributions than did non-aggressive participants, \(\chi^2 (2, n = 40) = 7.11, p < .05\). That is, 65% of aggressive participants compared to 25% of non-aggressive participants made inappropriate victimizer emotion attributions. For example, for a story in which the victim and the victimizer bump into each other and drop their belongings and when everything gets picked up the victimizer ends up with the victim’s candy, one aggressive participant responded that the victimizer would feel happy because he now has the candy. Although some non-aggressive participants made similar responses, the majority of them acknowledged that the victimizer would feel bad that he ended up with the victim’s candy or would feel good because he helped the victim pick up his belongings and was going to give the candy back to the victim.
Emotion Justifications

Tables 8 and 9 present the mean percentage of use of victim justifications and victimizer justifications by story type and group, respectively. In order to examine participant’s justifications for their emotion attributions, the proportionate usage of each justification category was calculated and corrected for non-normality using an arcsine transformation. Because each of the 6 story subtypes (i.e., ambiguous physical outcome, ambiguous property outcome, ambiguous non-tangible outcome, prosocial, hostile, accidental) had different outcomes, it was reasoned that justifications should be examined overall and for each story subtype. Only elaborated justifications comprising 10% or more of total justifications within either group for a given story were analyzed. A multivariate ANOVA was performed on arcsine transformed justifications to examine differences in the type of justifications used by the two groups for each story subtype. Separate ANOVA’s were conducted for emotion attributions to the victim and emotion attributions to the victimizer. Thus 12 ANOVA’s were conducted in all.

With respect to emotion attribution justifications to the victim, no significant differences were found for any of the story subtypes (see table 8). However, significant differences were found for participant’s emotion attribution justifications to the victimizer (see table 9). Specifically, for ambiguous stories where the outcome was property damage, compared to aggressive participants, non-aggressive participants made more references to ‘anticipated consequences’ as a reason for their emotion attributions (4% versus 0%), \( F(1, 78) = 3.97, p = .05 \). For the two stories included in the hostile category, compared to non-aggressive participants, aggressive participants made more references to ‘outcome of the act’ as a reason for their emotion attribution to the victimizer (30% versus 58%), \( F(1, 78 ) = 7.02, p < .05 \).
Table 8

Frequencies of Victim Justification by Story Type and Group

<table>
<thead>
<tr>
<th>Justification Category</th>
<th>Ambiguous, physical</th>
<th>Ambiguous, property</th>
<th>Ambiguous, non-tangible</th>
<th>Prosocial</th>
<th>Hostile</th>
<th>Accidental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome</td>
<td>NON 68</td>
<td>AGG 57</td>
<td>NON 65</td>
<td>AGG 71</td>
<td>NON 58</td>
<td>AGG 46</td>
</tr>
<tr>
<td>Act/action</td>
<td>NON 18</td>
<td>AGG 26</td>
<td>NON 3</td>
<td>AGG 7</td>
<td>NON 28</td>
<td>AGG 43</td>
</tr>
<tr>
<td>Intention, matched</td>
<td>NON 0</td>
<td>AGG 1</td>
<td>NON 0</td>
<td>AGG 0</td>
<td>NON 1</td>
<td>AGG 3</td>
</tr>
<tr>
<td>Intention, assumed/misattribution</td>
<td>NON 3</td>
<td>AGG 5</td>
<td>NON 11</td>
<td>AGG 11</td>
<td>NON 1</td>
<td>AGG 1</td>
</tr>
<tr>
<td>Intention, mismatched</td>
<td>NON 4</td>
<td>AGG 5</td>
<td>NON 1</td>
<td>AGG 4</td>
<td>NON 0</td>
<td>AGG 0</td>
</tr>
<tr>
<td>Moral/rights</td>
<td>NON 9</td>
<td>AGG 1</td>
<td>NON 13</td>
<td>AGG 6</td>
<td>NON 6</td>
<td>AGG 5</td>
</tr>
<tr>
<td>Empathic</td>
<td>NON 0</td>
<td>AGG 0</td>
<td>NON 0</td>
<td>AGG 0</td>
<td>NON 0</td>
<td>AGG 3</td>
</tr>
<tr>
<td>Anticipated consequence</td>
<td>NON 3</td>
<td>AGG 5</td>
<td>NON 8</td>
<td>AGG 1</td>
<td>NON 1</td>
<td>AGG 4</td>
</tr>
<tr>
<td>Irrelevant/tangential</td>
<td>NON 0</td>
<td>AGG 0</td>
<td>NON 0</td>
<td>AGG 0</td>
<td>NON 3</td>
<td>AGG 0</td>
</tr>
</tbody>
</table>

Note: Values are mean percentages and may not sum to 100 due to rounding.
### Table 9

**Frequencies of Victimizer Justification by Story Type and Group**

<table>
<thead>
<tr>
<th>Justification Category</th>
<th>Ambiguous, physical</th>
<th>Ambiguous, property</th>
<th>Ambiguous, non-tangible</th>
<th>Prosocial</th>
<th>Hostile</th>
<th>Accidental</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
<td>AGG</td>
<td>NON</td>
<td>AGG</td>
</tr>
<tr>
<td>Outcome</td>
<td>31</td>
<td>40</td>
<td>44</td>
<td>36</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Act/action</td>
<td>16</td>
<td>16</td>
<td>11</td>
<td>19</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>Intention, matched</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Intention, assumed/misattribution</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Intention, mismatched</td>
<td>33</td>
<td>30</td>
<td>18</td>
<td>28</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Moral/rights</td>
<td>5</td>
<td>1</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Empathic</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>Anticipated consequence</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Irrelevant/tangential</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>15</td>
<td>22</td>
</tr>
</tbody>
</table>

Note: Values are mean percentages and may not sum to 100 due to rounding.
Chapter IV

Discussion

The discussion will proceed as follows. First, for each hypothesis, the results will be explained and interpreted. Second, the major limitations of this study will be reviewed. Finally, directions for future research will be considered.

Intent Attributions

Contrary to the hypothesis, no significant differences were found between the aggressive participant’s and the non-aggressive participant’s attributions of intentions to story characters in ambiguous situations. When the participants were asked to imagine themselves as the victim, 55% of both groups attributed hostile intentions to story characters in ambiguous situations. There are two possible interpretations for this finding. The first is that, compared to previous studies assessing intent attributions, aggressive participants in the present study made less hostile attributions to story characters, making their responses similar to the non-aggressive participants. The second possible interpretation is that, compared to previous research in the area, the non-aggressive participants in this study made more hostile attributions to story characters, making their responses similar to the aggressive participants.

In order to examine these two possible explanations, the literature was reviewed in an effort to discern a baseline of responding for both groups. This proved to be a difficult task with inconclusive findings. For example, one study (Dodge & Somberg, 1987) treated participant’s responses as continuous and thus participant’s attributions were coded as -1 if prosocial, 0 if accidental, and 1 if hostile. These authors manipulated trials so that participants were relaxed or felt threatened. The authors did not find attributional differences between the aggressive and non-aggressive groups under ‘relaxed’ conditions. Under conditions of threat however,
differences emerged. The mean response scores for each group were reported (the aggressive group had a mean response of 0.49 and the control group had a mean of 0.12). However, it was not stated whether the mean scores provided were for the relaxed condition, the threat condition, or across both conditions. Thus, it was not possible to establish a baseline response measure for this study.

Similarly, a study by Quiggle et al. (1992) assessed hostile attributions by asking participants to indicate “how much the kid...was trying to be mean” (p.1310). Participants could choose a response from a four-point rating scale ranging from 1 “not at all” to 4 “very much”. Participant’s responses were calculated for six stories and means were presented for each of the participant groups (e.g., control group and aggressive group). However, the mean hostile intent scores reported are difficult to interpret. Specifically, for the control group, the mean hostile intent score was 11.90 and for the aggressive group, the mean score was 13.12. Given that participant’s responses ranged from 1-4, it is difficult to understand how their mean scores could be 11 and 13. No other data concerning how many participants made hostile attributions was provided.

Thus, after reviewing the studies that examined aggressive children’s intent attributions, it was difficult to establish which group of participants in the present study responded differently than in previous studies. Different explanations would be advanced to account for the null findings depending on which group responded contrary to the literature. However, given that it is difficult to determine which group is different at this point in time, some explanations for each possible interpretation will be considered.

To begin, if the reason for the null finding is related to aggressive participants in the present study making fewer hostile attributions than is typically the case in other studies, there
are a number of possible explanations. However, it is noteworthy that although a number of studies have consistently found that, compared to non-aggressive children, aggressive children make more hostile attributions of intent, there are some studies that have failed to find such an attributional bias (Orobio de Castro et al., 2002). In fact, because of the variability across studies with respect to the findings of aggressive children’s intent attributions, Orobio de Castro et al. (2002) used meta-analytic techniques in order to discern effect sizes across studies and to investigate study characteristics that might be associated with the various findings. A number of their findings could be possible explanations for the null findings in the present study.

Specifically, Orobio de Castro et al. (2002) examined potential participant and study variables that could serve as possible moderators for effect sizes. With respect to participant variables, they found that, compared to studies that selected participants solely on the basis of aggression, studies that also included sociometric status as a participant selection criterion had larger mean effect sizes for the relation between hostile attribution of intent and aggressiveness. Related to the present study, one possible reason for the null finding is that aggressive participants were selected based solely on the clinic’s referral of the child as aggressive. Thus, the participants in the present study were not necessarily rejected-aggressive boys, which might have decreased the likelihood of finding significant differences between groups.

In addition to participant characteristics, there were some methodological characteristics of the present study, which could be related to the null findings. Specifically, research has indicated that the hostile attributional bias in aggressive children is displayed only when the children feel that they are personally involved in the social interactions presented (Dodge & Frame, 1982; Orobio de Castro et al., 2002). Thus, the way that stimuli are presented to participants can affect the degree to which participants feel involved in the presented situations.
Orobio de Castro et al. (2002) found that stimulus presentation was related to effect size of the hostile attribution of intent in aggressive children. That is, video and pictorial presentation of stimuli resulted in smaller or absent effect sizes in comparison to stimuli that were read to or by the children. The authors reasoned that extraneous information in pictures (e.g., actor’s appearances, etc.) may distract the participants from the negative event and would serve to “distance” the participant from imagined involvement in the story. With respect to the present study, although the stimuli were read to the participants, each story was accompanied by an illustration. Although initially the illustrations were included to help the participants follow the stories, they might have had an adverse effect on story comprehension. That is, boys might have been unable to imagine themselves as participants in the story, which would have limited the finding of a hostile attributional bias. In fact, a number of the participants responded in the third person to story questions which directly included them in the story. For example, a number of participants responded, “he would feel…” despite being asked “how would you feel”.

Unfortunately, in the present study the extent to which participants felt involved in the story was not assessed and therefore could not be empirically examined as a potential explanation of the null findings.

Another methodological factor that has been suggested to be related to attributional bias findings involves story content (Orobio de Castro et al., 2002). As discussed by Orobio de Castro et al. (2002), the majority of hostile attributions of intent studies found in the literature fail to provide examples of their stories. Instead, studies simply describe the content of the stories in general terms such as “peer group entry” stories or “provocation” stories. These descriptors do not capture whether the stories include outcomes. For example, one of the studies reviewed in the meta-analysis included a story involving three children who are unknown to the participant
walking toward the participant. For this story, the child does not know the outcome of the story, which, if the three children had hostile intentions, could potentially be severe. Other studies included stories, such as the ones included in the present study, which provide outcomes to the participants (e.g., you fall down and scrape your knee). Thus, another potential explanation for the null findings of the present study could be related to the selection of story outcome. Preliminary support for this contention is provided by the finding that both aggressive and non-aggressive participants in the present study attributed more hostile intentions to the story character when the outcome involved hurt feelings as opposed to tangible outcomes such as property damage or physical harm. Given that the studies reviewed in the literature do not present a complete description of each story used in their study, it is difficult to determine the extent to which the present study’s selection of story outcomes differed from other studies. However, the selection of story outcomes could be one of many potential reasons for the null findings.

The meta-analysis by Orobio de Castro et al. (2002) also investigated the possible moderating effect of the number of stories presented to participants on the hostile attribution of intent and aggressive children. Their findings were inconclusive because the number of situations presented was so closely related to method of stimulus presentation. However, the present study presented participants with 12 vignettes, which seems to be a larger number of stories than is typically case [e.g., Dodge (1980) presented boys with 4 stories; Feldman and Dodge (1987) presented children with 3 stories; and Quiggle et al. (1992) presented children with 6 stories]. Thus another possible explanations for the null finding in the present study could be related to the large number of stories presented in that, as the number of stories presented increases, so too does the likelihood that participant’s automatic processing is interrupted.
One final explanation for the null finding of a hostile attributional bias in the aggressive participants in the present study is related to the format of the interviews in the present study. That is, none of the studies reviewed assessed children’s attribution of both intentions and emotions to the same story characters. Thus, one further possible reason for the difference found between this study and other studies investigating aggressive children’s intent attributions could be related to the effect that asking participants to consider both the victim and the victimizer’s emotions had on participant’s responses. It is possible that having participants contemplate the story character’s emotions changed their consideration of actor’s intentions in subsequent stories. Part of Crick and Dodge’s (1994) theory states that the hostile attribution of intent is a result of aggressive children’s automatic processing of social information, therefore by asking participants to consider various aspects of social situations, this automatic processing might have been altered or interrupted. Obviously further research is necessary to examine each of these possible explanations for the findings of the present study.

As stated previously, it is unclear whether the lack of group differences in intent attributions found in the present study is related to the aggressive participants making fewer hostile attributions than in previous studies or is instead related to the non-aggressive participants in the present study making more hostile attributions than is typically the case. A number of plausible explanations were advanced to account for potential reasons why the aggressive participants might have made fewer hostile attributions, and now the discussion will consider a few possible explanations to account for why the non-aggressive group might have made more hostile attributions.

One possible reason why the non-aggressive participants might have made more hostile attributions than is typically the case could be related to psychological characteristics of the
present sample. Although, for the present study, participant’s externalizing sores on the CBCL were reported, because none of the studies reviewed reported participant scores on similar rating scales, it was not clear whether the non-aggressive participants in the present study are more aggressive or have more internalizing symptoms than non-aggressive participants in previous studies. Thus, it is plausible that the participants in the present study were psychologically different from the majority of non-aggressive participants found in the literature.

Another possible explanation, which could explain the potential discrepant responses between the control group in the present study and the control group found in other studies, could be related to cultural factors. That is, Dodge and colleagues conducted the majority of the studies investigating the hostile attributional bias in aggressive children in the 1980s and the early 1990s. Historically, the political, social, technological and economic climate of the past two decades was quite different than the current context in which children are exposed. Thus, although speculative, one reason for the potential differences found between the present study and ones conducted previously could be related to the fact that in the year 2002, non-aggressive boys tend to have a hostile attributional bias in ambiguous situations. If this were true, the reasons for such a finding are endless. For example, as a result of increased technological sophistication, there are a number of video game systems on the market that promote violent video games with realistic graphics. Boys who are repeatedly exposed to such games may develop different views or interpretations of the world. They may begin to perceive their reality in fantasy-like ways, one of which may include a tendency to perceive others’ as possessing hostile intentions. Careful research protocols would need to be initiated to investigate this hypothesis. Nonetheless, until empirically examined, the historical context remains one of many
possible explanations, which could account for potential differences between the control group in the present study and the control groups found in other studies.

Similarly, another potential way in which cultural and social factors may have influenced the present study may be related to parenting factors. Parenting variables can influence child behaviour in a number of ways. For example, research has shown that harsh parental discipline is related to childhood aggressive behaviour (e.g., Weiss, Dodge, Bates & Petit, 1992). Moreover, consistent with social-learning theory, children adopt behaviours modeled by their caregivers (Bandura, 1977). Thus, related to the present study, the participants may be reflecting current parental attitudes and behaviours.

One final note regarding the finding that aggressive and non-aggressive participants did not differ with respect to their attribution of hostile intentions to story characters in ambiguous situations when they were the imagined victims. Although the present study differs from previous studies along a number of dimensions (e.g., participant differences, methodological differences, etc.) which may account for the null findings regarding a hostile attributional bias, it still remains plausible that the hostile attributional bias as it has been conceptualized in the literature, is not found in clinic-referred aggressive participants. Because none of the studies reviewed included a sample of clinic-referred aggressive boys, there are no studies with which to compare the present findings to. Moreover, the majority of the studies reviewed employed strict selection criteria and controls which, although may serve to increase effect size, in turn serves to decrease generalizability of findings to real world clinic settings. If the social information processing difficulties associated with aggressive children are to be beneficial in informing treatment programs, they must be examined with populations who would most likely be referred for treatment. The reality is that many aggressive children have multiple difficulties and
therefore strict controls may not adequately represent all aggressive children. In addition, given that a number of studies have found only small effect sizes and given that a number of factors differentially affect the relation between aggression and hostile attribution of intent (Orobio de Castro et al., 2002) it may be that this bias is not elicited automatically in social situations. Rather, perhaps this bias is only elicited under carefully controlled and manipulated conditions.

Although no significant findings were found with respect to the first hypothesis, significant findings were found when the child was asked to imagine himself as the victimizer. Specifically, for stories where the outcome was related to property, compared to non-aggressive participants, aggressive participants made significantly less hostile intent attributions. A possible explanation for such a finding comes from an examination of the pattern of participant’s responses. Specifically, when asked to assume the role of the victimizer, aggressive participants made no hostile attributions when the outcome was physical harm and only 5% made hostile attributions when the outcome was related to property. However, 66.7% of the aggressive participants made hostile attributions when the outcome was hurt feelings. A possible explanation for such a finding could be related to participant’s personal experiences. That is, the aggressive participants might be familiar with situations in which they cause physical harm to a person or damage property in some way. Thus, they might also be familiar with generating possible explanations (whether true or not) to account for such outcomes. In contrast, the stories involving hurt feelings typically involve the victimizer excluding a child from a social event (e.g., not yet inviting a child to a birthday party and not allowing a child to play a game). Because aggressive children might also tend to be rejected children, they might not have experience rejecting others from social situations since they are the ones that are typically rejected. This could prevent them from being able to easily generate a number of possible
explanations for such behaviour. Or, perhaps if they are rejected, aggressive children are primed to believe that such rejection is done for hostile purposes.

Regardless of the reason, in addition to the finding that, compared to non-aggressive participants, aggressive participants made significantly less hostile attributions to victimizers in stories involving property damage, it was also found that aggressive participants made significantly less hostile attributions overall when they were the victimizer than when they were the imagined victim. This finding provides some preliminary support for the hypothesis that aggressive boys fail to accept responsibility for their actions. However, this seems to be the case only for ambiguous stories. For stories where the intention was clearly hostile (i.e., hostile stories), aggressive participants made just as many hostile intent attributions when they were the victim as they did when they were the victimizer.

Emotion Attributions

With respect to the participant's emotion attributions, hypotheses were generated from the literature review. Specifically, as discussed previously, researchers have suggested that aggressive boys developmentally lag behind their same age peers with respect to their social and emotional information processing abilities (e.g., Gibbs, 1991). Previous research has found that, compared to older children, younger children tend to make more positive emotion attributions to victimizers and tend to focus on the match between an actor's intentions and emotions as a reason for their emotion attribution (e.g., Nunner-Winkler & Sodian, 1988). Given the hypothesis that aggressive boys lag developmentally behind their peers, then it would follow that they would be expected to perform similar to younger children. Specifically, the present study hypothesized that aggressive boys would be less accurate than age matched non-aggressive boys at attributing emotions to both the victim and victimizer in hypothetical stories. It was predicted
that aggressive boys would be more likely to attribute positive emotions to story characters whose intentions matched the outcome of the story. Moreover, based on the developmental lag hypothesis, it was predicted that, compared to non-aggressive boys, aggressive boys would be less likely to attribute mixed emotions to story characters.

The results of the present study provide some initial support for this hypothesis. Specifically, when not considering the participant’s role in the story, the aggressive participants’ responses were equally appropriate and negative/positive as the non-aggressive participants with respect to their emotion attributions to the victims of the stories. Thus, contrary to what would be expected, aggressive participants were able to attribute appropriate emotions to victims. It should be noted however, that participant’s responses were coded for negativity or positivity and for appropriateness, they were not coded however for specific emotions. Thus, it is unknown whether the two groups differed with respect to the qualitative emotions they attributed to victims (e.g., anger, sadness, fear, etc.).

Although aggressive participants made appropriate emotion attributions to victims, when the intentions they attributed were hostile, compared to non-aggressive participants, aggressive participants, made more inappropriate emotion attributions to the victimizer and less appropriate or mixed appropriate and inappropriate emotion attributions to the victimizer. For example, for a story in which the victimizer grabs the victim’s chocolate bar and begins to eat it, a number of aggressive participants responded that the victimizer would feel happy that he has the chocolate bar. Although some of the non-aggressive participants attributed similar emotions to the victimizer, a number of them also attributed appropriate feelings such as guilt or remorse. Thus, the non-aggressive participants were more likely to acknowledge that the victimizer could feel both happy for having the chocolate bar (inappropriate emotion) and remorseful (appropriate) at
the same time. This is consistent with the hypothesis that aggressive boys, like young non-aggressive children, have difficulty attributing mixed emotions to story characters. However, instead of the difficulty lying in the inability to attribute both negative and positive emotions to the same story character, as is suggested in the literature, perhaps the difficulty is related more to participants being unable to attribute both appropriate and inappropriate emotions to the same story character. The possibility exists that aggressive boys are quite concrete with respect to their attributions and once they believe that an individual intends to perform an act, they can not conceptualize that a person whom they have labeled as ‘bad’ or ‘mean’ could experience both inappropriate emotions as well as appropriate emotions such as guilt. Perhaps, they think in all or nothing terms in that a victimizer either feels good or they feel bad. Some preliminary support for this contention comes from the finding that, in the present study, no difference was found between the valence of emotion attributions between the two groups. This suggests that perhaps the difference found in previous studies was related to appropriateness as opposed to valence. However, future research would need to address this contention more explicitly before any conclusions can be drawn.

When participant’s role in the story was taken into account, both groups made similar emotion attributions when they assumed the role of the victim. Thus, contrary to what would be expected both groups of participants made similar responses to story characters. However, differences between groups emerged when the participants were asked to assume the role of the victimizer. Specifically, when the intention they attributed to the victimizer (i.e., themselves) was benign, compared to non-aggressive participants, aggressive participants were more likely to attribute inappropriate emotion attributions to victims as opposed to mixed emotion attributions. Inappropriate victim responses included comments such as “he would be mad because he would
think that I did it on purpose” or “he would feel ok because he knows he deserves to not be invited”.

This finding provides some preliminary support for two of the study’s hypotheses. Specifically, when the aggressive participants responded that the outcome occurred accidentally, they tended to make inappropriate emotion attributions to the victim. This pattern of responding suggests that aggressive boys might in fact blame the victim as a cause for the negative outcome. The aggressive boys might fail to take responsibility for their contribution to a situation with a negative outcome by portraying the victim in a negative manner. For example, some of the aggressive participants responded that the victim was angry even though the outcome occurred accidentally. Claiming that the victim was angry and unable to forgive the victimizer, serves to depict the victim in a negative manner thereby diverting attention away from the victimizer.

Moreover, when the intention that they attributed to the victimizer was benign, 8.6% of non-aggressive participants compared to 0% of aggressive participants made mixed emotion attributions to victim (e.g., both appropriate and inappropriate emotions). This findings provides support for the hypothesis that aggressive boys have difficulty attributing both appropriate and inappropriate emotions to a single story character.

In addition, no significant differences were found with respect to the valence of emotion attributions to the story characters when participants were asked to imagine themselves as the victimizers in the stories. This suggests that the difference between groups that was found in previous studies may not be with respect to valence but might actually be a difference with respect to appropriateness of emotion attributions.

Another significant finding is that, when in the role of the victimizer 19% of aggressive participants made inappropriate victimizer emotion attributions for prosocial situations compared
to 0% of non-aggressive participants. Inappropriate victimizer responses for prosocial situations included statements such as “I (victimizer) would be happy that he sat with me because now he is my friend instead of theirs”, “unhappy that I gave him half of my sandwich because now I only have half of a sandwich”. Thus, compared to non-aggressive participants, aggressive participants were much more likely to focus on selfish reasons for the emotion attributions to the victimizer. There are a number of possible explanations for this finding. The first could be related to the hypothesis that aggressive boys are unable to attribute mixed emotions to individuals. That is, although 81% of the aggressive participants were able to attribute appropriate emotions to the victimizers in prosocial situations, the other 19% of the participants seemed to only attribute inappropriate emotions to the story characters. Thus, the aggressive participants tended to be more extreme with respect to their attributions, in that an individual is either appropriate or inappropriate but not both. Another potential explanation for such a finding is that, compared to non-aggressive boys, aggressive boys tend to be more self-focused. Thus, although they may identify feeling happy because they helped someone out, perhaps their reason is because they did something good, which might translate to thinking that they are good which would bring about positive consequences and therefore positive emotions. Non-aggressive boys on the other hand, might feel good because they made someone else feel good. Although participants were asked to provide justifications for their emotion attributions, unfortunately, responses were often taken at face value and were not probed deep enough to uncover the depth of reasoning necessary to determine whether this contention was true.

Overall, the results suggest some interesting patterns with respect to the accuracy and ability of aggressive boys to attribute emotions to story characters. Specifically, results provide some initial support for the developmental lag hypothesis in that, similar to younger children,
aggressive boys were less likely to attribute mixed emotions to story characters. However, unlike
the previous literature, it was not the inability to attribute both negative and positive emotions
simultaneously to story characters but rather difficulty attributing both appropriate and
inappropriate emotions to the same story character.

One final significant finding that yields some interesting explanations is the finding that
regardless of intention, when asked to assume the role of the victim, compared to non-aggressive
participants, aggressive participants made significantly more inappropriate victimizer emotion
attributions to ambiguous stories where the outcome was related to property. One possible
explanation for this finding is that this group of stories contains a scenario in which the
victimizer receives a tangible outcome. For instance, in one story the victimizer ends up with the
victim’s candy. The majority of other stories involve non-tangible outcomes in that the victim
gets hurt, or something happens to the victim. For stories involving tangible outcomes (property
outcome), 65% of the aggressive participants made inappropriate victimizer emotion attributions
whereas only 25% of the non-aggressive participants made inappropriate victimizer emotion
attributions. This suggests that in some situations aggressive boys are less accurate than non-
aggressive boys at attributing emotions to individuals in ambiguous situations. Moreover, this
finding suggests that, contrary to the literature, story outcome may affect attributional accuracy.

Emotion Justifications

Story outcome was also related to participant’s emotion justifications. In particular, it was
found that for stories where the outcome was related to property, compared to aggressive
participants, non-aggressive participants made more reference to ‘anticipated consequences’ as a
reason for their emotion attributions to the victimizer. An example of responses included in this
category are: “he felt good because he was going to help the other kid pick up his stuff” and “he
felt bad because now the kid is all wet and sticky and his field trip will be ruined”. Thus, non-aggressive participants focused on how the victimizer’s behaviour affected some future outcome. This result was only found for stories involving property outcome, which provides further evidence for the suggestion that story outcome does affect participant’s responses.

With respect to emotion justifications it was hypothesized that, consistent with the developmental lag hypothesis, compared to non-aggressive participants, aggressive participants would focus more on the outcome of the act as a reason for the emotion attribution instead of the moral aspects of the situation. As indicated previously, in an attempt to gain a richer understanding of participant’s justifications, the present study used an expanded coding system, which employed 9 justification categories. For the stories in which the actor’s intentions were presented as hostile, there was a tendency for aggressive participants to focus more on the outcome of the act as a reason for their emotion attributions to the victimizer. However, results did not reveal that non-aggressive participants used moral justifications more than aggressive participants. Thus the results of the present study provide some initial support for the developmental lag hypothesis.

**Limitations of the Present Study**

Although some aspects of the present study which might have affected the outcome have been presented throughout the discussion, these features are not necessarily limitations but rather factors that are possible explanations for the findings. In addition to the factors mentioned throughout, there were a few major limitations of the present study, which are noteworthy.

First, as a result of the extreme difficulty encountered with respect to accessing clinic-referred participants, it was necessary to contact a number of different children’s mental health centers. However, expanding the number of clinics, increased the heterogeneity of the clinic
group. Specifically, over a quarter of the participants are from an adolescent in-patient psychiatric facility. Children in such a facility tend to present with a number of severe comorbid difficulties. Thus, some of the participants presented with psychotic symptomology, etc. The outpatient participants rarely presented as extreme as the in-patient participants. This made grouping together participant responses questionable due to the differences between clinic groups. Moreover, participants ranged from conduct disordered boys to aggressive boys with ADHD. Given that severity of aggression is related to effect size of the hostile attributional bias (Orobio de Castro et al., 2002), by grouping together severe and mildly aggressive participants, information is lost concerning the relationship between severity of aggression and how it is related to social information processing difficulties.

Moreover, related to the difficulty encountered accessing clinic participants, different clinics had different regulations regarding accessing client files. Thus, at some centers it was not possible to read the child’s psychiatric records. This would have been helpful however, in order to gain a better understanding of the child’s difficulties. Although checklists were included in this study as a means of confirming aggression, information concerning the exact nature of the child’s difficulties would have been useful in order to report additional descriptive information about the participants (e.g., comorbid disorders, etc.)

Related to the difficulty encountered accessing participants, another limitation of the study is related to participants’ treatment history. It was not possible to limit the sample to only include boys who had not yet begun treatment. The boys in the study were receiving a number of treatments for their behavioural difficulties (e.g., medication, individual psychotherapy, group therapy, etc.). Thus, a limitation of the study is that type of treatment or number of treatment
sessions was not controlled. This further added to the heterogeneity of the clinic group and might have affected the outcome of the study.

In addition, a further limitation of the present study is the age range of the participants. Originally the study was going to include participants aged 10-12 years of age. However, given the difficulty accessing participants, the study expanded to include 9-year-old males as well (3 control participants and 2 clinic participants were 9 years of age). One problem with such a wide age range is that 9-year-olds are quite different cognitively than 12-year-olds (Piaget, 1932). Thus, the age range further added to the heterogeneity of the clinic group.

In addition to the limitations related to participants, there were a few study characteristics, which might have impacted the findings. That is, although the study endeavored to expand the coding system to better understand and capture aggressive boy’s reasoning about social and emotional information, it is possible that the present study employed too many categories. That is, one limitation of the present study is that it employed a very large coding system, which, with a small sample, would fail to provide reliable results. In order to employ such a large coding system, perhaps a larger sample size should be used.

Concluding Remarks and Directions for Future Research

The present study investigated clinic-referred aggressive boys’ attributions of emotions and intentions in social situations. Contrary to the literature, a hostile attributional bias was not found in the present study. However, results suggest that aggressive boys might be developmentally delayed with respect to their understanding of the emotional consequences of events.

A number of possible explanations were advanced to account for the findings presented in this study. These explanations need to be explored by further research. Specifically, future research should attempt to establish base rates of hostile attributional responding by non-
aggressive children so that norms are available for what constitutes a hostile attributional bias and what is considered a typical number of hostile attributions. Moreover, research should continue to investigate the effect of participant role (i.e., victim or victimizer) on aggressive children's intent attributions.

Research is also needed to investigate more homogenous groups of aggressive children. Specifically, research is needed that considers the differences between clinic-referred aggressive children and clinic-referred conduct disordered children and their emotion and intention attributions. Future studies should attempt to control for variables such as type of treatment received, number of treatment sessions, and type of medication.

Moreover, future studies should be designed to empirically investigate the developmental lag hypothesis by including a sample of younger children. The present research provides some suggestions of possible differences or similarities between groups but until more research is conducted, these findings are only speculative.
References


Appendix A

Emotion and Intention Attribution Task

Ambiguous Situations:

Physical outcome.

1a. Pretend that you and Fred are out riding your bikes and you drive past each other. Fred’s bike swerves in front of yours causing you to fall off your bike. You fall down and scrape your knee.

1. Why did Fred’s bike swerve in front?
2. How do you feel?
3. Why?
4. How does Fred feel?
5. Why?

1b. Pretend Dan and you are in the playground playing catch with a ball. When you got the ball, you threw it, and it hit Dan in the back, hurting Dan.

1. Why did the ball hit Dan?
2. How do you feel?
3. Why?
4. How does Dan feel?
5. Why?

Property outcome.

2a. Pretend you are eating some candy and walking down the hallway at school. Rick was also walking down the hallway at school and you bump into each other and drop your school bags. Everything falls out. You and Rick pick up your belongings. Rick ends up with your candy.
1. Why did Rick end up with your candy?

2. How do you feel?

3. Why?

4. How does Rick feel?

5. Why?

2b. Pretend that you and your class went on a field trip to the zoo. A kid named David stops and buys a coke. Suddenly, you bump David’s arm and he spills coke all over his shirt. The coke is cold, and his shirt is all wet.

1. Why did you bump into David?

2. How do you feel?

3. Why?

4. How does David feel?

5. Why?

Non-tangible outcome.

3a. Imagine that you are in the bathroom one day after recess. While you are in there, some other kids from your class come in and start talking to each other. You hear one of the kids invite the other ones to a birthday party. The kid says that there are going to be a lot of people at the party. You have not yet been invited to the party.

1. Why hasn’t the kid invited you to the birthday party?

2. How do you feel?

3. Why?

4. How does the kid feel?

5. Why?
3b. Pretend that Alan sees you and some kids playing on the playground. Alan would really like to play with you guys, so he goes over and asks you if he can play. You say no.

1. Why did you say no to Alan?
2. How do you feel?
3. Why?
4. How does Alan feel?
5. Why?

Prosocial situations:

4a. Pretend you are walking to school in the rain and you drop your lunch bag in a puddle. Your whole lunch gets ruined. Todd is standing nearby and sees you pick up your wet lunch. He offers you half of his sandwich.

1. Why did Todd offer you half of his sandwich?
2. How do you feel?
3. Why?
4. How does Todd feel?
5. Why?

4b. Pretend that Carl is a new kid in school and Carl would really like to make friends. At lunchtime he sees some kids he would like to sit with and he goes over to their table. He asks if he can sit with them and a kid says no. He starts walking away when you say he can sit with you.

1. Why did you say Carl could sit with you?
2. How do you feel?
3. Why?
4. How does Carl feel?
5. Why?

Hostile situations:

5a. Pretend that you are in line at the movies. You just got a good spot near the front of the line when Joe pushes you out of line and takes your place.

   1. Why did Joe push you out of line?
   2. How do you feel?
   3. Why?
   4. How does Joe feel?
   5. Why?

5b. Pretend that Hal won a spelling contest in school. For winning first place Hal won a chocolate bar. Everyone else in the class got a cracker. You come over and grab Hal’s chocolate bar from him and begin to eat it.

   1. Why did you take Hal’s chocolate bar?
   2. How do you feel?
   3. Why?
   4. How does Hal feel?
   5. Why?

Accidental/Benign situations:

6a. Pretend you are in class playing with a puzzle. You just finished the puzzle when Ted comes over. Ted slips and knocks over your puzzle

   1. Why did Ted knock over your puzzle?
   2. How do you feel?
   3. Why?
4. How does Ted feel?

5. Why?

6b. Pretend that Tim is walking down the hallway at school. You is also walking down the hallway but you are reading a book and do not see Tim. You bump into Tim and Tim falls down and hurts his knee.

   1. Why did you bump into Tim?
   
   2. How do you feel?
   
   3. Why?
   
   4. How does Tim feel?
   
   5. Why?
Appendix B

Background Questionnaire

The American Psychological Association recommends that researchers report the major demographic characteristics of all research participants (e.g., children’s gender, parent’s educational background, etc.). To assist us in collecting this information, we request that you complete this brief questionnaire. All data are confidential, and will not be used in any manner that identifies you or your child. If you are uncomfortable responding to any of the items, feel free to disregard them. Moreover, if you have questions concerning any of the items, please do not hesitate to ask us about them.

Child’s Name: ____________________________  Today’s Date: ____________________________
Child’s Birth Date: ______________________  Child’s Current Grade: ______________________
Parental Marital Status: ____________________  Number of Siblings: ______________________

Mother’s Age: ____________________________

Mother’s Level of Education (please check one):

_____ Completed grade school
_____ Completed high school
_____ Completed college
_____ Completed university
_____ Completed post-graduate education

Mother’s current occupation: ____________________________

Mother’s cultural identity (please check one):

_____ African or African/Canadian
_____ Asian or Asian/Canadian
_____ Caribbean or Caribbean/Canadian
_____ European or European/Canadian
_____ Hispanic or Hispanic/Canadian
_____ Middle Eastern or Middle Eastern/Canadian
_____ First Nations
_____ Other (please specify) ____________________________

Father’s Age: _________________________________________

Father’s Level of Education (please check one):
_____ Completed grade school
_____ Completed high school
_____ Completed college
_____ Completed university
_____ Completed post-graduate education

Father’s current occupation: _______________________________

Father’s cultural identity (please check one):
_____ African or African/Canadian
_____ Asian or Asian/Canadian
_____ Caribbean or Caribbean/Canadian
_____ European or European/Canadian
_____ Hispanic or Hispanic/Canadian
_____ Middle Eastern or Middle Eastern/Canadian
_____ First Nations
_____ Other (please specify) ____________________________
Appendix C

Emotion Justification Coding System

Justification category:

1.0 – **Outcome** – child restates the outcome of the story as the reason for his emotion attribution (e.g., because the character fell, because the character’s candy is gone, etc.)

2.0 – **Act/action** – child restates the act (focuses more on the act itself as opposed to the outcome) as a reason for his emotion attribution (e.g., because he threw it at me, because he tripped me, because he didn’t invite me, etc.)

3.0 – **intention, matched** – child states reason for emotion attribution is because the outcome matched the actor’s intention (e.g., because he wanted to…)

3.1 – **intention, assumed, misattribution** – child states reason for emotion attribution is because one character assumes or attributes an intention to the other character or assumes that the other character is attributing an intention to himself. (e.g., because he thinks I did it on purpose; because he thinks I stole it.)

3.2 – **intention, mismatch** - child states that the reason for emotion attribution is because the outcome of the act did not match the actor’s intentions (e.g., because it was an accident; because I/he accidentally…)

4.0 – **moral/rights** – any statement that reflects concepts of help, fairness, kindness, niceness. Also included are prescriptive statements of responsibility such as “he should’ve…”, “he didn’t pay attention” – these statements suggest that the actor had the responsibility to do something or refrain from doing something that he did not do

5.0 – **empathic reason** - any statement that reflects concepts of perspective taking or acknowledging the feelings of the other child (e.g., “felt bad/sorry for him…”; “he seemed sad” etc.)

6.0 – **anticipated consequence** - child states that reason for emotion is because of some expected outcome that is not mentioned in the story (e.g., “we would become friends”, “he’d get in trouble”, “he would get a bad seat”, etc.)
7.0 – irrelevant reason – any response that either misses the point of the story or is related to some tangential reason (e.g., “because there is a birthday party going on”; “because he will get lots of presents”)
Vita Auctoris

Name: Wendy Shannon Manel

Place of birth: Montreal, Quebec

Year of birth: 1976

Education:
- Thornlea Secondary School
  Thornhill, Ontario
  1990-1995
- University of Toronto, Toronto, Ontario
  1995-1999 Honors B.Sc.
- University of Windsor, Windsor, Ontario
  2000-2003 M.A.
  (currently enrolled in the Ph.D. program)