<u>Young Children's Domain Coordination and Emotion Attributions in the Context of Mixed
Domain Transgressions</u>

By

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MSc, University of Victoria, 2013
BSc, University of Victoria, 2011

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY

In the Department of Psychology

Supervisory Committee

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Abstract

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Drawing on principles of social domain theory, the current study examined children's attributions of emotion and moral judgements when interpreting moral and mixed sociomoral transgressions. A goal of the current study was to explore developmental patterns in children's ability to coordinate their judgements and justifications across the social and moral domains. Links between emotion attributions, domain coordination skills, and externalizing behaviour were also examined as were associations between the above listed variables and perspective taking. Sixty-six typically developing children between the ages of 6- and 10-years were interviewed following the presentation of a moral or mixed moral and social domain vignette. Overall, there was significant variability in responses depending on the type of story. Developmental findings revealed that older children's moral reasoning was more specific (e.g., "it is unfair to steal") as opposed to vague (e.g., "it was bad") and other-oriented, and they tended to show a greater capacity to recognize both moral and social components of a mixed domain transgression. Further, as expected, younger children provided a greater number of positive emotion attributions overall. Consistent with the study's hypotheses, higher numbers of positive emotion attributions were predictive of higher externalizing behaviours. Emotion attributions were not associated with children's domain coordination scores, apart from one mixed domain story. Additionally, perspective taking scores did not predict children's domain coordination scores or emotion attributions. Developmental implications are discussed in relation

to social domain theory, as are implications of emotional expectancies, types of justifications and externalizing behaviour.

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Acknowledgements

I would like to express my most heartfelt thanks to my supervisor, Dr. Ulrich Mueller, for the many years of support, encouragement, and guidance. Dr. Mueller has been an exceptional supervisor from the start. In our eight years of working together, he has continuously exceeded my expectations for a supervisor by demonstrating the perfect balance of support, challenge, and professionalism. I feel fortunate to have had him on my side all these years. I would also like to extend thanks to my committee members, Dr. Erica Woodin and Dr. Tina Malti, for their thoughtful contributions and suggestions. Without their expertise, this dissertation would not have been possible. I would like to thank Dr. Sarah Macoun who kindly lent me her assessment tool which was an essential component of this study. Also, I would like to express thanks to the Social Sciences and Humanities Research Council of Canada for providing funding for this dissertation.

A special thank you to the many children and families who participated in this study and volunteered their time to support this endeavour. Your participation was invaluable and reaffirmed my curiosity for learning about how children think and feel about the world around them. Thanks to all of the research assistants who helped to code and score the data. Finally, I would like to thank my husband, Buchanan, who has been an invaluable support throughout this journey.

Introduction

On a daily basis, children are faced with situations in which they must make moral judgements. In many of these situations, children's moral decision making plays a key role in determining whether they engage in a given action such as cheating on a test or lying to a parent. Indeed, deficits in moral judgement and decision making can have significant developmental and social consequences for the child. Given the importance of normative moral development, it is no wonder that empirical research on the topic has a rich and extensive history. In the field of psychology, early moral development research dates back to the late 1800's (for a review see Wendorf, 2001). Throughout this time, a variety of theoretical approaches have been applied with the intent of defining and pinpointing the unfolding of morality including psychoanalytic theory (Freud, 1962), cognitive-developmental theory (Kohlberg, 1963; Piaget, 1932; Smetana, 1983; Turiel, 1983) and social learning and behavioural approaches (Skinner, 1972).

The social cognitive domain theory of moral development has garnered substantial support over the last forty years (see Nucci, 2001; Smetana, 1997, & 2006 for a review). Numerous studies have supported the proposal that young children have the capacity to distinguish between moral and social conventions based on theoretical criteria. The findings indicate that children apply moral justifications (e.g., concerns with fairness, harm and justice) when reasoning about moral transgressions. Similarly, children apply social-conventional justifications (e.g., concerns with authority, rules, and punishment) when reasoning about conventional transgressions.

Although much of the research on social domain theory has focused on distinguishing between the domains, proponents of the theory acknowledge that social and moral domains often overlap in real life situations. Events that involve overlapping elements of the different domains are referred to as "mixed domain" events and have recently become an increasing area of focus

(Smetana, 2006). An example of a mixed domain transgression would be a child who budges to the front of a school line-up (Smetana, 1983). In this example, the scenario contains a moral transgression (e.g., the act is unfair to other children waiting), and also a social transgression (e.g., social regulations and school rules related to waiting your turn in line). Mixed domain events are often more ambiguous and evidence suggests that, while most children can distinguish between moral and conventional transgressions, there is much more variation when it comes to reasoning about mixed domains. Examining mixed domain transgressions may help elucidate why children who can effectively judge straightforward moral or social dilemmas fail to behave appropriately in real-world contexts. Studies that have examined mixed domain reasoning in young children have found that, with increasing age, children are better able to attend to the moral components of mixed domain transgressions. At younger ages (e.g., 4- to 6-years), children are more focused on conventional aspects of mixed domain transgressions. The current study aimed to build on this finding by identifying factors that may underlie the apparent transition from a differentiated to a more integrated conceptualization of mixed domain events. The factors assessed in the study included emotion attributions and perspective taking.

Social domain theory has provided researchers with a useful framework within which to explore a diverse range of issues in the area of moral development including the role of emotions in shaping moral versus social-conventional judgements (Arsenio & Fleiss, 1996; Dunn, 2006; Turiel & Killen, 2010). Indeed, the role of emotion in moral development represents an interesting and important area of research. Emotion has long been thought to play a role in children's moral understanding and behaviour; however, from a theoretical standpoint, it has not been viewed as important to moral development as rational thought and reasoning (Blair, 2010; Smetana, 2006). In the last two decades there has been growing interest in how emotion impacts

children's moral development (Arsenio & Fleiss, 1996; Arsenio, Gold & Adams, 2006; Arsenio & Kramer, 1992; Arsenio & Lemerise, 2004; Arsenio & Lover, 1995; Dunn, Brown, & Maguire, 1995; Eisenberg, 2000; Hoffman, 2001; Lane, Wellman, Olson, LaBounty, & Kerr, 2010; Lemerise & Arsenio, 2000), and research has taken a variety of approaches to study the relations between emotion and moral development.

One area of research has examined the relation between moral emotions and moral behaviour by studying how children attribute emotions to victimizers and victims. For example, studies have consistently shown that emotion attributions predict differences in children's morally relevant behaviour, such as aggressive and prosocial behaviour (see Malti & Krettenauer, 2013, for a review). Findings also indicate developmental differences in children's attributions of emotions. Specifically, older children (6- and 8-year-olds) show a greater capacity to attribute negative emotions to victimizers, whereas younger children (4-year-olds) tend to focus on positive emotions when considering victimizers (Arsenio & Kramer, 1992). Further, there is some evidence to suggest that older children (8-year-olds) are more likely to spontaneously attribute a mix of positive and negative emotions to a victimizer (Arsenio & Kramer, 1992).

To date few studies have examined children's emotion attributions in mixed domain scenarios. This is an important area of research as it could shed light on why older children are better able to identify both the moral and conventional aspects of mixed domain events. Further, it could provide insight into the processes involved in domain integration and expand upon social domain theory by shifting the focus from distinguishing between the different domains to understanding how they are coordinated. Given that domain integration is important for understanding and responding appropriately to everyday moral events, the findings were

expected to have practical implications. Children who struggle to identify the moral components of mixed domain events may have less regard for the welfare of others or demonstrate higher rates of immoral behaviour. To explore these potential associations, the present study aimed to examine the role of emotion attributions in facilitating children's coordination their thinking across the different domains of social and moral knowledge. Age-related were also explored to identify developmental changes in emotion attributions, domain coordination, and justifications.

Research on emotion attributions and moral reasoning, has examined associations between these two factors and different measures of moral behaviour (Arsenio & Fleiss, 1996; Asendorpf & Nunner-Winkler, 1992; Astor, 1994; Blair, 1996; Blair, 1997; Blair, Monson & Fredrickson, 2001; Garner, 1996; Leslie, Mallon, & DiCorcia, 2006; Malti, Gasser, Buchmann, 2009; Malti & Krettenauer, 2013). With regard to moral reasoning, research has shown that behaviourally disrupted children struggle to distinguish between moral and social transgressions when social restrictions or laws are removed (Blair, 1997; Blair, 2001). In terms of relations between emotion attributions and externalizing behaviours, studies indicate a negative association between negative emotion attributions and antisocial behaviours (See Malti & Krettenauer, 2013 for a review). The current study aimed to replicate the past findings showing associations between emotion attributions and externalizing behaviours. Further, associations between children's domain coordination abilities (e.g., their ability to integrate their moral justifications across social and moral domains) and caregiver-rated externalizing behaviours were examined.

In addition to studying emotion attributions, another important factor to investigate is perspective-taking. Children's ability to understand others' cognitive and affective states is considered to be an important predictor of social competence; however, in terms of predicting

moral emotion attributions, reasoning, and behaviour, the findings are mixed (Gasser & Keller, 2009; Gini, 2006). Some studies suggest that there is a positive association between perspective taking and children's prosocial judgements and behaviour (Eisenberg, Zhou, & Koller, 2010). In contrast, however, children who victimize other children have been found to have perspective taking skills at or beyond the level of children who do not victimize other typically developing children (Gasser & Keller, 2009; Sutton, Smith & Swettenham, 1999). Despite these mixed findings, it is possible that perspective-taking skills play an important role in children's judgements of ambiguous mixed domain events. To the best of our knowledge, no studies have investigated the role of perspective taking in children's judgements of mixed domain events, thus, a goal of this study was to examine the relations between domain coordination and perspective taking. The study also aimed to explore associations between emotion attributions and perspective taking. Given that understanding negative emotion attributions of victimizers appears to involve considering the perspective of both the victim and victimizer, it was predicted that negative emotion attributions would be associated with higher perspective taking scores.

Finally, including a measure of intelligence (IQ) is also important given that the moral reasoning tasks used in the present place some demands on verbal comprehension, expressive vocabulary, working memory, and reasoning. Thus, intelligence was included in the study as a control variable. Whether intelligence plays a role in moral thought and development is unclear. Whereas some studies indicate that gifted children demonstrate more advanced moral reasoning and decision making (Chovan & Freeman, 1993; Gross, 1993), other research has shown that intelligence is unrelated to moral reasoning, moral emotion attributions, and (Beibert & Hasselhorn, 2016). Despite these mixed findings, IQ was included in the current study in order to

tease apart potential individual variation due to IQ rather than processes of moral development and perspective taking.

In the next section background information on social domain theory is provided, followed by a review of the literature on mixed domain events and relations between moral reasoning and externalizing behaviours. Next, the role of emotion in moral development is discussed with a focus on the literature examining emotion attributions. The literature on emotion attributions and externalizing behaviours are also discussed. Finally, the third section of the introduction focuses on integrating the findings described in the earlier sections by discussing emotion attribution in relation to domain research and developmental theory. The role of perspective taking and intelligence in the present study are also discussed.

Background Information

The following sections describe social domain theory in more detail and review the current literature examining moral development from a social cognitive perspective.

Social cognitive domain theory. In broad terms, social-cognitive domain theory (*social domain theory*) provides a framework for understanding how individuals interpret, reflect on, and judge the social world (Turiel, 1983). More specifically, the theory provides a platform for understanding how children internalize and develop moral thought and behaviour. The theory draws on Piaget's view of cognitive and social development by positing that knowledge is constructed through our experiences and social interactions (Piaget, 1932). A unique feature of social domain theory is the idea that social knowledge and types of social interactions can be classified into three distinct but coexisting domains: the moral, societal, and psychological domains (Turiel, 1983). The moral domain pertains to individuals' judgements of justice, rights, trust and welfare in regards to how people should act towards one another (Smetana, 1983). For

example, judgements about harm to others, allocating resources, and stealing would pertain to the moral domain. Transgressions classified within the moral domain are judged to be violations based on individuals' past experiences (e.g., experiences of pain or injustice) and are not contingent on whether a rule or custom was defied (Turiel, 1983). In contrast, transgressions that are considered to fall into the societal domain are judged by the standards of the group or society which can vary depending on the social context. For example, failing to stand up to sing the national anthem, or speaking loudly in the library, would be considered societal or, more specifically, social-conventional transgressions, because they are violations of social regulations and also context-specific. Thus, the societal domain is thought to represent an underlying knowledge of social systems and rules that serve the purpose of regulating and organizing our social interactions (e.g., manners and sex roles) (Turiel, 1983). Lastly, the psychological domain refers to our understanding that each person is his or her own psychological system with unique preferences and interpretations of the world (Smetana, 1983; Nucci, 1996). For example, personal choice and preference would fall under this domain of knowledge, as would desire for privacy (Smetana, 1983).

  Development of the domains. The developmental trajectory for each of the social domains is thought to depend on the individual's experiences and interactions with her or his social environment (Smetana, 2006). It is proposed that each system differentiates early on and then follows its own distinct development path (Turiel, 1983). Exposure to authoritative or rule-based interactions (e.g., through exposure to parenting and school environments) is thought to influence the development of the social-conventional domain, whereas participating, witnessing, or learning about moral transgressions contributes to the development of the moral domain

(Turiel, 1983). Thus, our experiences in different social interactions provide the context in which domain development occurs.

In regards to the moral domain, Smetana argues (1983, 1999) that children begin to construct concepts of right, wrong, fair and unfair within the context of social interactions. She proposes that children's understanding of these abstract concepts is largely based on their experience of the outcome or consequence of the act (e.g., experiences of harm or unfairness). Thus, when making decisions about whether an act is right or wrong, children draw on their past experiences of, say, pain or injustice, to support their understanding of the present situation. By doing this, children do not require external rules to discern whether a moral transgression is right or wrong; instead, they begin to build their own internalized system of right and wrong. Research supporting this claim shows that children judge moral transgressions based on the consequences of the transgression on others' rights and welfare (Turiel & Smetana, 1984, Smetana, 1989).

The development of the social-conventional domain is also thought to arise through our social interactions from an early age, but through a somewhat different process. Instead of relying on past experiences of the harmful consequences of actions (e.g., pain or violation of rights) on which to base our judgements, it is hypothesized that the focus is on past experiences of social conventions and social regulations (Smetana, 1983). Thus, there is less focus on the consequence of a social transgression, as the consequence or negative emotion is often a result of violating a rule, rather than violating a victim. For example, people may feel embarrassed or ashamed if they show up underdressed to a party; however, if social rules on dress code were removed, the feelings would likely disappear. This is largely because the consequences of social-conventional transgressions lack the essential features of moral acts that lead to an internalized sense of right and wrong. Indeed, empirical evidence suggests that as children age, their

reasoning about social-conventional transgressions improves as their experiences of social regulations and cultural conventions broadens (Nucci & Nucci, 1982).

In general, research findings indicate that, as children develop, there is an increase in their ability to understand the significance and seriousness of more abstract moral transgressions in addition to concrete acts (e.g., physical harm) (Smetana, 2006; Nucci, 2001). In middle childhood, children are better able to grasp concepts of equality and fair treatment of others (Davidson, Turiel & Black, 1983) and by preadolescence, they have a deeper understanding of fair treatment of those with varying needs (Smetana, 2006). In adolescence, it has been found that their understanding of concepts of fairness become more complex as they learn to apply their knowledge across different contexts and are faced with more ambiguous moral transgressions (Smetana, 2006).

Applications to developmental research. A variety of methods have been used to examine moral and social development within the framework of social domain theory. A beginning point for social domain theorists was to examine whether children were capable of distinguishing between moral and social transgressions from an early age (Smetana, 1989; Smetana & Braeges, 1990; Nucci et al., 1983). Domain distinction research focused on children's reasoning and judgements about vignettes that were designed to reflect each of the domains. To assess reasoning, researchers examined how children justify their judgements of moral or conventional acts. Justifications that refer to harm, fairness or rights are considered *moral justifications*, whereas types of reasoning that refer to rules, authority, social standards, or cultural expectations are considered *social-conventional justifications* (Smetana, 2006).

Prior research has consistently indicated that children are able to distinguish between the different domains from an early age based on their reasoning and judgments (see Smetana, 2006

and Turiel, 1998 for reviews). Indeed, children as young as 34 months are capable of differentiating between moral and conventional transgressions (Smetana & Braeges, 1990; Nucci et al., 1983). Specifically, studies have shown that children judge moral events as wrong based on their concern for others' welfare and rights, whereas judgements of social conventional events are based on an evaluation of the rules violated (Smetana, 2006). In addition to examining justifications, studies have also looked at how individuals rate the severity of moral and social acts as well as the importance of moral and social rules (Smetana, 1989). Generally, research shows that children and adults judge moral transgressions as more serious than social-conventional transgressions, and rules prohibiting moral acts as rated as more important (Turiel, 1978). For example, one study found that children rated rules prohibiting major moral acts more important than rules prohibiting minor moral acts or conventional acts (Tisak & Turiel, 1988). Further, other studies have shown that violations of rules such as talking in class are rated as less serious than moral acts of harm or injustice (Smetana & Braeges, 1990). The seriousness of the act and importance of the rule suggests a quantitative distinction between the domains (i.e., degree of seriousness) in addition to the qualitative distinctions (i.e., judgements and justifications).

In regards to criterion judgements, research by Smetana and Braeges (1990) and Smetana (1981) suggests that young children (i.e., children between the ages of 34 and 42 months) do not consider all the criteria when judging transgressions. Instead, the findings suggest that younger children begin to differentiate between the domains by evaluating the generalizability of the act (e.g., "at another school is it OK [or not OK] to X?") but not the seriousness, or permissibility of an act. By approximately 42 months, however, Smetana and Braeges (1990) found that children were able to distinguish the domains by considering all the criteria. For example, children are

typically able to judge violations of conventional rules (e.g., talking in class) as less serious than violations of moral rules (e.g., hitting another). Similarly, by approximately age 4 years, children were able to see moral transgressions as being more independent of rules compared to conventional transgressions (Smetana & Braeges, 1990).

In sum, the research indicates that children demonstrate the ability to judge and evaluate moral events from an early age. These findings challenge classic theories of moral development (e.g., Kohlberg & Kramer, 1969; Piaget, 1932) that conceptualized moral evaluations of harm and injustice as occurring at later stages in development and viewed younger children incapable of separating rules and positions of authority from moral transgressions.

Mixed domain events. Although the social, moral and personal domains are often conceptualized as distinct and parallel systems, social domain theorists also recognize that integration across the domains is common in our everyday experiences. Indeed, social events and transgressions are typically complex, and often involve overlapping elements of all three domains. Social domain researchers have referred to these instances as mixed domain events (Smetana, 2006; 2013), and research has been conducted on how individuals organize and prioritize their judgements when faced with such events.

Within this line of research, participants are often provided with different hypothetical scenarios that represent features from two or more domains (e.g., a conventional violation [e.g., speaking out of turn] that also leads to psychological harm [e.g., inequity]). Researchers have discovered variability within and between individuals in terms of how they coordinate their judgements across the domains (Crane & Tisak, 1995; Helwig, 1995; Smetana, Killen & Turiel, 1991). For example, Helwig (1995) found that seventh graders prioritized social-conventional concerns over civil liberties (e.g., freedom of speech). Specifically, when reasoning about

whether it would be right or wrong to violate laws restricting freedom of speech, even if this law was seen as unfair and unjust, seventh graders were more likely to judge the violation as unacceptable. In contrast, eleventh graders and young adults were more likely to prioritize civil liberties, such as freedom of speech or freedom of religion, even when these practices were in conflict with law. In addition to developmental variation, adolescents' judgements varied depending on the context and nature of the transgression (e.g., physical harm versus psychological harm) as well as in how they conceptualized and understood civil liberties.

Similar to Helwig's study, Crane and Tisak (1995) also found developmental variation in how children coordinated judgements about mixed domain events. In their study, groups of preschoolers, first graders and third graders judged mixed domain events involving school-based (e.g., talking without raising his/her hand) or home-based transgressions (e.g., a child playing with his/her father's watch). The results suggested that older children (third graders) were more likely than younger children to focus on moral concerns (e.g., fairness, rights and respect for property). In addition, older children were more likely to attend to both moral and social-conventional issues in their reasoning. In contrast, a large proportion of younger children (preschoolers and first graders) viewed the mixed domain events as primarily conventional, focusing largely on authority and rules in their justifications. In addition, younger children were more likely to view an act as acceptable if it was permitted by an authority figure, again indicating a diminished focus on the moral aspects of the scenario.

The finding that younger children focus more on social-conventional factors is not consistent across studies and appears to vary depending on the context and type of moral event. For example, a study by Killen and Stangor (2001) compared children's reasoning about exclusion of peers from social activities. The hypothetical events used in this study included both

moral components (e.g., fairness and equal treatment) and social-conventional aspects (e.g., group functioning and norms of society). Children's reasoning was examined across three age groups: first graders, third graders and seventh graders. The results indicated that all three groups demonstrated concern for moral issues of fairness and equal rights; however, older children were more concerned with issues of group functioning and social conventions compared to the younger children. Specifically, when required to choose between unequally qualified children for a group activity, the seventh graders were more likely to subordinate issues of fairness and equal opportunity and select the more qualified child. The authors proposed that their findings were due to older children having greater sensitivity to issues related to the dynamics of social groups and group functioning. A more recent study by Killen et al. (2013), had similar outcomes, in that older children were more likely to attend to in-group processes in comparison to younger children. In their study, fourth and eighth grade children evaluated social exclusion scenarios that required them to choose whether to select an "out-group" member who behaved fairly, versus an "in-group" member who behaved unfairly. Younger children were found to more often select the out-group member to maintain principles of fairness and equality; however, older children gave priority to the in-group member, which was thought to reflect greater attendance to issues of group norms and conformity to those norms.

In regards to the discrepancies between Crane and Tisak's (1995) and Killen and Stangor's studies (2001), one clear difference is the age groups used in each study. Further, due to the differences in age, the type of vignettes also differed. Whereas Crane and Tisak's study tapped into more basic social conventional knowledge (e.g., school rules), Killen and Stangor's research included complex social situations that may have exceeded younger children's reasoning abilities. Additionally, it is possible that young children have not yet experienced these

types of situations in their everyday life. Thus, the finding that younger children focused less on the social-conventional aspects of the interaction may be a result of the complexity of the task rather than a tendency to prioritize moral over social knowledge.

Another study by Smetana, Killen and Turiel (1991) adds support to the finding that children's judgements of mixed domain events differ based on the complexity of events. This study examined children's ability to coordinate moral and interpersonal concerns when both were in conflict (e.g., a close sibling versus an acquaintance asks you to not share your candy with another student). Participants were in the third, sixth and ninth grades. The authors found that although the majority of children tended to prioritize moral concerns over interpersonal concerns, when their actions would positively impact relationships (e.g., by benefiting a friend), there were more attempts to prioritize the relationship. In terms of developmental differences, the authors found that 9th -graders were more likely to consider information from multiple domains compared to 3rd- and 6th-graders. Again, similar to Killen and Stangor's (2001) study, this study included hypothetical scenarios that tapped into children's knowledge of social relationships rather than more rudimentary social rule systems (e.g., it is wrong to budge in line or talk without raising your hand).

Overall, given the different age groups and assessment instruments used across the studies it is difficult to draw firm conclusions about developmental patterns in how children interpret mixed domain events. Taken together, however, these results do indicate some developmental differences in how children integrate social and moral concerns. Based on the findings from Helwig (1995) and Crane and Tisak (1995) and Killen and Stangor's (2001) studies, older children appear to demonstrate an increased capacity to incorporate multiple domains when reasoning about mixed domain events. Further, it appears that, for mixed domain events that are

lower in social complexity, younger children may be more focused on rules and authority, and older children seem better able to attend to both moral and social domains. However, in situations that integrate challenging social dynamics, older children seem to attend to these social factors more than younger children when justifying transgressions such as exclusion. The current study investigated developmental patterns in domain coordination by including both exclusion stories and mixed domain transgressions similar to the vignettes used in Crane and Tisak's (1995) study.

The idea that younger children may differ from older children in their reasoning about mixed domain events is congruent with Turiel and Smetana's (1984, as cited in Arsenio & Lemerise, 2004) idea that there are three increasingly complex categories of mixed domain reasoning: domain subordination, lack of domain resolution, and domain coordination. The first is the most basic and refers to individuals who only acknowledge one domain in their reasoning (e.g., reasoning that talking without raising your hand is bad because it is against the rules). Lack of domain resolution involves recognizing more than one domain but failing to integrate them completely (e.g., recognizing that talking out of turn is bad because it is unfair to others and against the rules but failing to coherently articulate the conflict). Finally, domain coordination is thought to be the most developed pattern of reasoning and reflects a clear understanding of the various competing domain issues and how they are integrated in a scenario (e.g., talking out of turn is bad because it breaks the rules and is unfair to the other classmates; however, this particular classmate is new to class and doesn't understand the rules yet).

Developmental changes in domain coordination likely plays a role in children's ability to reason about mixed domains. If so, it is important to identify the processes that promote or underlie domain coordination. There are likely multiple factors involved and the importance of

each factor may depend on the context and nature of the event. One factor potentially important for integrating different domains is the ability to integrate multiple cognitive and emotional perspectives. Because this factor will be discussed later in this paper, I will just provide a brief description here. To illustrate, in the talking out of turn example, there are multiple perspectives to consider. First there is the classmates' perspective (e.g., feeling hurt or annoyed and thinking it is unfair), the transgressor's perspective (being new and not understanding the rules, feeling embarrassed) and the general perspective of the teacher and school context (the child is breaking a rule).

In addition to perspective taking, another factor relevant to domain coordination is the child's ability to appropriately attribute emotions to the different individuals involved. Children's emotion attributions and their relation to moral competence have been studied at length and will be reviewed later in this paper. In general, children who are able to attribute multiple negative emotions and also mixed emotions to both the transgressor in mixed domain events may also be more likely to see the ambiguities and complexities in the scenario. For example, a child who recognizes that the new student feels both embarrassed to have broken a rule as well as guilty for taking someone else's turn may be more likely to recognize the moral and conventional components of the event. The intensity of the emotion attributed to each individual could also alter their understanding of the event and may be related to how serious they think the transgression is. Indeed, it has been hypothesized that variability among individuals' judgements may be a result of differences in how they view the seriousness of transgressions (Smetana, 2006).

In general, research that examines children's reasoning about mixed domain events is important for several reasons. First, in children's everyday interactions it is likely that they will

experience events that require integrating the domains rather than events that are simple and straightforward. Second, there are few studies that have examined mixed domain reasoning in young children (e.g., preschoolers and early childhood) and further inquiry into this population is needed, especially given that there is considerable variation in how older children approach mixed domain transgressions. Third, studies that do exist present with mixed findings in terms of how younger and older children prioritize the different domains. Finally, further research into mixed domain events will provide insight into the relations between children's reasoning and their moral behaviour. For some children, being knowledgeable about what is right and wrong does not always translate into appropriate behaviour. Although children may perform well on judging a straightforward moral event (e.g., was it right to hit?), they may struggle to apply these principles when faced with multiple moral and social considerations in a real-life situation. There are likely several reasons for this disconnect. For one, in real-life situations, the intensity of emotion is higher in comparison to simply considering or reasoning about an event. Another possibility is that actual experiences involves more complex issues than just the question of whether something is the right and wrong thing to do. To explore the links between behaviour and moral reasoning in more detail, in the following section I describe and review relevant literature examining these relations.

  Moral reasoning and behaviour. A considerable body of research has examined associations between children's moral reasoning and their observed or reported behaviour. Researchers have been most interested in those children who seem to demonstrate poor moral judgement in their everyday interactions and have hypothesized that children who act aggressively towards others or demonstrate low levels of empathy may also have deficits in moral judgement. The majority of this research has compared atypical populations to typical

populations on a variety of measures tapping into moral judgement and reasoning (Arsenio & Fleiss, 1996; Astor, 1994; Blair, 1996; Blair, 1997; Blair, Monson & Fredrickson, 2001; Leslie, Mallon, & DiCorcia, 2006). Specifically, studies have looked at children's ability to distinguish between social and conventional acts, their justifications and ratings of seriousness, as well as variation in emotional attribution to victims and perpetrators. Outcome measures have included parent- and teacher-reports of conduct problems and aggressions as well as psychopathic traits.

A study by Arsenio, Adams and Gold (2009) included a sample of 9th- to 12th grade students with and without aggressive tendencies to examine differences in children's moral reasoning and emotion attributions for ambiguous negative acts (e.g., a child gets hit in the head with a football during gym), provoked aggression (e.g., a fellow peer cuts in line and the response is to push the child to the back of the line), and unprovoked aggression for a measurable gain (e.g., the protagonist pushes a peer to the ground to obtain a ticket). Following the vignettes, children were asked how they would feel following the events (as if they were the protagonist). For the ambiguous acts, children were also asked about the intention of the person who caused the event (e.g., "was it an accident?"). In addition to the interview questions, children were rated by their teachers on a scale measuring proactive and reactive aggression. Their findings indicated that children who were rated high on proactive aggression were more likely to expect positive feelings following provoked and unprovoked aggressive acts, had fewer moral justifications, and were less likely to attribute angry emotions to victims. This group of children were also more likely to justify the acts based on the self-gains of the transgressor. Children rated high on the reactive aggression scale were more likely to attribute negative intentions towards protagonists in the ambiguous acts, thus displaying a "hostile attribution bias". The authors concluded that, whereas reactively aggressive children appear to be misinterpreting the intent of others (i.e., a

social processing deficit), proactively aggressive children may have a bias towards an expectation (or prior experience) of positive emotion attributions following an aggressive act, and that this may relate to their tendency to focus on self-gains. These findings are interesting as they suggest variations in problematic patterns of reasoning based on differences in adolescents' aggressive tendencies.

In general, there exists some research to indicate links among delinquent or aggressive conduct and impaired moral reasoning, and one piece of evidence is that children with emotional and behavioural problems struggle in situations in which they either have to distinguish between violations of moral and conventional rules. However, the mechanisms that are underlying these differences are currently unclear. Possible explanations may include variation in social experiences and representations of harm and injustice, differences in how aggressive and nonaggressive children interpret and evaluate situations, differences in the cues they attend to, or differences in how they attribute emotions to the victims and victimizers. Emotion attribution will be discussed in more detail in the following section.

Emotion and Moral Development

In the past two decades, there has been a growing interest in understanding the role of emotion in moral development and moral reasoning (Arsenio & Fleiss, 1996; Dunn, 2006; Turiel & Killen, 2010). From a social domain perspective, emotion was originally viewed as an external force that drives moral judgements and informs decisions; however, it was not considered a crucial component of moral development. Historically, for domain theorists moral development has been tied to the development of judgements, reasoning and rational thought (Turiel, Killen, & Helwig, 1987). For this reason, studies testing aspects of social domain theory have, in the past, largely overlooked emotional processing. Recently, however, research in neuroscience and

developmental psychology has demonstrated that emotion plays a crucial role in the process of evaluating and judging moral scenarios. For example, a number of studies have implicated areas of brain activation in moral reasoning tasks that are thought to be linked to emotion (see Blair, 2007, for a review). Further, developmental studies have indicated that children's knowledge of moral emotion and their understanding of emotion are important for facilitating moral judgement and action (Arsenio, Adams, & Gold 2009; Dunn, Brown, & Maguire, 1995; Lane et al., 2010; Malti, Gasser, & Buchmann, 2009; Malti & Krettenauer, 2013; Menesini & Camodeca, 2008; Olthof, 2012). Self-oriented and other-oriented moral emotions such as guilt, empathy/sympathy, shame and pride have also been implicated in moral decision making (Eisenberg & Miller, 1987; Eisenberg, 2000; Menesini & Camodeca, 2008). For instance, Menesini and Camodeca (2008) found higher levels of shame and guilt in prosocial children compared to children who victimize others. Similarly, Eisenberg (1987) found low to moderate positive associations between empathy and prosocial behaviour. Thus, the evidence appears to support the idea that emotions are relevant when children are both considering sociomoral situations and deciding how to act.

One issue that is less clear and remains controversial, however, is *how* emotion influences moral judgement. Huebner and colleagues (2009) argue that emotion does not play an essential role in facilitating moral judgements but rather influences them externally by providing the motivation for moral action. In contrast, others have argued that emotions are central to the development of moral cognition (Smetana, 2006; Decety, Michalska & Kinzler, 2012). Indeed, currently, proponents of social domain theory view emotion processes as playing an integral role in organizing judgements, encoding scenarios and understanding moral transgressions (Smetana, 2006). The current study will shed light on the role of emotion attributions in the development of moral judgement by examining whether emotion attributions play a role in the development of

domain coordination. Results from this study will provide insight into whether children's emotion understanding of transgressors underlies their ability to integrate their moral reasoning and justifications across social and moral domains in the context of mixed domain events.

In the following sections, I will highlight an area of research that has gained significant attention, namely research on the relation between emotion attributions and moral development. I will also review the relevant literature and draw connections between emotion attribution, moral judgement and social domain theory. Next, I will examine links between emotion attribution, moral behaviour and development. I will draw on the existing literature base to develop predictions relevant to the current study.

Emotion attribution. There is a large body of literature examining emotion understanding and how it relates to moral development. The majority of this research has focused on how children attribute emotions to victims and victimizers in a variety of moral and social situations (Arsenio, 1988; Arsenio & Kramer, 1992; Barden, Zelko, Duncan & Masters, 1980; Chaparro, Kim, Fernandez, & Malti, 2012; Keller, Lourenço, Malti, & Saalbach, 2003; Krettenauer, Colasante, Buchmann, & Malti, 2014; Murgatroyd & Robinson, 1998; Nunner-Winkler & Sodian, 1988; Wiersma & Laupa, 2000). The general aim of this research has been to identify how children's perceptions of the emotional consequences of events relate to their moral judgement and behaviour. An interesting finding that has emerged within this literature is what is called the "happy victimizer" phenomenon. Specifically, studies have shown that younger children (e.g., approximately ages 4- to 6-years) tend to attribute only positive emotions to victimizers who completed a moral transgression (i.e., predicting feelings of happiness after a transgressor pushes another child off a swing), despite understanding that the events are morally wrong. In contrast, older children (e.g., 6 years and above) appear capable of understanding that

victimizers will feel negative emotions following a transgression (e.g., guilt and sadness) due to the harmful consequences of their acts (Arsenio & Kramer, 1992; Malti, Gasser, & Gutzwiller-Helfenfinger, 2010; Nunner-Winkler & Sodian, 1988). The happy victimizer effect has garnered significant attention partly because it stands in contrast to the social domain finding that young children are capable of comprehending moral transgressions. Indeed, as previously noted, research indicates that children as young as three years have the capacity to judge moral events as wrong based on judgements about others' welfare and rights (see Smetana, 2006 for review).

To better understand the happy victimizer phenomenon and test its robustness, researchers have manipulated a variety of factors. For example, an early study by Nunner-Winkler and Sodian (1988) tested whether the salience of the moral act would influence 4- and 5-year-olds' emotion attributions (e.g., physical harm versus stealing). In addition, they also examined whether profiting or not from the transgression would alter responses. The authors found that regardless of the particular manipulations, children continued to attribute positive emotions to the victimizers suggesting that young children may overlook moral considerations when determining a transgressor's emotional state. In a third experiment, however, they found that young children did not attribute positive emotions to victimizers in situations where they accidentally harmed another person, thus indicating that considerations of intention may impact emotion understanding.

Other research has looked at differences in children's emotion attributions when asked how a hypothetical victimizer would feel (other attributed) compared to how they would feel as the victimizer (self-attributed) (Keller, Lourenco, Malti, & Saalbach, 2003; Meneres, 2014). Keller and colleagues (2003) found that children tend to attribute more negative, moral emotions when they are asked to put themselves in the victimizer's shoes. Building on this finding, further

research has indicated that self-attributed emotions are more strongly associated with antisocial behaviours in comparison to other-attributed emotions (Malti & Krettenauer, 2013).

Further studies have examined whether anticipatory emotions differ from emotions attributed after an event (Krettenauer et al., 2014; Menéres, 2014). According to Menéres (2014), the original happy victimizer task may underestimate young children's moral emotion understanding by skewing young children's attention towards the outcome of the transgression (e.g., a desired goal was met) rather than the moral consequences. Thus, by asking children to attribute emotions prior to the event occurring (e.g., *how would the child feel if he pushes the other child off the swing*). Menéres (2014) expected that fewer positive emotions would be reported. Menéres' results supported this view by demonstrating that children attributed fewer positive emotions to hypothetical transgressors in the anticipatory condition compared to the standard task. However, despite fewer positive emotions overall in the anticipatory condition, the happy victimizer effect was still observed, demonstrating its robustness.

Taken together, the happy victimizer research highlights the important role of emotion attributions in identifying individual variability in how children interpret and understand morally significant acts. The happy victimizer effect also appears to be quite robust; however, factors such as expectancies versus outcome attributions and self-versus other attributions do appear to influence the strength of the effect in young children (Malti & Ongley, 2014). Malti and Keller (2012) theorized that the happy victimizer effect is a result of developmental differences in the ability to first distinguish and then coordinate the perspectives of the self and other. They propose that as children begin to coordinate their understandings of the negative emotional reactions of victims (e.g., sad, hurt, fearful) and the negative emotional consequences of these reactions on the victimizer (e.g., remorse, guilt, shame), the happy victimizer effect is

diminished. Although studies have examined how differences in the types of moral transgressions influence emotion attributions, few studies have looked at children's emotion attributions across different domains of social-moral reasoning. Further, to my knowledge, no studies have examined emotion attributions in mixed domain scenarios. Given that research has demonstrated variability in how children judge mixed domain transgressions, it is important to examine whether differences in emotion attributions play a role. Indeed, the finding that younger children tend to attribute more positive emotions to victimizers may shed light on the finding that in some scenarios, younger children tend to focus on social-conventional components of mixed domain events (Crane & Tisak, 1995). In the current study, I examined this relation and, more specifically, tested whether more advanced emotion attributions (e.g., negative or moral emotion attributions) are necessary for interpreting mixed domain acts by effectively coordinating moral and social-conventional domains.

Emotion attributions and domain research. As previously noted, few studies have looked at children's emotion attributions across different domains of socio-moral development. Exceptions are two studies by Arsenio and colleagues (Arsenio, 1988; Arsenio & Fleiss, 1996). Arsenio (1988) examined emotion attributions of kindergartners, third graders, and sixth graders across six different types of sociomoral events including those belonging to personal, social and moral categories. The study also looked at whether children's emotion attributions facilitated their reasoning about sociomoral acts. Arsenio (1988) found that children's emotion attributions for the transgressors differed across domains, with moral transgressions eliciting slightly more negative emotions, conventional acts eliciting neutral emotions, and prosocial acts evoking positive emotions. He also found that children whose affective attributions differed from the norm (e.g., children who judged the recipients in a prosocial scenario to be sad) had more

difficulty matching affective states with sociomoral scenarios (i.e., difficulty matching a picture of a child with a happy facial expression with the appropriate scenario). Notably, the study found no differences in emotion attributions among the three different age groups. The lack of developmental differences may be due to the fact that the author converted children's emotion attributions into positive and negative valences. For example, all negative emotions (e.g., sadness, fear, anger) were assigned equivalent negative values. As a result, important information regarding qualitative differences in emotion attributions was omitted.

In another study by Arsenio and Fleiss (1996), the finding that emotion attributions differ across socio-moral events was replicated in a group of second and fifth graders. In this study, emotions were not converted into a positive and negative valence scale and differences were found between the age groups, with younger children attributing more feelings of sadness overall and fewer anger attributions. A limitation of this study, however, was that the authors did not include a measure of self-attributed emotion attributions which are thought to be more representative of children's actual feelings. Self-attributed emotion attributions are elicited in a way that requires the child to step into the shoes of the transgressor (e.g., how would you feel if you had committed the act?). This is in contrast to asking a child how the transgressor feels. Further, the study did not include a measure of emotion intensity (e.g., *how sad would you feel?)* which would allow for an even richer understanding of differences in emotion.

The studies by Arsenio (1988) and Arsenio and Fleiss (1996) offer interesting insights into how children interpret emotions in different moral and social scenarios. In addition, the studies provide further support for social domain theory by demonstrating that domains are not only distinguishable through children's patterns of reasoning but also through their attributions of emotion. To build on these findings, further work is needed to improve our understanding of how

emotion attributions are used in facilitating sociomoral reasoning. I propose two key areas where improvements can be made. First, as previously stated, research into children's mixed domain emotion attributions is required. Research in this area will facilitate further development of social domain theory as it will allow us to examine not only how the domains are distinguished but, more importantly, how they are coordinated. It is possible that as children develop a more complex understanding of the emotional consequences of events on victims and victimizers, they will be better able to coordinate among the domains. Support for this idea comes from findings that older children, who are better able to comprehend both social and moral aspects of mixed domain events, are also more skilled at spontaneously attributing mixed emotions to victimizers (Arsenio & Kramer, 1992; Larsen & Fireman, 2007; Lourenco, 1997). Indeed, both Arsenio and Kramer's (1992) and Lourenco's (1997) studies showed that older children (e.g., 6- and 8-year-olds) who were probed for additional emotion attributions often provided emotions of opposite valence and had the capacity to understand conflicting emotions in victimizers. Although never tested, it is possible that children's understanding that transgressors can have multiple and even conflicting emotions at one time improves their ability to consider transgressions from multiple angles (e.g., recognizing both social and moral components). Further, as demonstrated by the happy victimizer literature, older children also appear to have a better understanding of the negative emotions felt by victimizers. Thus, having the ability to consider negative emotions in particular may be important for identifying the moral aspects of a mixed domain event. Because all negative emotion attributions are not equally moral, different types of negative emotion will be coded separately (e.g., anger will be coded separately from guilt or sadness). It is predicted that children who are able to identify multiple negative emotions and mixed negative emotions will demonstrate more sophisticated and integrated domain reasoning.

Within the context of studying emotion attributions for mixed domain events, other important factors to consider relate to study methodology. Specifically, retaining the qualitative nature of the child's response (type of emotion) is also important in order to differentiate between emotions (e.g., sad vs. scared). Finally, follow-up emotion attribution probes will be included in the interview to allow children the opportunity to provide multiple or mixed emotions.

Emotion attributions and behaviour. One reason to study children's understanding of the emotional consequences of moral events is to determine whether associations exist between their attributions and behaviour. If emotion attributions play a role in motivating behaviour or interpreting moral and social situations, then it would be expected that children who struggle to appropriately attribute emotions may also present with behaviour difficulties. This hypothesis has been tested in multiple studies in children (e.g., Arsenio & Fleiss, 1992; Asendorpf & Nunner-Winkler, 1992; Garner, 1996; Malti, Gasser, Buchmann, 2009). Recently, a meta-analysis reviewing 42 relevant studies was conducted (Malti & Krettenauer, 2013). Overall, the meta-analysis indicated that children who recognize moral emotions in victimizers (e.g., sadness, guilt) have fewer behaviour problems compared to children who focus on positive emotions when considering victimizers (moderate effect size, $d = .39$). In addition, there was a relation between children's emotion attributions and prosocial behaviour (small effect size, $d = .26$). Interestingly, the meta-analysis also showed that age did not moderate the relation between emotion attributions and behaviour, suggesting that children do not outgrow their emotion attribution as their cognitive functioning matures, but that their emotion understanding instead reflects true differences in moral understanding. A second interesting finding of Malti and Krettenauer's meta-analysis is that studies who examined children's self-attributed emotions

towards victimizers (e.g., *if you were in X's shoes, how would you feel?*) showed stronger relations between emotion attributions and behaviour compared to other-attributed emotions. Therefore, it appears that asking children to assume the role of the transgressor produces responses that are more reflective of children's actual behaviour.

The current study aims to examine associations between children's externalizing behaviour and their moral judgments and emotion attributions in mixed domain tasks. Given that mixed domain events are typical of everyday moral and social interactions, it is likely that children's performance on these tasks will be more representative of their behaviour. Indeed, children who are better able to consider both moral and social aspects of transgressions may be more skilled at negotiating these situations in their everyday interactions. Similarly, children who recognize negative emotion attributions, or multiple mixed emotion attributions in ambiguous events, might be more likely to weigh these factors in their decision making. By using a mixed domain task in addition to questions that require the child to step into the shoes of the transgressor (i.e., self-attributed emotions), it is expected that associations between emotion attributions, domain coordination and externalizing behaviour will be observed.

Developmental patterns in emotion attributions. The happy victimizer effect demonstrates clear developmental patterns in children's emotion attributions with the majority of studies finding that young children are more likely than older children to attribute positive emotions to victimizers (Arsenio, 2014; Arsenio & Kramer, 1992; Bardon et al., 1980; Chapurro et al., 2012; Nunner-Winkler & Sodian, 1988). There is some inconsistency, however, in terms of the happy victimizer effect in older children. For example, while most studies indicate that the happy victimizer phenomenon diminishes as children reach middle childhood (e.g., approximately age 8-years), others have indicated that the effect can also be found beyond

middle childhood (Murgatroyd & Robinson, 1993). Furthermore, a number of studies have shown that, although the happy victimizer phenomenon is strongest in young children (e.g., ages 4- and 6-years), even 8-year-olds attribute positive emotions to victimizers, albeit not to the same extent as younger children (Arsenio & Kramer, 1992; Lourenco, 1997). A study by Krettenauer and Eichler (2006) examined developmental changes in self-attributed emotion attributions by investigating differences in emotional intensity. Adolescents from grades 7, 9, 11, and 13 were asked how badly they would feel on a scale of "1" (not bad) to "6" (extremely bad) in the context of age-appropriate moral scenarios. Their findings indicated that the developmental pattern was not straightforward and differed depending on the content of the moral scenario. Further, for some stories, an inverted U-shaped pattern was observed. For example, Grade 7 participants reacted more strongly to a protagonist fleeing an accident and giving a false testimony, when compared to participants in Grade 9. However, an increase in emotional reactions was seen for Grades 11 and 13. For other stories (e.g., stealing and not returning a wallet), a decline in emotional intensity was found across the age groups. The authors suggest that the findings provide evidence that adolescent populations may take into greater consideration the contextual factors associated with different types of moral scenarios. The findings highlight the variation that may arise with different types of moral stories. In support of the idea that emotion attributions are context-dependent, performance on the happy victimizer task appears to be determined by multiple factors, not just age. For example, a study by Smetana, Campione-Barr and Yell (2003) found that the happy victimizer effect decreased in middle childhood, but only in the condition where moral acts were not provoked. In the provoked condition, no decrease in the happy victimizer effect was observed. Further, Keller and colleagues (2003) found that the happy victimizer effect was reduced substantially in young children when they were asked to attribute

emotions to the self. Taken together, there appears to be a developmental trend suggesting a reduction in the happy victimizer effect from early to middle childhood; however, the strength of the trend in older children is less clear. One possible explanation is that different study methodologies have led to variability in children's attribution of positive and negative attributions. This is supported by Keller et al.'s (2003) and Smetana et al.'s studies (2003) demonstrating that how emotion attributions are assessed can alter the strength of the happy victimizer effect.

A goal of the present study was to replicate previous developmental findings that demonstrate a decrease in the happy victimizer effect in middle childhood. In addition, this study builds on developmental findings by examining the age-related trend within the context of mixed domain events. Given that mixed domain events may pose a greater challenge for young children, it is anticipated that they will be more likely to attribute positive emotions to the victimizers whereas older children will be more likely to demonstrate an understanding of both positive and negative emotions. To thoroughly investigate children's emotion attributions, this study includes probing questions to evoke multiple emotion responses that may not be provided spontaneously. Further, the current study attempts to replicate previous developmental findings in the mixed domain literature indicating that younger children focus more on conventional aspects of mixed domain transgressions in their reasoning whereas older children focus on both conventional and moral aspects (Crane & Tisak 1995). Similarly, based on findings by Arsenio and Kramer (1992), Lourenco (1997), and Malti, Gasser, & Buchmann (2009), it was expected that older children's justifications will more be more likely to focus on specific moral issues and victim's welfare in comparison to younger children.

Perspective Taking, Emotion Attributions and Moral Development

An additional goal of the present study was to examine whether cognitive aspects of perspective taking (i.e., understanding the cognitive components of another person's point of view; Selman, 1971) are important for processing mixed-domain events. Thus, in this study I looked at relations between children's perspective taking skills, their attribution of emotions, and their capacity to coordinate social and moral domains in mixed domain scenarios. Given that moral and social situations often involve coordinating multiple perspectives (e.g., victim, victimizer, and authority figure), it follows that children with more advanced perspective taking skills may demonstrate a more sophisticated understanding of victims' and victimizers' emotional states as well as a more integrated interpretation of events. In regards to mixed domain events which involve overlapping elements of moral and social transgressions, perspective taking skills may facilitate children's ability to coordinate moral and social domains. For example, in the scenario where a child speaks in class without raising her hand, children with more advanced perspective taking skills may be more capable of coordinating the views of the authority figure (e.g., the child is breaking a rule) and the other classmates (e.g., it is unfair), thus recognizing both the moral and social aspects of the transgression. Similarly, children with superior perspective taking skills may also demonstrate a greater capacity for understanding mixed and conflicting emotional states. Consequently, they may understand that a victimizer not only feels guilt and sadness for the harm inflicted on the victim, but also embarrassment or shame for breaking a rule. In support of this view, a study by Harwood and Farrar (2006) found a significant association between children's emotion attributions and their perspective taking ability. Further, the association was strongest when children were required to recognize conflicting emotions.

At present, no studies have examined relations between social perspective taking, emotion attributions and domain coordination in the context of mixed domain events. There are, however, a few studies that have investigated associations between social perspective taking, emotion attributions and moral reasoning in single domain events (Malti, Gasser & Gutzwiller-Helfenfinger, 2010; Menéres, 2014). Interestingly, both Malti et al. (2010) and Menéres (2014) did not find significant associations between social perspective taking measures and children's moral judgements and emotion attributions. However, the results do not necessarily indicate that social perspective taking does not play a role in understanding moral situations. Indeed, both studies used measures of perspective taking that focused primarily on the cognitive aspects of perspective taking (e.g., understanding that two characters can have different theory of mind for limited visual scenes). It is possible that a perspective taking task that taps into more social aspects of perspective taking may be more related to children's emotion attributions and moral judgements. Further, as previously noted, relations between perspective taking and emotion attributions can differ depending on the complexity of the task, with higher demands on perspective taking in tasks involving conflicting emotions (Harwood & Farrar, 2006). Given that mixed domain transgressions involve more ambiguous and complex interactions, it is possible that perspective-taking plays a larger role in interpreting these events. Thus, in the present study I predicted positive associations between perspective taking and domain coordination as well as between perspective taking and emotion attributions in the context of mixed domain events.

Intelligence (IQ)

The assessment of intelligence is an additional factor that requires consideration in the current study as a control variable. Currently, there are few studies that have looked specifically at the role of intelligence quotient (IQ) in shaping moral development; however, there is a well-

established link between IQ and delinquent behaviour (Barker et al., 2011; Lee & Prentice, 1988; Lösel & Farrington, 2012; Lynam, Moffitt, & Stouthamer-Loeber; Nelson, Smith & Dodd, 1990). These studies have consistently demonstrated an inverse relationship between IQ and delinquency in adolescence even after controlling for race, socioeconomic status, test motivation and whether or not the crime was detected. Several studies have also looked at the association between behavioural problems and IQ in young children; however, the findings are less straightforward. For example, while some studies have found a negative association between hyperactivity and low intellectual functioning (Hinshaw, Morrison, Carte, & Cornsweet, 1987; Sonuga-Barke, Lamparelli, Stevenson, Thompson, & Henry, 1994), other studies have demonstrated positive correlations between IQ and conduct problems (Fergusson & Horwood, 1995). This finding may be due to a greater amount of individual variability in problem behaviour during early childhood, making it difficult to tease apart immoral behaviour from disruptive or hyperactive behaviour. Further, Sonuga-Barke and colleagues (1994) suggest that IQ-related conduct problems may emerge later in development, thus explaining why the relation between IQ and conduct problems has been observed in adolescents. Overall, it was important to include IQ as a covariate as it may confound the relation between moral behaviour, emotion attributions and perspective taking.

Verbal intelligence, in particular, has been associated with aggressive behaviour (Arsenio, Adams, & Gold, 2009; Connor, Steingard, Cunningham, & Anderson, 2004' Séguin, Parent, Tremblay, & Zelazo, 2009), moral reasoning (Dunn, Brown, & Maguire, 1995; Grant, Boucher, Riggs & Grayson, 2005) and emotion understanding (Pons, Lawson, Harris, & Rosnay, 2003; Rosnay, Pons, Harris, & Morrell, 2004). In terms of aggressive behaviour, Connor and colleagues (2004) found that there is an inverse relation between children's verbal ability and

measures of proactive aggression (i.e., instrumental and goal-directed) and reactive aggression (i.e., retaliatory), thus, suggesting that language ability plays a role in reducing aggressive behaviour. Interestingly, Arsenio, Adams and Gold (2009) found that low verbal ability was linked to children with reactive aggression but not proactive aggression, suggesting that proactively aggressive children have a verbal advantage over reactive children. In terms of moral reasoning, research suggests that language ability is particularly important for making moral justifications but may play less of a role in terms of making moral judgements (Grant et al., 2005). Intuitively, this finding makes sense as verbal demands are involved in justifying moral decisions. Verbal ability seems to be most consistently related to emotion understanding. Indeed, research demonstrates that with increasing language ability, children are better able to attribute emotions to others and understand emotion facial expressions (Pons et al., 2003). Given that the current study aimed to examine emotion attributions in the context of mixed domain transgressions, it was important to include intelligence as a covariate.

Overview of the Current Study

In sum, the present study was motivated by two research questions: (1) What role do emotion attributions play in facilitating children's understanding of mixed domain transgressions?, and (2) Do children's attributions of emotions and justifications in mixed domain situations relate to their moral behaviour? To examine these broad questions, the study looks at (a) whether negative and mixed negative emotion attributions are important for moral and conventional domain integration in mixed domain tasks; (b) relations between seriousness, emotion intensity, emotion attributions and justifications to examine whether perspective taking plays a role in children's domain coordination and emotion attributions moral; (c) age-related differences in children's emotion attributions, moral justifications, and domain coordination

abilities; and (d) associations between emotion attributions, domain coordination abilities, and externalizing behaviours. To date, no studies have systematically investigated children's emotion attributions for victimizers in the context of mixed domain events. Thus, the present study expands on previous literature by examining whether emotion attributions are important for the development of domain integration. Domain integration is an important area of study as children are often confronted with events in their everyday life that elicit both moral and social domains of knowledge (Smetana, 1983). Given that mixed domain situations are often more complex and ambiguous, research has shown greater individual variability in how children approach these scenarios (Arsenio & Lemerise, 2004; Crane & Tisak, 1995; Helwig, 1995; Smetana, Killen & Turiel, 1991). In an effort to better understand this variability, a goal of the current study is to examine what kind of role emotion plays in children's domain integration. In doing so, the present study also aims to develop theory by contributing to the existing social domain research on mixed domain transgressions. Specifically, this study examines Turiel and Smetana's (1984) idea that domain development becomes increasingly complex, with higher levels of development reflecting increasingly coordinated reasoning. To build on this idea and on the existing theory, the current study intends to examine whether increasing complexity in domain coordination relates to increasing complexity in children's emotion attributions.

Given that the assessment of children's emotion attributions is broadly defined, it is important to specify how it will be measured. There is some variation in how studies have measured emotion attributions in the past. For example, differences have included whether studies assess the intensity of emotion, probe for multiple emotions, and use self-versus other-attributed emotion questions. Based on Malti and Krettenauer's (2013) finding that studies using self-attributed measures of emotion demonstrated stronger associations with moral behaviour,

the current study will assess children's self-attributions of emotions. Further, follow-up questions to assess multiple or mixed emotions will also be included in the current study. Finally, the current study will also include a measure of intensity of emotion.

In terms of understanding the relation between moral behaviour, emotion attributions, and domain coordination, the present study builds on existing knowledge by examining these relations within the context of mixed domain transgressions. Although there is a well-established link between behaviour and emotion attributions, no studies to date have examined relations between domain coordination and moral behaviour. Further, this study examines whether age moderates the relations between emotion attributions and moral behaviour as well as domain coordination and moral behaviour. In Malti and Krettenauer's (2013) meta-analysis, no moderating effect of age was observed when examining the relation between emotion attributions and social behaviour, suggesting that emotion attributions are equally predictive over a broad age range. For the current study I look at this relation within the context of mixed domain events while also investigating the effect of age on domain coordination. Given that difficulties with domain coordination may have more detrimental effects on behaviour in late childhood as social demands increase, it is possible that the relation between moral behaviour and domain coordination is stronger in older children.

Children ages 6 - to 10-years will be included in the present study. The age of participants in previous studies examining relations between emotion attributions and moral reasoning has ranged from 4 years to 20 years, with the majority of studies including an age range between 7- to 10-years of age (Malti & Krettenauer, 2013). In addition to basing the current study's age range on previous research, this age range was also chosen due to the increased cognitive and emotional complexity of understanding mixed domain tasks, which are the primary focus of the

current study. Indeed, this age range coincides with two processes that are thought to be important for interpreting mixed domain events, namely social perspective taking and understanding mixed emotions (Arsenio & Lover, 1995; Larsen & Fireman, 2007; Selman, 1976).

Study Hypotheses

Based on the literature reviewed above, three primary hypotheses were tested:

Hypotheses 1: Associations between emotion attributions, justifications, and perspective taking. 1a) For the first hypothesis, I predicted that greater complexity in children's emotion attributions would predict an increased likelihood of domain coordination in children's justifications. Higher emotion complexity scores reflected mixed negative emotion attributions (e.g., "sad" and "embarrassed"), whereas lower scores reflected purely positive emotion attributions. High domain coordination scores reflected responses that recognized both moral and social components of mixed domain transgressions.

1b) Second, I predicted that seriousness ratings would be higher for moral transgressions in comparison to mixed domain transgressions.

1c) Third, I predicted that emotion complexity scores and justification scores would predict ratings of seriousness, with higher scores associated with higher ratings of seriousness.

1d) Fourth, I hypothesized that there would be positive associations among perspective taking and domain coordination, as well as perspective taking and emotion attributions. Specifically, for emotion attributions, I predicted that a greater number of positive emotion attributions would be associated with a lower perspective taking score.

Hypotheses 2: Age-related differences in emotion attributions and moral judgements.

I hypothesized that (2a) younger children would be more likely than older children to attribute positive emotions to transgressors. I also expected that (2b) younger children would focus more on the conventional aspects of a mixed domain transgression, whereas older children would be more likely to integrate both the conventional and the moral aspects of a transgression in justifying why an event was right or wrong. Finally, I predicted that (2c) older children would have higher justification scores in comparison to younger children.

Hypotheses 3: Associations between moral behaviour, emotion attributions and domain coordination. First, (3a) I expected that children who attribute more positive emotions to victimizers will have more externalizing problems as measured by parent ratings on the CBCL. I also predicted that (3b) higher domain coordination scores would predict lower externalizing scores.

Method

Participants

The sample consisted of 66 typically developing children between the ages of 6- and 10-years-old and their caregivers. Participants were recruited through 1) word-of-mouth, 2) community advertisements, 3) social media, and 4) advertisements through the Victoria and Comox Valley school districts. In regards to recruitment through the school districts, letters of invitation were distributed to families of eligible children. If the student and his or her guardian agreed to participate in the project, they were asked to contact the researcher. Exclusionary criteria included children with a diagnosed developmental disorder, children who are not proficient in the English language, and children with a full scale intelligent quotient (FSIQ) of 70 or below as measured on a standardized measure of cognitive performance. Children were tested in either the Child Development Lab at the University of Victoria or in the family home. If the child was tested in the home, the administration of tasks was completed in a quiet room away from the parent. Table 1 shows demographic information. For data analysis purposes, participants were separated into age groups that consisted of 20 six- to seven-year-olds, 24 seven- to nine-year-olds, and 22 nine- to ten-year-olds. Children and caregivers completed the assent and consent forms, respectively, upon meeting with the examiner.

Table 1. *Participant Demographics*

Chronological age (months)	
Mean(SD)	97.39 (16.25)
Range	72-130
Sex	
Male	34
Female	32
Maternal Education (years)	
Mean (SD)	17.85 (3.55)
Range	10-28

Paternal Education
   Mean (SD)
   Range   16.56 (3.20)
               12-28
Ethnicity*
   Canadian   52
   Aboriginal   3
   Middle Eastern 1
   South Asian
   German   6
   Hispanic   2
              1

*participants self-reported their ethnicity

Materials

For the moral judgement and emotion attributions task, six 10 X 15 cm cartoon drawings were used to illustrate the moral and mixed domain transgressors (see Appendix C for an example).

Measures

Caregiver report measures.

Demographics. Caregivers of child participants were given demographic questionnaires to rule out developmental disabilities or psychiatric conditions. Parents were also asked to report demographic information including ethnicity, sex and age (See Appendix A).

Child Behavior Check-List (CBCL; Achenbach, 1991). The externalizing scale of the CBCL was administered to caregivers. This measure was chosen based on its psychometric properties and prior use in similar studies. Indeed, previous studies examining relations between emotion attributions and moral behaviour have found significant results using the CBCL (Malti & Keller, 2009).

The CBCL6-18 is a norm-referenced measure used for identifying problem behaviour in children ages 6- to 18-years. Ratings are representative of caregiver's judgements over the past

six months. The externalizing scale is comprised of items from the delinquent behavior and aggressive behavior domains and is composed of 33 questions. The subscales assess a range of problem behaviors (e.g., from "breaks rules at home, school, or elsewhere" to "cruelty, bullying, or meanness to others"). Parents rate each item on a 3-point Likert scale (*not true: [0], sometimes true [1], very true or often true [3]*). Scoring the externalizing scale yields a broadband factor score with higher T-scores representing more problematic behaviour. The CBCL is a well-established measure that has strong psychometric properties. Test-retest reliability coefficients have been shown to be above 0.95 and construct validity has been established.

Child Measures

  Domain coordination events. Two of the mixed domain events selected in the present study were adapted from Crane and Tisak (1995) and included two separate vignettes. Crane and Tisak's mixed-domain events were previewed by a group of university students and the events selected were those vignettes that the majority of judges categorized as conventional (approximately 55-78%), but still a sizable number of people rated as moral (approximately 10%). In total, they identified mixed-domain events that included both moral and social components. The two mixed-domain vignettes used in the present study are set at school. For example, in one school-based event, a child is talking in class without raising their hand. In this example, the social-conventional transgression is that the child is breaking the teacher's rule. This event could also be considered moral, however, as it can be viewed as unfair to the other children. Two additional exclusionary tasks were selected for the mixed domain tasks. These tasks were adapted from Killen et al. (2000). The first exclusion story consisted of a child with a physical disability who was asking to join a group of peers playing soccer. A player on the team

indicated that the child could not join because they only wanted "good" players on the team. The second exclusion story consisted of either males or females playing a gender traditional activity. A child of the opposite gender asked to join, and one of the players indicated that they could not join because it was only for "girls/boys". Materials for the task included four drawings (10 X 15cm) accompanying each of the mixed-domain events. Each of the drawings displayed the characters involved in each event, all drawn with neutrally affective expressions. In addition, the examiner read out descriptions of each scenario verbally from a script (see Appendix for each script); again, the script contained no reference to the affect of the characters. Two sets of stories and drawings were created, one set with the central character being male and one set with the central character being female. Stories were matched to participants by sex.

Single rule events. In addition to the four mixed domain-events, two straightforward moral events were included in the study. The two events were adapted from studies by Arsenio and Kramer (1992) and Nunner-Winkler and Sodian (1988). Each transgression was illustrated by a three-frame sequence of cartoons (10 X 15 cm) with a brief verbal description of the events (see Appendix). For example, in a situation involving a child pushing another child off a swing, the first frame depicts a child playing on a swing. In frame 2, a peer comes and pushes the child off the swing because he/she wants to play and only one swing is available. In frame 3, the pushed child lies on the ground and the victimizer is playing on the swing. The second moral event involves a similar three-frame sequence but instead of physical harm, it depicts a child stealing from another child. As in the mixed-domain drawings, all cartoons were drawn with neutral affect and the verbal descriptions did not make any reference to emotions felt by the characters. Additionally, the sex of the protagonist is matched to the sex of the participant.

The order of mixed-domain events and moral events was counterbalanced to control for order and practice effects.

Assessments of children's judgements. At the outset, children were told that they will hear six different stories and that after each story they will be asked questions about the story and how the characters in the story feel. Once the experimenter verbally described a vignette and presented the appropriate picture frame(s), all participants were asked a series of questions following each story. The pictures remained on the table as the children responded to the questions. The questions were adapted from previous studies of child's reasoning about moral, conventional and mixed events (Crane & Tisak, 1995; Lourenco, 1997; Tisak & Turiel, 1988; Turiel, 1983).

1. Was it right to do what [the victimizer did], why? (Evaluation of whether the child understands the rule).

2. If the [teacher] said [children are allowed to talk without raising their hands], is it okay for the teacher to say that? (Authority legitimacy).

3. If the teacher said [talking without raising your hand] was allowed, would it be okay if a child decided to talk without raising his/her hand one day at school? (Authority contingency). Why [or why not] would it be okay?

4. How bad was it that the boy committed the act? (Rating of seriousness) In this question, children were asked to point to a face which depicted the degree of badness from a scale of 0 (not bad at all; smiley face) to 2 (very bad; large frown face).

Assessment of children's justifications. Drawing on Crane and Tisak's (1995) study, children were asked to justify their responses for questions 1 and 3. Justifications were used to determine whether children are focusing on moral or conventional events or both. Thus, their

responses provided a measure of domain coordination. Take the example of a child talking without raising their hand: a child may justify the event as bad because it is unfair to the other children (morally focused), because a rule has been broken (socially focused), or because of both, unfairness and rule violation (coordination between the domains). If children responded with only one justification to question 1, they were probed by the experimenter for another explanation (i.e. "Is there another reason?").

Coding of children's judgements and justifications. In terms of judgements, children's responses to questions 1 through 3 were coded as "1" for responses indicating the act is okay, and "0" for responses indicating the act is not okay. Question 4 was coded as stated in the question with a total possible score of "2" for each vignette. The coding system drew on past research by Crane and Tisak (1995), Smetana (1981), and Tisak and Turiel (1988).

Participants' domain coordination scores were calculated based on a 3-point coding system that awards higher scores to responses that consider both moral and conventional aspects of the vignette. A score of "0" was assigned to justifications that only recognize the social-conventional aspects of the event (e.g., "it is wrong because it is against the teacher's rules"). A score of "1" was assigned to responses that recognize the moral aspects of the event (e.g., "it is wrong because it is unfair to the other kids"), but fails to make reference to the social aspects when asked. Finally, a score of "2" was assigned to responses that attend to the moral aspects of the vignette in addition to the social conventional aspects (e.g., "it is wrong because it harms the victim and because it is against the authority's rules").

Participants' justifications were also scored based on coding systems used in related studies (Arsenio & Kramer, 1992; Arsenio & Fleiss, 1996; Keller et al., 2003; Lourenco, 1997; Malti, Gasser, & Buchmann, 2009; Menéres, 2013; Smetana, Campione-Barr & Yell, 2003;

Tisak & Turiel, 1988; Wiersma & Laupa, 2000). Justifications were coded into four separate categories The categories included: (1) Hedonistic reasons (i.e., reasons that focus on self-gain and fulfillment of personal needs [e.g., "he is happy because he gets the swing"]; coding = 1); (2) Sanctions-oriented or rule-based reasons (i.e., responses that focus on external authority and rules [e.g., "he is scared because he is going to get in trouble"]; coding = 2); (3) Vague Moral (i.e., makes reference to vague moral concerns and norms [e.g., "stealing is bad"]; coding = 3); (4) Specific moral concerns (i.e., injustice, unfairness); coding = 4; and (5) Other-Oriented (i.e., shows concern for the well-being of the victim; coding = 5). Scores for justifications could range from 1 to 5, with higher scores indicating more sophisticated moral reasoning. There have been past studies that have rated moral and empathic/other-oriented justifications as equivalent with regards to their level of coding, and, hence, level of developmental sophistication (e.g., Malti, Keller, Gummerman, & Buchmann, 2009; Malti, Gasser, & Gutzwiller-Helfenfinger, 2010). It could also be argued that other-oriented justifications fall within the category of specific moral justification. This decision to score other-oriented justifications as "higher" than specific moral justifications was based on the assumption that the development of moral understanding constitutes a growing understanding of the victimizer's viewpoint and the harmful impact of an act on the victim (Smetana et al., 2003). Although justifying that a transgression was unfair or unjust may involve a certain level of understanding for the victim, it may also reflect a simple repetition of a learned rule (e.g., it is unfair not to share). Thus, in order to account for this distinction while assuming that increasing understanding of the victimizer's perspective is related to a more sophisticated level of moral reasoning, other-oriented responses were distinguished from and scored higher in comparison to specific moral responses.

In regards to follow-up probes, children's follow-up justifications were coded into the same categories as their initial justifications. The final score, however, was calculated based on the most sophisticated level of reasoning across both the first and second responses. For example, if a child first gave a sanctions-oriented response (score = 0), but, upon follow-up probes, provided a vague moral response (score = 3), a score of 3 was assigned as the child's justification score. Thus, the child's most sophisticated response overall was scored. To assess interrater reliability, thirty percent of interview responses were double coded. When there were discrepancies between raters' codings, a third coder coded the data and resolved the discrepancies.

Assessment of emotion attributions. Prior to viewing the stories, children were introduced to the affective rating scale, a 5-point Likert scale ranging from 0 (only a little) to 4 (very much). The scale did not make reference to any particular emotion, but rather was used as a tool for the child to provide a rating for any emotion response. Children were trained on the scale using a happiness example. Next, participants were told that they would not be able to use facial expressions to determine the feelings of the characters in the stories because they are drawn with blank expressions.

Once the child had been trained on the affective rating scale, the experimenter administered the stories and questions. Drawing on Lourenco's (1997) and Malti, Gasser, and Buchmann's (2009) studies, the emotion attribution questions included the following:

1. If you were [the transgressor], how would you feel at the end of the story?

2. How [sad] would you feel? (child uses affective rating scale)

3. Do you think you could feel anything else? What?

No further probe questions apart from the ones listed were asked.

Coding of emotion attributions. Drawing on Malti et al. (2009), Lourenco (1997) and Menéres (2014), emotions were categorized as positive (1) (e.g., happy, excited); negative-angry (2); negative-sad/bad/guilty (3); negative-embarrassed (4); neutral (6); or "I don't know" (0). Next, an emotion complexity score was calculated where "0" reflected only positive or "I don't know" attributions for the initial and follow-up responses, "1" reflected positive and negative emotions, "2" reflected a unidimensional negative emotion, and "3" reflected two separate negative emotions. Thus, children who provided separate negative emotion attributions scored highest on this measure. Higher scores on this measure were believed to reflect an increased maturity in children's understanding of emotion attributions. Thus, this measure was referred to as *emotion complexity*.

Intensity of emotion was scored using the affect rating scale with negative emotions assigned negative values associated with the degree of intensity and positive emotions assigned positive values representing intensity. For example, an attribution of happiness with an intensity rating of "3" would be coded as positive "3," whereas an attribution of sadness with an intensity rating of "3" would be coded as negative "3."

Perspective taking.

Selman's Perspective Taking Task (Holly Task, Selman & Byrne (1974). Children's perspective taking skills were assessed using Selman's Holly task. The Holly task is an open-ended interview that aims to tap into the different developmental levels of perspective taking. The task has been used with children from 4- to 10-years. Children were read the following story:

> *Holly is an 8-year-old girl who likes to climb trees. She is the best tree climber in the neighbourhood. One day while climbing a tree she falls off the bottom branch but does*

not hurt herself. Her father sees her fall, and is upset. He asks her to promise not to climb trees any more, and Holly promises. Later that day, Holly and her friends meet Sean. Sean's kitten is caught up in a tree and cannot get down. Something has to be done right away or the kitten may fall. Holly is the only one who climbs trees well enough to reach the kitten and get it down, but she remembers her promise to her father. (Selman, 1976, pp. 302)

Following the story, children were asked the following questions:

1. Does Holly know how Sean feels about the kitten? Why?

2. Does Sean know why Holly can't decide whether or not to climb the tree? Why or why not?

3. Why might Sean think Holly will not climb the tree if Holly doesn't tell him about her promise?

4. Does Sean know why Holly cannot decide to climb the tree?

5. Will Holly's father understand if she does decide to climb the tree? Why or why not?

As outlined by Selman (1976), the above questions correspond to subjective and self-reflective levels of role-taking. At the subjective level, the child is thought to have the capacity to understand that two individuals may share differing perspectives due to prior knowledge and differing information. However, at this level, children still struggle to maintain simultaneous perspectives, and are unable to judge their own actions from the perspective of another. In the Holly task, children who recognize that Sean does not know why Holly can't decide to climb the tree (because he wasn't there when the promise was made), and are capable of making inferences about how Sean feels in the situation are thought to be at the Subjective role-taking stage. At the self-reflective level, Selman proposes that children are now able to perceive how others view

their own actions and motivations. Further, they understand that outsiders are capable of taking on their perspective and stepping into their shoes. This level of perspective taking allows them to alter their actions and behaviours in accordance with how others might judge them. Additionally, children at the self-reflective stage show signs of two-way reciprocity, meaning that they understand and can reflect on reciprocity of intentions, thoughts, and feelings between two persons. In the Holly task, children demonstrate two-way reciprocity when they are able to reason that Holly's father may understand why she climbed the tree if she explained that the situation was an emergency, as he might see it as an exception to the rule. Children who are not capable of subjective and self-reflective levels of perspective taking are thought to be at the undifferentiated or egocentric stage. At this level, children have difficulty recognizing that the self and others can have distinct viewpoints, thoughts and feelings. Children who believe that others think and feel the same way as they do would be considered to be at the undifferentiated stage. For the Holly task, a child who is unable to recognize how Sean might feel, or that Sean would not know about the promise, would be considered to be at the undifferentiated level.

Scoring. The first question was scored on scale of 0-2, with "0" points reflecting an inability to imagine how Sean might feel (e.g., "no because he didn't tell her"). A score of "1" was given if a child was able to predict how Sean might feel, but lacked differentiation between Sean's and Holly's thoughts (e.g., "He is scared"). A "2" was given if the child approached the question from the perspective of Holly (e.g., "she thinks he is scared because she can see it on his face"). Question 2 was scored on scale of 0-1, where a "0" score was given if the child did not recognize that the promise was privileged information (e.g., "Yes, because she is not allowed), and a score of "1" was given if the child did recognize that the promise was privileged information (e.g., "No, because she didn't tell him about the promise"). Question 3 was scored

on a 0 - 2-point scale. A 0-point response reflected either a) an irrelevant response, or b) a response that was from Holly's perspective (e.g., "she won't climb trees again"). A score of "1" was given to responses that described an action but did not comment on Sean's thinking (e.g., "he won't be her friend"), and a score of "2" was given to responses that took the perspective of Sean and commented on his thoughts or feelings (e.g., "He would think that she doesn't care about him or his cat"). Finally, question 4 was scored on a 0–3-point scale. Responses given a "0" score were vague, undifferentiated, or nonsensical (e.g., "I don't know", "Sean doesn't want the cat to fall"). A point of "1" point was given if responses were action-focused and failed to integrate Holly's or her father's perspective (e.g., "Yes, because she will save the cat"). A score of "2" was given if the response showed a better understanding of the father's perspective (e.g., Yes, because it was an emergency and she is helping an animal that could get hurt"). Finally, a score of "3" was given if the participant differentiated between both perspectives and demonstrated two-way reciprocity (e.g., "he will understand because Holly will tell him that it is an emergency"). A total perspective taking score will be calculated by summing each of the four scores. Thus, total scores ranged between 0 and 8, with higher scores reflecting more advanced perspective taking.

Intelligence.

Kaufman Brief Intelligence Test (KBIT-2; Kaufman & Kaufman, 2004). The KBIT-2 is standardized measure of verbal and non-verbal ability with norms available for ages 4- to 90-years of age. The measure takes approximately 20 minutes to administer and produces scores for crystallized and fluid intelligence, in addition to an overall intelligence score. The KBIT-2 demonstrates high reliability and validity.

Procedure

The present study used a within-person cross sectional design. Participants were tested individually at their home or in the child development lab at the University of Victoria. The experimenter ensured a quiet working environment during the testing in order to maintain consistency across the range of settings. The KBIT-II task was administered first, followed by either the moral and mixed domain interview and the perspective taking task. All task instructions were given orally. To control for order effects within the moral and mixed domain interview task, the order of the six vignettes was counterbalanced. At the mid-point of testing, children were given the option to take a break. This option was provided to enhance children's attention and maintain their interest in the tasks. At the end of the session, children were thanked for their time and invited to select a small gift for participating. Testing required approximately 60 minutes of the child's time.

In addition to the tasks administered to children, parents were asked to complete questionnaires and a demographic form during their child's testing session.

Interrater Reliability

A group of eight independent raters were randomly assigned subsets of participant transcripts for evaluation. The transcripts included participant responses for the moral reasoning task and the perspective taking task. In total, 30 percent of transcripts were double coded by individual raters. The experimenter completed coding for the remaining participants. Both the experimenter and the raters were blind to the child's age, sex, and performance on other study variables. Unless otherwise stated, discrepant values between coders were re-coded by the experimenter.

One-way random intra-class correlation coefficients (ICCs) were calculated for continuous data. For the continuous moral reasoning data, high reliability was achieved across items (>.85). With regards to the perspective taking task, high interrater reliability was achieved (>.77) on all but one question. Specifically, independent ratings of participants' responses to the question: "Would Holly's Father Understand?" demonstrated poor interrater reliability (.395). Upon further examination, raters were primarily disagreeing on whether the response received a score of 1 or 2 points out of a total possible score ranging from 0 to 3. A score of "1" was given if responses provided an action-based rationale for why the father would understand (e.g., "yes, because she will save the cat"). A score of "2" was given if the response further elaborated on why her father would understand (e.g., "yes, because it is an emergency/she is helping an animal that could get hurt"). Given that 1- and 2-point responses appeared to be closely related and difficult to distinguish in the data, the two levels were combined and the resulting score for this question ranged from 0 to 2. Thus, the total perspective-taking score ranged from 0 to 8. Follow-up ICC analysis of the modified variable showed good reliability (.68), as per the descriptions outlined by Cicchetti (1994).

Fleiss' Kappa was used to calculate interrater reliability for categorical data. Unlike Cohen's Kappa, Fleiss' Kappa is optimal when the number of raters is not fixed. Based on Cicchetti's (1994) descriptors, excellent reliability (>0.75) was achieved for 73% of the coded variables, good reliability (>.6) was observed for 16.6% of the variables and fair reliability (0.4 to 0.59) was observed for 10% of the variables, with only one variable with rater disagreement below 0.5. Visual inspection of the differences between raters indicated that the number of differences in ratings ranged from 0 to 4 across each moral or mixed domain story. A closer examination of the differences indicated that discrepancies were more common on items where

raters were asked to sort participants' moral and conventional justification(s) into categories. The specific categories that led to the most problematic reliability scores were: "vague moral justifications", "specific moral justifications", and "other oriented explanations". There was less discrepancy with regards to sorting the justifications into rule-based and/or punishment-based justifications. As stated above, discrepancies in coding were re-examined and scored by the experimenter who was blind to participant and coder characteristics; however, the experimenter was aware of the discrepant ratings. The data points that were included in the final data set included those ratings that were rated consistently by the experimenter and one of the coders.

Lack of consistency in ratings can arise from several sources. For example, error may be attributed to a lack of specificity with regards to operational definitions in the scoring criteria, lack of clarity during the training, rater biases, and rater drift (Kimberlin & Winterstein, 2008). Given that a portion of the variables in the current study were below the "excellent" range, it is important to exercise caution when interpreting the results.

Results

Data screening procedures are described first. Next, I provide an overview of descriptive statistics and correlations among the study variables. Third, I describe main effects for sex and story type on three variables: 1) children's moral justification scores, 2) children's emotion complexity scores, and 3) children's domain coordination scores, using mixed analyses of variance (ANOVAs). Finally, the following sections describe analyses used to carry out hypotheses testing.

Missing Data

Missing data in child measures. Missing data was observed across several of the child variables due to the following reasons: a) the child was not willing to complete the remainder of a task b) the experimenter ended a task early due to participant disengagement, or c) the experimenter did not include a question during the moral reasoning task. Overall, missing data represented 7.26% of responses from children.

A closer look at the data set revealed that a large proportion of the missing child data was associated with seven participants who discontinued the moral reasoning task prematurely due to disengagement and/or refusal to complete the task. Missing data on the moral reasoning task may have been related to factors such as younger age, lower cognitive ability, or disruptive behaviours. Consequently, additional exploratory analyses were run to explore whether meaningful differences existed between the completers and non-completers. Analyses to compare the two groups included a series of t-tests that were calculated on the following variables: a) age, b) overall IQ, c) verbal IQ, d) nonverbal IQ, e) overall externalizing score, and f) inattention score. There were no significant group differences in scores for age ($t(64) = -.14$, $p = .889$), IQ ($t(64) = 1.12$, $p = .267$), verbal IQ ($t(64) = .943$, $p = .349$), nonverbal IQ ($t(64) = 1.05$, $p = .297$), externalizing behaviours ($t(62) = .511 = p = .611$), or attention problems ($t(63) = $

.115 = *p* .909). Thus, it was concluded that there was no significant pattern to the missing child data and that they were missing at random. This conclusion was confirmed by running Little's MCAR test on subsets of data which revealed non-significant results, indicating that the data was missing completely at random. To avoid reductions in sample size, values were imputed using the Expectation-Maximization (EM) algorithm in SPSS 21.0 to complete the Maximum Likelihood estimates for missing data. EM is an iterative method that provides estimates of the mean vector and covariance matrix for a set of parameters. The EM method is recognized as a robust and acceptable method for imputing missing data (Couvreure, 1999). Analyses discussed in the results are based on the imputed data set.

Missing data in parent measures. Missing data in the parent questionnaires accounted for 3.03% of responses from parents. Data was missing due to participants' failing to answer. The missing values appeared to be missing at random. T-tests were conducted on relevant parent variables to compare group means of completers and non-completers to further explore whether data is missing at random. There were no significant group differences in scores for income ($t(60) = -.06$, $p = .95$), parent education level (mother's: $t(61) = .165$, $p = .869$; father's: $t(61) = 0$, $p = 1$) or child's age ($t(64) = 1.53$, $p = .13$). As a result, missing data was judged to be missing at random. Because the missing data was <5% for the parent measure, pairwise deletion was used to address missing data in parent variables. Generally, for missing data that is less than 5% and missing at random, there are minimal ramifications for using less sophisticated methods of dealing with missing data (Little et al., 2013).

Outliers. Dichotomous and continuous variables were examined for outliers. With regard to dichotomous data, variables with an uneven split that exceeded a 90:10 ratio were flagged and omitted from statistical analyses. To assess for univariate outliers in continuous data, scores were

transformed to standardized scores and z-scores greater than +/-3.29 were flagged, as per the criteria outlined by Tabachinick and Fidell (2013). An outlier was observed for the total number of positive emotions given which includes the initial and follow-up emotion attribution. For this variable, the data was analyzed with and without the outlier.

      Normality. Graphical and numerical measures were taken to assess normality. Skew and kurtosis values for each variable were produced as well as calculations of skew and kurtosis z-scores to examine whether they significantly differed from normality. When summing Moral Justification, emotion complexity, and domain coordination scores across the six moral stories, no violations of skew or kurtosis were observed (z-scores below 1.96). However, when assessing the variables within each story, violations of skew and kurtosis were observed. Specifically, skew violations were found for the gender exclusion, swing push, disability exclusion, and stealing emotion complexity variables. Moderate skew was also observed on the swing push, chalkboard, and disability moral justification scores. All skew violations were in the negative direction except for children's justifications in response to the chalkboard story. For the emotion complexity variables, this can be interpreted as the majority of children providing negative emotion attributions in response to these stories. In terms of the skewed moral justification variables, most children provided justifications that could be categorized as moral or other-oriented for the disability and swing push stories. In contrast, in response to the chalkboard story, children were more likely to provide justifications related to rules or punishment. For a more detailed look at the proportion of justification and emotion attribution responses across age and story type, see Tables 2, 3, and 4.

      Violations of kurtosis were observed for children's moral justification scores on the swing push story, emotion complexity scores on the disability story, and domain coordination

scores on the gender exclusion, chalkboard, and disability exclusion stories. Visual inspection indicated that the gender exclusion, disability exclusion, and swing push stories were positively skewed (leptokurtic) on the emotion complexity and domain coordination variables. In contrast, the data was negatively skewed (platykurtic) on the chalkboard domain coordination variable.

As suggested by Tabachnick and Fidell (2007), a Square-Root transformation was attempted to mitigate departures from normality. The results of the transformations did not indicate significant improvements in normality, thus, transformed data was not included in the results.

Bivariate correlation analyses were run between study variables to assess for multicollinearity. All correlations were below .9 and were assumed to not be problematically correlated.

Table 2. *Proportions (Standard Deviations) of Children's Moral Justifications by Age Group and Story Type*

| | | | 6- to 7¼-year-olds | | | | | | | 7¼ - to 9-year-olds | | | | | | | 9- to 10-year-olds | | | | |
Justification Categories	S1	S2	S3	S4	S5	S6	*M* *(sd)*	S1	S2	S3	S4	S5	S6	M *(sd)*	S1	S2	S3	S4	S5	S6	M *(sd)*
Punishment-Based	.00	.00	.00	.00	.22	.06	.05 *(.09)*	.00	.00	.00	.00	.13	.00	.02 *(.05)*	.00	.00	.05	.00	.10	.00	.02 *(.04)*
Rule-Based (Sanctions)	.05	.20	.11	.06	.56	.33	.22 *(.19)*	.04	.13	.04	.09	.50	.18	.16 *(.17)*	.00	.05	.05	08	.29	.18	.11 *(.11)*
Vague Moral	.50	.30	.33	.29	.06	.28	.30 *(.14)*	.26	.25	.42	.30	.25	.18	.28 *(.08)*	.15	.10	.43	.23	.33	.05	.19 *(.15)*
Specific Moral	.20	.15	.28	.18	.11	.22	.19 *(.06)*	.44	.04	.29	.17	.04	.45	.24 *(.18)*	.40	.05	.29	.29	.14	.55	.28 *(.17)*
Other-Oriented	.25	.35	.28	.47	.06	.11	.26 *(.16)*	.26	.58	.25	.43	.08	.18	.30 *(.18)*	.45	.81	.19	.52	.14	.23	.39 *(.26)*

*S1 = Stealing; S2 = Swing Push; S3 = Gender Exclusion; S4 = Disability Exclusion; S5 = Chalkboard; S6 = Talking in Class
**Descriptive statistics based on non-imputed data.

Table 3. *Proportions (Standard Deviations) of Children's Initial Emotion Attributions by Age Group and Story Type*

Emotion Categories	6- to 7 ¼-year-olds							7 ¼ - to 9-year-olds							9- to 10-year-olds						
	S1	S2	S3	S4	S5	S6	*M (sd)*	S1	S2	S3	S4	S5	S6	*M (sd)*	S1	S2	S3	S4	S5	S6	*M (sd)*
Positive	.20	.00	.11	.06	.32	.17	.14 (.09)	.13	.00	.04	.00	.04	.09	.05 (.04)	.29	.00	.05	.00	.14	.09	.10 (.09)
Negative (Angry)	.05	.05	.06	.06	.05	.00	.05 (.02)	.09	.00	.00	.00	.00	.00	.14 (.03)	.00	.00	.05	.00	.05	.00	.16 (.02)
Negative (Sad, guilty, bad)	.60	.95	.83	.88	.53	.56	.72 (.15)	.78	.91	.88	.96	.79	.68	.83 (.08)	.67	.86	.76	.91	.52	.73	.74 (.11)
Negative Embarrassed, shame	.10	.05	.00	.00	.05	.22	.07 (.07)	.00	.04	.00	.00	.04	.13	.04 (.04)	.05	.00	.00	.00	.05	.09	.04 (.03)
Neutral	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.08 (.02)
Don't Know	.05	.00	.00	.00	.05	.06	.03 (.02)	.00	.04	.08	.05	.13	.09	.07 (.04)	.00	.14	.14	.10	.19	.09	.10 (.06)

*S1 = Stealing; S2 = Swing Push; S3 = Gender Exclusion; S4 = Disability Exclusion; S5 = Chalkboard; S6 = Talking in Class
**Descriptive statistics based on non-imputed data.

Table 4. *Proportions of Children's Second Emotion Attributions by Age Group and Story Type*

| | Age Group | | | | | | | | | | | | | | | | | | | | |
| | 6- to 7¼-year-olds | | | | | | | 7¼ - to 9-year-olds | | | | | | | 9- to 10-year-olds | | | | | | |
Emotion Categories	S1	S2	S3	S4	S5	S6	*M (sd)*	S1	S2	S3	S4	S5	S6	*M (sd)*	S1	S2	S3	S4	S5	S6	*M (sd)*
Positive	.22	.11	.33	.17	.15	.20	.20 (.06)	.05	.15	.05	.00	.05	.05	.06 (.04)	.11	.11	.12	.00	.06	.06	.07 (.04)
Negative (Angry)	.00	.00	.00	.00	.00	.00	.00 (.00)	.09	.05	.10	.18	.14	.05	.10 (.04)	.00	.00	.00	.00	.00	.00	.00 (.00)
Negative (Sad, guilty, bad)	.44	.44	.33	.17	.23	.27	.31 (.10)	.46	.50	.29	.31	.27	.40	.37 (.08)	.53	.32	.47	.21	.25	.33	.35 (.10)
Negative Embarrassed, shame	.00	.00	.13	.08	.23	.13	.10 (.08)	.05	.00	.00	.00	.05	.10	.03 (.04)	.05	.11	.00	.07	.00	.11	.06 (.04)
Neutral	.00	.00	.00	.00	.00	.00	.00 (.00)	.00	.00	.00	.06	.09	.00	.04 (.04)	.05	.05	.00	.00	.06	.11	.06 (.03)
Don't Know	.06	.00	.00	.00	.08	.07	.20 (.07)	.00	.00	.10	.06	.14	.05	.12 (.15)	.00	.11	.06	.07	.25	.17	.16 (.11)
No	.28	.44	.20	.58	.31	.33	.32 (.16)	.36	.30	.48	.38	.27	.35	.28 (.12)	.26	.32	.35	.64	.38	.22	.36 (.14)

*S1 = Stealing; S2 = Swing Push; S3 = Gender Exclusion; S4 = Disability Exclusion; S5 = Chalkboard; S6 = Talking in Class
**Descriptive statistics based on non-imputed data.*

Descriptives and Preliminary Analyses

Table 5 presents the descriptive statistics for the following study variables: externalizing behaviours, perspective taking, total IQ, and total positive emotion attributions. Descriptive data is grouped by age and sex. Four, 2(Sex) X 3(Age) factorial analyses of variance were conducted on the variables to examine age and sex interactions. Results indicated a significant interaction for sex and age on the perspective taking variable, $F(2,60) = 6.54$, $p = .003$, $\eta^2 = .179$. To probe the significant interaction, simple main effects analysis was used. The results indicated that girls were outperforming boys in the youngest and middle age groups, however, boys scored higher than girls in the oldest age category. A significant interaction was also found for the externalizing behaviour variable, $F(2,58) = 3.65$, $p = .032$, , $\eta^2 = .112$. Follow-up simple main effect analyses indicated that the youngest female group had significantly higher externalizing behaviour scores in comparison to the middle age group for females. No other mean differences appeared to reach significance. With regards to IQ, no significant group differences were found for sex, $F(1,60) = 2.39$, $p = .127$ or age, $F(2, 60) = 3.11$, $p = .052$. No sex differences were found for total positive emotion scores, $F(1, 60) = .334$, p $= .565$. Age differences were found and will be discussed below in the developmental hypotheses section.

Tables 6, 7, and 8 present the descriptive data by age for emotion complexity, domain coordination, and moral justification scores across the six stories. No significant sex differences were found for children's total emotion complexity, $F(1, 64) = .831$, $p = .366$, and domain coordination scores, $F(1,64) = 2.21$, $p = .142$.

Table 5. *Means (Standard Deviations) for Children's Performance on Tasks by Age Group and Sex*

	Age Group								
	6- to 7 ¼-year-olds			7 ¼ - to 9-year-olds			9- to 10-year-olds		
Variables	Male *(N=10)*	Female *(N=10)*	M *(SD)* *(N=20)*	Male *(N=11)*	Female *(N=13)*	M *(SD)* *(N=24)*	Male *(N=13)*	Female *(N=9)*	M *(SD)* *(N=22)*
Externalizing Behaviours	48.80 *(10.34)*	55.50 *(8.87)*	**52.15** ***(9.98)**$	53.73 *(10.46)*	46.25 *(7.28)*	**49.83** ***(9.52)**$	47.67 *(11.09)*	52.89 *(8.68)*	**49.90** ***(10.24)**$
Perspective Taking*	2.70 *(1.95)*	4.10 *(1.29)*	**3.40** ***(1.76)**$	3.09 *(1.38)*	4.62 *(1.32)*	**3.92** ***(1.53)**$	5.00 *(1.15)*	3.67 *(1.73)*	**4.45** ***(1.53)**$
Mixed Emotions*	6.30 *(1.25)*	6.83 *(.80)*	**6.56** ***(1.06)**$	6.27 *(.79)*	7.38 *(.87)*	**6.88** ***(.99)**$	7.41 *(.64)*	7.33 *(.87)*	**7.38** ***(.74)**$
IQ total	111.20 *(19.13)*	113.10 *(10.45)*	**112.15** ***(15.03)**$	99.73 *(15.89)*	109.92 *(11.89)*	**105.25** ***(14.51)**$	112.77 *(13.20)*	116.78 *(11.64)*	**114.41** ***(12.46)**$
Total Positive Emotion Attributions	2.00 *(1.89)*	1.3 *(1.57)*	**1.65** ***(1.73)**$	.73 *(1.00)*	.46 *(1.13)*	**.58** ***(1.10)**$	.46 *(.66)*	.75 *(1.04)*	**.57** ***(.81)**$

*Descriptives based on data set with imputed data

Table 6. *Means (Standard Deviations) for Children's Emotion Complexity Scores by Age Group.*

Moral Stories	Age Group		
	6- to 7 ¼-year-olds (n=20)	7 ¼ - to 9-year-olds (n=24)	9- to 10-year-olds (n=22)
Stealing	1.60 *(.67)*	1.88 *(.68)*	1.54 *(.78)*
Swing Push	1.96 *(.49)*	1.87 *(.60)*	1.73 *(.39)*
Gender Exclusion	1.70 *(.70)*	1.84 *(.71)*	1.25 *(1.13)*
Disability Exclusion	1.82 *(.60)*	1.98 *(.60)*	1.82 *(.64)*
Chalkboard	1.44 *(.86)*	1.87 *(.91)*	1.31 *(.99)*
Talking in Class	1.64 *(.79)*	1.74 *(.68)*	1.71 *(.88)*

Descriptives based on data set with imputed data

Table 7. *Means (Standard Deviations) for Children's Domain Coordination Scores by Age Group*

Moral Stories	6- to 7 ¼-year-olds (n=20)	7 ¼ - to 9-year-olds (n=24)	9- to 10-year-olds (n=22)
Stealing	1.40 *(.60)*	1.39 *(.66)*	1.16 *(.56)*
Swing Push	1.05 *(.60)*	1.42 *(.65)*	1.60 *(.49)*
Gender Exclusion	1.03 *(.41)*	1.04 *(.46)*	.98 *(.44)*
Disability Exclusion	1.05 *(.39)*	.96 *(.37)*	1.00 *(.44)*
Chalkboard	.52 *(.75)*	.58 *(.88)*	1.17 *(.86)*
Talking in Class	.79 *(.69)*	1.09 *(.79)*	1.23 *(.69)*

Descriptives based on data set with imputed data

Table 8. *Means (Standard Deviations) for Children's Justification Scores by Age Group*

	Age Group		
Moral Stories	6- to 7 ¼-year-olds (n=20)	7 ¼ - to 9-year-olds (n=24)	9- to 10-year-olds (n=22)
Stealing	3.65(.93)	3.91(.83)	4.27(.70)
Swing Push	3.65(1.18)	4.08 (1.17)	4.60(.85)
Gender Exclusion	3.73(.96)	3.75(.90)	3.54(1.01)
Disability Exclusion	4.03(.94)	3.98(1.05)	4.22(.98)
Chalkboard	2.25(1.05)	2.46(1.06)	2.94(1.18)
Talking in Class	3.04(1.08)	3.63(.96)	3.82(1.00)

Descriptives based on data set with imputed data

Zero-Order Correlations

Correlations among the study variables were analyzed and are displayed in Table 9. Notably, significant positive correlations were found between the total IQ, perspective taking, and mixed emotion variables. A negative correlation between children's emotion complexity score for the stealing story and externalizing behaviour was also observed, as was a negative correlation between children's domain coordination score for the swing push story and externalizing behaviour. Additional correlations among emotion complexity and domain coordination scores were observed across the different stories, and are represented in Table 9.

Correlations between children's ratings of the seriousness of an event and how intensely they would feel their reported emotion attributions was also examined across the six stories. It was found that children's ratings of the degree of seriousness of an event and the intensity of emotion was significantly correlated in three of the six stories (talking story, chalkboard story, and swing push story) at the $p<.05$ level.

Table 9. *Correlations among study variables.*

Variables	1	2	3	4	5	6	7	8	9	10
1. Total IQ	-									
2. Perspective Taking	.323**	-								
3. Mixed Emotion	.345**	.563**	-							
4. Externalizing Behaviour	.035	.036	-.099	-						
5. Domain Coordination (DC) (Stealing)	-.043	.122	.001	-.024	-					
6. DC (Swing Push)	.05	.043	.195	-.280*	.144	-				
7. Domain Coordination (Gender Exclusion)	-.005	.073	-.068	.077	.081	.072	-			
8.DC (Disability Exclusion)	-.029	.077	.168	-.146	.092	-.108	-.301*	-		
9. DC (Chalkboard)	.027	.003	.035	-.178	.030	.122	.062	.000	-	
10. DC (Talking in Class)	.177	.135	.168	-.118	.036	.233	-.103	.161	-.008	-
11. Emotion Attribution Complexity (EAC) (Stealing)	.178	.184	.227	-.318*	-.021	.255*	-.019	.255*	-.148	.337**
12. EAC (Swing Push)	-.006	.134	-.063	.070	.083	.103	.128	.057	.008	.080
13.EAC (Gender Exclusion)	.063	.242	.067	.120	.250*	.125	.172	.051	-.154	.071
14. EAC (Disability Exclusion)	-.025	.035	-.145	.113	-.003	.166	.062	.194	-.040	.090
15. EAC (Chalkboard)	-.092	.204	.147	-.087	.151	.212	.112	-.051	.008	-.037
16. EAC (Talking in class	.096	.168	.178	-.243	-.125	.315*	-.161	.099	.124	.358**
17. Moral Justifications (MJ) (Stealing)	.136	.168	.111	-.101	.237	.412**	.169	-.055	-.012	.301*
18. MJ (Swing Push)	.047	.072	.217	-.077	.163	.351*	-.139	-.068	.053	.161
19. MJ (Gender Exclusion)	.113	.163	.009	.045	-.028	.101	.253*	.128	.056	.226
20. MJ (Disability Exclusion)	.169	.151	.045	-.051	.019	.265*	-.114	.280*	.328**	.209
21. MJ (Chalkboard)	.000	.090	-.006	-.134	.132	.107	-.006	-.071	.714**	-.014
22. MJ (Talking in Class)	.220	.141	.196	-.136	-.058	.221	-.069	.225	.032	.621**

* Correlation is significant at the 0.05 level(2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Table 9. *Continued*

Variables	11	12	13	14	15	16	17	18	19	20	21	22
11. Emotion Attribution Complexity (EAC) (Stealing)	-											
12. EAC (Swing Push)	.370**	-										
13.EAC (Gender Exclusion)	.355**	.669**	-									
14. EAC (Disability Exclusion)	.305*	.577**	.423**	-								
15. EAC (Chalkboard)	.331**	.533**	.560*	.431**	-							
16. EAC (Talking in class	.450**	.331**	.217*	.415**	.486**	-						
17. Moral Justifications (MJ) (Stealing)	.142	.065	.216	.064	.312*	.187	-					
18. MJ (Swing Push)	-.014	.008	-.045	.197	.173	.161	.253*	-				
19. MJ (Gender Exclusion)	.254*	.118	.120	.240	.102	.110	.166	.028	-			
20. MJ (Disability Exclusion)	.308*	.014	.209	.300*	.218	.314*	.090	.014	.393**	-		
21. MJ (Chalkboard)	-.190	-.074	-.205	-.147	-.085	.062	.065	.038	.007	.228	-	
22. MJ (Talking in Class)	.284*	.127	.198	.146	.053	.258*	.249*	.157	.153	.200	.108	-

* Correlation is significant at the 0.05 level(2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

Hypotheses 1: Associations Among Emotion Attributions, Justifications, and Perspective Taking

Hypothesis 1a): Higher emotion complexity scores will predict higher domain coordination scores as measured by children's capacity to recognize both moral and social components of mixed domain transgressions. I used hierarchical regression to determine the role of predictors (emotion complexity score, age, IQ) on the domain coordination score for each of the six stories. Age in months and IQ were entered at step one of the model as control variables. The emotion complexity variable was added at stage two. The results were analyzed by individual story type due to the lack of consistent support for combining the stories into moral and mixed categories. Preliminary analyses showed low correlations between domain coordination scores across the proposed story categories (i.e., mixed and moral). Thus, the results are discussed below by story type.

Chalkboard story. Tests indicated that the data met the assumption of collinearity (emotion complexity, Tolerance = .975; Age, Tolerance = .958; IQ Tolerance = .975). The data met the assumption of independent errors (Durbin-Watson value = 1.90). The regression model revealed that, in step 1, age and IQ contributed significantly to the model, $F(2,63) = 3.19$, $p = .048$, and accounted for 9.2% of the variation in domain coordination scores for the chalkboard story. After entry of emotion complexity scores at step 2, the total variance explained by the model was 10.0%, $F(3, 62) = 2.30$, $p > .05$ (see Table 10). Thus, the hypothesis that emotion complexity scores would predict DC scores above and beyond age and IQ was not supported for the chalkboard story.

Table 10. *Summary of Hierarchical Regression Analysis for Variables Predicting Domain Coordination Scores for the Chalkboard Story (N =66)*

	Model 1			Model 2		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Constant[a]	.072	.837		-.122	.878	
Age	.329	.131	.303*	.330	.131	.304*
IQ	.001	.007	.003	.001	.007	.012
Emotion Complexity				.083	.111	.091
R^2		.092			.100	
F for change in R^2		3.190*			.568	

*p < .05. **p< .01.
[a]Constant values are reported so readers can construct the full regression model if needed.

Disability exclusion story. Tolerance values indicated that multicollinearity was not present (emotion complexity, Tolerance = .997; age, Tolerance = .975; IQ, Tolerance = .972). Data met the assumption of independent errors (Durbin-Watson value = 1.87). The regression revealed that children's domain coordination scores for the disability exclusion story were not predicted by their emotion complexity scores when controlling for age and IQ, $F(3, 62) = .831$, $p =.482$ (See Table 11).

Table 11. *Summary of Hierarchical Regression Analysis for Variables Predicting Domain Coordination Scores for the Disability Exclusion Story (N =66)*

	Model 1			Model 2		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Constant	1.12	.395		.877	.422	
Age	-.021	.062	-.043	-.021	.061	-.043
IQ	-.001	.003	-.025	-.001	.003	-.020
Emotion Complexity				.122	.080	.190
R^2		.003			.039	
F for change in R^2		.084			2.32	

*p < .05. **p< .01.

Gender exclusion story. Tests to determine whether the data met the assumption of collinearity indicated that multicollinearity was not a concern (emotion complexity, Tolerance = .993; age, Tolerance = .975; IQ, Tolerance = .975). The data met the assumption of independent errors (Durbin-Watson value = 1.77). The regression revealed that, at step 1, age and IQ did not contribute significantly to the model, $F(2,63) = .066$, $p = .936$, and accounted for 0.2% of the variance. At step 2, when emotion complexity was entered in the model, the model accounted for 2.8% of variance (See Table 12). Overall, the hypothesis that emotion complexity scores would predict DC scores above and beyond age and sex was not supported.

Table 12. *Summary of Hierarchical Regression Analysis for Variables Predicting Domain Coordination Scores for the Gender Exclusion Story (N =66)*

	Model 1			Model 2		
Variable	*B*	*SE B*	*B*	*B*	*SE B*	*β*
Constant[a]	1.13	.436		.994	.447	
Age	-.021	.068	-.039	-.014	.068	-.026
IQ	-.001	.004	-.021	-.001	.004	-.032
Emotion Complexity				.095	.074	.162
R^2		.002			.028	
F for change in R^2		.066			1.66	

*$p < .05$. **$p < .01$.

Stealing story. Tolerance values indicated that multicollinearity was not present (emotion complexity, Tolerance = .965; age, Tolerance = .962; IQ, Tolerance = .962). Data met the assumption of independent errors (Durbin-Watson value = 1.99). The regression revealed that children's domain coordination scores for the stealing story were not predicted by their emotion complexity scores when controlling for age and IQ, $F(3, 62) = .596$, $p =.620$ (See Table 13).

Table 13. *Summary of Hierarchical Regression Analysis for Variables Predicting Domain Coordination Scores for the Stealing Story (N =66)*

Variable	Model 1			Model 2		
	B	$SE\ B$	B	B	$SE\ B$	B
Constant[a]	1.71	.600		1.72	.611	
Age	-.121	.094	-.161	-.122	.095	-.162
IQ	-.001	.005	-.032	-.001	.005	-.028
Emotion Complexity				-.018	.107	-.022
R^2		.028			.028	
F for change in R^2		.893			.029	

*$p < .05$. **$p < .01$.

Swing push story. Tests indicated that the data met the assumption of collinearity (emotion complexity, Tolerance = .1.02; age Tolerance = .975; IQ Tolerance = .987). The data met the assumption of independent errors (Durbin-Watson value = 1.91). The model revealed that at step 1, age and IQ contributed significantly to the regression model, $F(2,63) = 4.53$, $p = .014$, and accounted for 12.6% of the variance. Introducing the emotion complexity variable explained an additional 2.3% of variance, and this was not found to be significant change in R^2 ($p = .196$). In the final model, the most important predictor of domain coordination was found to be age, with older children showing higher DC scores (See Table 14). The hypothesis that emotion complexity scores would predict DC scores above and beyond age and IQ was not supported.

Table 14. *Summary of Hierarchical Regression Analysis for Variables Predicting Domain Coordination Scores for the Swing Push Story (N =66)*

Variable	Model 1			Model 2		
	B	$SE\ B$	B	B	$SE\ B$	β
Constant[a]	.688	.586		.385	.627	
Age	.273	.091	.352 **	.290	.092	.374**
IQ	.001	.005	.026	.001	.005	.026
Emotion Complexity				.146	.112	.155
R^2		.126			.149	

F for change in R^2		4.53*		1.71

*p < .05. **p < .01.

Talking story. Tests indicated that the data met the assumption of collinearity (emotion complexity, Tolerance = .990; Age, Tolerance = .994; IQ Tolerance = .986). The data met the assumption of independent errors (Durbin-Watson value = 2.28). The hierarchical regression model indicated that at step 1, age and IQ did not contribute significantly to the model, $F(2, 63)$ =2.79, *p* >.05. After entry of the emotion complexity variable, the model was found to explain a significant amount of variability in domain coordination scores, $F(3,62) = 4.99$, *p* =.004, R^2 = .194. The change in explained variance from step 1 to step 2 of the model was found to be significant (R^2_{change} = .113, *p* = .004), indicating that children's emotion complexity scores explained a significant amount of variance in domain coordination scores when controlling for age and IQ (See Table 15). Analyses indicated that higher EC scores predicted higher DC scores (β = .338, *p* = .004), thus, the hypothesis that emotion complexity scores would predict DC scores above and beyond age and IQ was supported for the talking story.

Table 15. *Summary of Hierarchical Regression Analysis for Variables Predicting Domain Coordination Scores for the Talking Story (N =66)*

	Model 1			Model 2		
Variable	*B*	*SE B*	*B*	*B*	*SE B*	*β*
Constant[a]	-.278	.707		-.592	.676	
Age	.205	.110	.224	.196	.104	.215
IQ	.008	.006	.161	.007	.006	.129
Emotion Complexity				.300	.102	.338**
R^2		.081			.194	
F for change in R^2		2.79			8.70**	

*p < .05. **p < .01.

Hypothesis 1b): In line with previous research, children' seriousness ratings (i.e., "how bad was the act"), based on a Likert scale of 0-3, were expected to be higher for moral stories in comparison to the mixed domain stories. A within-subjects analysis of variance was conducted to assess the impact of story type (talking, chalkboard, swing push, stealing, disability exclusion, gender exclusion) on participants' seriousness ratings. The repeated measures ANOVA indicated a main effect of story type, $F(5,325) = 17.70$, $p < .001$, multivariate partial eta squared $= .629$. Post hoc tests using the Bonferroni correction revealed that the two strictly moral stories (swing push and stealing) were rated as significantly more serious in comparison to the four mixed domain stories.

Hypothesis 1c) Emotion complexity and moral justification scores will predict ratings of seriousness, with higher scores associated with higher ratings of seriousness. First, regression analyses were conducted to examine the relation between moral justification, emotion complexity scores and seriousness ratings for each story. Preliminary analyses indicated that there were significant negative correlations between children's ratings of seriousness on the talking and chalkboard stories, and their IQ scores, $r = -.416$, $p = .001$; $r = -.245$, $p = .048$, respectively. A significant negative correlation was also found between age and seriousness ratings for the talking story, $r = -.248$, $p = .044$. Further, small albeit nonsignificant correlations ($r > .10$) were revealed for the other stories. Thus, IQ and age were included as control variables in all analyses. To assess whether children's moral justification and emotion complexity scores predicted their ratings of seriousness, a hierarchical regression analysis was conducted for each story. In step 1 of the model, age and IQ were entered as control variables. In step 2, the moral justification and emotion complexity score were added as predictor variables. Overall, it was found that age, IQ, moral justification scores, and emotion complexity scores explained a

significant amount of the variance in seriousness ratings for the talking story, F (4,61) = 6.48, p < .001, R^2 = .298. Moral justification scores were not found to significantly predict seriousness ratings, β = .134, $t(64)$ = 1.615, p = .256, however, age, IQ, and emotion complexity scores did significantly predict seriousness ratings (See Table 16). As age and IQ increased, seriousness ratings decreased, and as emotion complexity scores increased, seriousness ratings increased. Apart from the talking story, no other regression models were found to be significant. However, analysis of the disability exclusion story approached significance, such that as emotion complexity scores increased, so did seriousness ratings, β = .267, $t(64)$ = 2. 12, p = .039.

Table 16. *Summary of Hierarchical Regression Analysis for Variables Predicting for Ratings of Seriousness for the Talking Story (N =66)*

	Model 1			Model 2		
Variable	*B*	*SE B*	*B*	*B*	*SE B*	*B*
Constant[a]	5.65	.964		5.31	.936	
Age	-.012	.006	-.208	-.014	.006	-.238*
IQ	-.025	.007	-.395**	-.028	.007	-.443**
Emotion Complexity				.255	.125	.228*
Justifications				.118	.103	.134
R^2		.216			.298	
F for change in R^2		8.68**			3.578*	

*p < .05. **p < .01.

A second set of exploratory analyses were run to analyze associations between the predictor variables and seriousness ratings where the seriousness scores were summed within the three following categories: exclusion stories, mixed domain stories, and moral domain stories. The rationale for combining the data in this way was that serious ratings were found to be highest for the two moral stories and lowest for the chalkboard and talking stories. Thus, it was assumed that children were responding similarly on this measure within these three categories. Three separate hierarchical regression analyses were conducted with age and IQ added in the

first step and emotion complexity and justification scores added second. The latter two scores were also composite scores that combined scores from two stories depending on the category (e.g., summing the swing push justification scores and the stealing justification scores for the moral analysis). Bonferroni adjusted alpha levels ($\alpha = .017$) were used to test the hypotheses across the three categories (e.g., mixed, moral and exclusion stories). Based on these analyses, emotion complexity and moral justification scores did not significantly predict seriousness ratings across the three categories of stories.

Hypothesis 1d): There will be positive associations among perspective taking and domain coordination as well as perspective taking and emotion attributions. To test the hypothesis that perspective taking skills will predict domain coordination scores, I used hierarchical regression to determine the influence of predictors (perspective taking, age, IQ) on the domain coordination scores for each story. Age in months and IQ were entered at step 1 of the model as control variables. Perspective taking was added at step 2. Findings revealed no significant differences for any of the six stories above and beyond the effects of age and IQ.

To test the hypothesis that perspective taking and children's emotion attributions are positively associated, I used regression analysis to determine the influence of perspective taking on the total number of positive emotion attributions (including the initial and follow-up emotion attribution) summed across all 6 stories. The findings indicated that perspective taking did not significantly add to the model above and beyond age and IQ, $F(3, 62) = 1.60$, $p = .199$, $R^2 = .072$ (see Table 17). The results revealed that children with lower perspective taking scores did not provide significantly more positive emotion attributions.

Table 17. *Summary of Hierarchical Regression Analysis for Variables Predicting for Total Positive Emotion Attributions (N =66)*

Variable	Model 1			Model 2		
	B	*SE B*	*B*	*B*	*SE B*	*B*

Constant[a]	3.15	1.49		3.15	1.53	
Age	-.022	.010	-.266	-.022	..010	-.268
IQ	-.001	.011	-.012	-.001	.012	-.013
Perspective Taking				.04	.109	.004
R^2		.072			.072	
F for change in R^2		2.43			.001	

*$p < .05$. **$p < .01$.

Analyses were also conducted to examine relations between perspective taking and children's emotion complexity scores. First, a hierarchical regression was completed with age (months) and IQ entered at step 1 of the model and perspective taking entered at step 2. In this model, the dependent variable was the total of children's emotion complexity scores (summed across all stories). The rationale for looking at the total of scores rather than individual scores was to obtain a general picture of whether increased perspective taking skills were associated with more mature emotional understanding, regardless of transgression type. Perspective taking scores were not found to significantly predict total emotion complexity scores, $F(2,63) = 2.73$, $p = .073$ above and beyond the effects of age and IQ.

Hypotheses 2: Age-related Differences in Emotion Attributions and Moral Judgements

Hypothesis 2a) Younger children will be more likely than older children to attribute positive emotions to transgressors. An analysis of variance showed that age significantly predicted positive emotion attributions, $F(2,63) = 4.08$, $p = .021$, $\eta^2 = .097$. Tukey's post-hoc tests revealed that, when combining children's initial and follow-up emotion attributions, the youngest age group provided a greater number of positive emotions across all six stories in comparison to the middle age group. However, there was not a significant difference between the oldest and youngest age group. One explanation for the latter null finding is that it might be due to an outlier in the oldest age group. Indeed, this outlier was flagged as exceeding cut-off criteria (Z score > 3.29). The analysis was run again with the outlier removed. Once removed, the effect

of age was significant, $F(2,63) = 5.12$, $p = .008$, $\eta^2 = .143$, and a significant difference was found between the youngest and oldest age groups, with older children providing significantly fewer positive emotion attributions in comparison to younger children. Thus, once the outlier was removed, the results were consistent with the expectation that younger children attribute more positive emotions to transgressors.

Hypothesis 2b): Younger children will focus more on the conventional aspects of a mixed domain transgression, whereas older children will focus on both the conventional and moral aspects in their reasoning. A hierarchical multiple regression revealed that age was predictive of children's total domain coordination scores (summed across the six stories) over and above the effects of IQ, $F(3,62) = 4.22$, $p = .019$ and the entire model accounted for 11.8% of the variance in domain coordination scores (see Table 18). In order to assess age differences across the different types of stories, a Mixed Factorial ANOVA (age (3) X sex (2) x story type (6)) was run, which indicated a main effect of story type, $F(4.00, 300) = 8.78$, $p < .001$, $\eta^2 = .128$, for domain coordination scores. Mauchly's Test indicated that the assumption of sphericity had been violated, $X^2(14) = 33.13$, $p = .003$, thus the Greenhouse-Geisser correction was used ($\epsilon = .80$). There was a significant interaction between the type of story and the age of the participant, $F(8.00, 300) = 2.55$, $p = .011$, $\eta^2 = .078$, indicating that the effect of story type differed across the three age groups. A closer examination of the nature of this interaction using post-hoc main effects analyses revealed that mean domain coordination (DC) scores were significantly higher for older children ($M = 1.60$) in comparison to the youngest age group ($M = 1.05$) for the swing push story ($p = .006$). Older children's mean DC scores were also significantly higher for the chalkboard story ($M = 1.14$) compared to the 7 ¼ to 9-year-old age group ($M = .558$, $p = .032$, respectively). For the talking story, the difference between older

children and younger children approached significance ($p = .056$). For the gender and disability exclusion stories, DC scores did not appear to differ. Finally, for the stealing story, there was a trend for younger children's mean DC scores to be higher ($M = 1.49$) than the mean scores for the oldest group ($M = 1.07$, $p = .058$).

Table 18. *Summary of Hierarchical Regression Analysis for Variables Predicting Total Domain Coordination Scores (N =66)*

	Model 1			Model 2		
Variable	*B*	*SE B*	*B*	*B*	*SE B*	*B*
Constant[a]	5.47	1.65		2.46	1.90	
IQ	.009	.015	.079	.005	.014	.044
Age				.036	.013	.336**
R^2		.006			.118	
F for change in R^2		.398			8.00**	

*$p < .05$. **$p < .01$.

Hypothesis 2c): Older children will demonstrate higher moral justifications scores in comparison to younger children. A Mixed analysis of variance (ANOVA) was conducted to examine the effects of age (3) X sex (2) X story type (6) on children's moral justifications. With regard to children's moral justification scores, there was a significant main effect of story type, $F(5, 300) = 25.68$, $p = <.001$, $\eta^2 = .300$ and age, $F(2,60) = 4.83$, $p = .011$, $\eta^2 = .139$. Contrasts revealed significantly higher justification scores for older children in comparison to the youngest age group ($p = .007$), with higher scores indicating a greater number of other-oriented and specific moral justifications. Comparisons of means also revealed differences in justifications across story type. Specifically, moral justification scores for the chalkboard story were found to be significantly lower compared to all other five stories, and justifications for the swing push and disability exclusion stories were significantly higher in comparison to all stories except for the stealing story. No significant differences in mean justifications were found between the gender exclusion story and the talking and stealing stories.

Given that significant correlations were found between children's justification scores for the two moral stories and the two exclusion stories, and given that there was a small correlation between the talking and chalkboard study, further exploratory analyses were conducted. Specifically, age differences in children's justifications were examined in more depth across moral stories (stealing and swing push), mixed domain stories (talking and chalkboard) and exclusion stories (gender and disability exclusion). Data was submitted to between-groups ANOVAs with Age group (3) as the between-subjects factor. A Bonferroni correction of $\alpha/3 =$ .017 was used to prevent Type I error. The results revealed that mean justification scores for the oldest and youngest age groups differed significantly for the moral stories, $F(2,63) = 6.10$, $p =$ .004, $\eta^2 = .162$, and the mixed stories, $F(2,63) = 4.78$, $p = .012$, $\eta^2 = .131$, with older children displaying higher justification scores. No significant differences were found between age groups for the exclusion stories, $F(2,63) = .003$, $p = .997$.

Exploratory analyses.

Exploratory analyses were conducted to examine children's evaluations of events across the different story types. A second aim was to investigate whether age differences in children's evaluations of transgressions.

Evaluation of act. The proportion of responses indicating whether an act was okay or not okay were evaluated across stories and age groups. There were no significant age differences with regard to evaluations of whether an act was right or wrong. 100% of children identified the Swing Push and Disability transgressions as wrong. 96% of children said the stealing transgression was not okay, 94% of total participants reported that the Gender and Talking story transgressions were not okay, and 86% of children reported that the Chalkboard transgression was not right.

Evaluation of acceptability to allow an act. In terms of judgments about whether it is acceptable to permit an act, the data revealed that the majority of children did not think any of the acts should be permitted. Specifically, 98% of children reported that girls/boys should not be permitted to exclude the opposite sex, 97% said it was not okay to allow pushing at school, 90% of children would not permit excluding someone with a disability, and 89% of children would not allow talking in class without raising hands. However, only 65% of children said that they would not allow writing on the chalkboard, however, Chi-square analysis did not show any significant differences in responses based on participants' age, $X^2 = .656$, $p = .957$.

Acceptability of act if allowed. In terms of the evaluation of whether an act is okay if it is allowed by a teacher, the results showed variations in answers depending on the type of act. For example, for the mixed domain stories, 75% of children said using the teacher's chalk would be okay, 69% of children said that talking without raising your hand would be acceptable, 37% of children reported that excluding based on disability status is acceptable, and 31% indicated that excluding based on sex is acceptable. With regards to the moral stories, 20% of children said it would be okay to push a child off a swing if permitted, and 39% of children said stealing would be acceptable if allowed. With regards to differences among age groups, Chi-square analysis did not show any significant age differences across each story ($p < .05$). Further, a total score was calculated across all stories to examine whether younger children viewed a transgression as more acceptable if permitted. A one-way ANOVA did not reveal any significant age differences, $F(2,63) = .568$, $p > .05$.

Evaluation of why an act is/is not okay if allowed. Analysis of variance (ANOVA) was used to examine age differences in children's explanations for why an act was or was not okay if it was allowed. The results revealed that, for the stealing story, older children's explanations

were more likely to refer to moral or victim-focused reasons for why the transgression is still not okay if allowed, $F(2, 63) = 3.20$, $p = .048$, $\eta^2 = .092$. Likewise, this finding suggests that children in the youngest age group were more likely to answer "yes" to the question of whether an event was okay, and provided rule-based explanations. No significant findings emerged for the remaining five stories ($p > .05$).

Hypotheses 3: Associations Among Moral Behaviour, Emotion Attributions and Domain Coordination

   Hypothesis 3a): Children who attribute more positive initial and follow-up emotions to victimizers will have more externalizing problems as measured by parent ratings on the Child Behaviour Checklist (CBCL). After controlling for age and IQ in step 1 of the regression model, the total number of positive emotions across all six stories was not found to significantly predict externalizing behaviours, $F(3,60) = 2.01$, $p > .05$, $R^2 = .091$. Given that age and IQ scores were not found to be significantly correlated with externalizing behaviour in the sample (correlation coefficients $\leqq .05$), and explained only 0.4% of the variability in externalizing behaviours, a model was run without these variables added in the regression model. When excluding age and IQ variables, the hypothesis was supported and the data revealed that positive emotion attributions predicted externalizing behaviours, $F(1,62) = 6.06$, $p = .017$ $R^2 = .089$ (see Table 19). Additional exploratory analyses (Bonferroni $\alpha = .017$) revealed a similar trend of positive initial and follow-up emotions predicting externalizing behaviour for the chalkboard and talking story (combined), $F(1,61) = 4.30$, $p = .042$, $R^2 = .051$ (see Table 20). However, a trend was not found when analyzing combined positive emotion attributions for the exclusion stories, $F(1,62) = 1.87$, $p = .176$, $R^2 = .029$ and the two moral stories, $F(1,62) = 2.80$, $p = .099$, $R^2 = .043$. Because variance in positive emotion was low for the swing push story in comparison to the

stealing story (i.e., the majority of children provided negative emotion attributions), an additional analysis explored whether positive emotion attributions on the stealing story would predict externalizing behaviour. This prediction was supported by the data, $F(1,60) = 7.06$, $p = .010$, $R^2 = .105$.

Table 19. *Summary of Hierarchical Regression Analysis for Externalizing Behaviours A (N =64)*

	Model 1		
Variable	*B*	*SE B*	*B*
Constant[a]	48.42	1.47	
Total Number of Positive Emotions (combined)	2.13	.865	.298*
R^2		.089	
F for change in R^2		6.06*	

*$p < .05$. **$p < .01$.

Table 20. *Summary of Hierarchical Regression Analysis for Externalizing Behaviours B (N =64)*

	Model 1		
Variable	*B*	*SE B*	*B*
Constant[a]	48.94	1.41	
Total Number of Positive Emotions (Chalkboard and Talking)	3.822	1.84	.257
R^2		.066	
F for change in R^2		4.30	

*$p < .05$. **$p < .01$.

Hypothesis 3b): Domain Coordination scores will predict externalizing behaviours.

To test the hypothesis that domain coordination scores would predict externalizing behaviour, regression analyses were conducted for each story, with DC being regressed on externalizing behaviours. IQ and age were not included in the model as they were not found to predict variability in externalizing behaviours ($r^2 = .004$). Only one story was found to show significant results. Specifically, children's domain coordination scores for the swing push story

were found to significantly predict externalizing behaviours, $F(1,62) = 5.02$, $p = .029$, $R^2 = .075$, with higher domain coordination scores corresponding with lower externalizing behaviours (see Table 21).

Table 21. *Summary of Hierarchical Regression Analysis for Externalizing Behaviours C (N =64)*

	Model 1		
Variable	*B*	*SE B*	*β*
Constant[a]	55.65	2.86	
Domain Coordination Scores (Swing Push)	-4.38	1.922	-.280*
R^2		0.78	
F for change in R^2		5.18*	

*p< .05. **p<.01*

Discussion

The current study examined the relations between children's emotion attributions, perspective taking skills, externalizing behaviour, and their moral and social justifications when presented with mixed domain and moral transgressions. A specific aim of the study was to investigate whether emotion attributions play a role in facilitating children's understanding of both the conventional and moral aspects of transgressions. A second aim was to explore whether children's emotion attributions and justifications predict externalizing behaviours. A third aim was to examine whether children with advanced perspective taking skills demonstrate a more sophisticated understanding of why an act was wrong and how a victimizer might feel. Finally, age-related differences were examined for each of the variables in order to evaluate developmental patterns. The focus of this section is to summarize the main findings, and to interpret them in the context of the pattern of findings in the current study and in previous studies.

Summary of Findings

Overall, the findings provide mixed support for the different hypotheses. The results revealed that the oldest age group had higher justification scores in comparison to the youngest age group. Given that higher scores reflect other-oriented and specific moral explanations, and lower scores reflect explanations based on rules, punishment, or vague moral explanations, the finding suggests that older children were more likely to provide specific moral or other-oriented explanations of why an event was wrong. Age differences in children's ability to recognize both the moral and social aspects of a mixed transgression (i.e., domain coordination scores) were also found. Specifically, older children showed greater ability to recognize both moral and social justifications for one of the mixed domain stories, and a trend-level effect was found for the talking story. Emotion complexity was not associated with domain coordination scores, except

for the talking story. In terms of externalizing behaviour, children who provided more overall positive emotion attributions in comparison to negative emotion attributions were rated as having lower externalizing behaviour. Finally, in the context of the swing push story, the ability to provide both moral and social justifications for why an act was wrong predicted lower ratings of externalizing behaviour. Data from the talking story revealed that emotion attribution responses were found to predict children's ability to understand both the conventional and moral aspects of an event. Perspective taking scores did not predict children's domain coordination scores or emotion attributions.

Hypotheses 1: Associations between emotion attributions, justifications, and perspective taking

The first hypothesis predicted that there should be a relation between children's emotion attributions (ascribed to the self as the victimizer) and their justifications for why an event was wrong. Specifically, it was predicted that children who are better able to recognize that victimizers may feel mixed negative emotions (i.e., higher "emotion complexity" scores) as opposed to only positive emotions, would demonstrate an increased capacity to provide both moral and social explanations (i.e., higher "domain coordination" scores) of why an event was wrong. After controlling for age and IQ, emotion complexity scores were found to predict domain coordination scores in relation to the talking story. However, no other significant findings were revealed for the remaining five stories.

Within the framework of social domain theory, moral and social-conventional knowledge are distinct domains of understanding (Turiel, 1983). Research in this area suggests that children learn to coordinate their moral and social-conventional reasoning when responding to situations that are not purely moral or conventional, but rather a mixture of both (Helwig, 1995). The

assumption that children's ability to identify negative and mixed negative emotional states is linked to their ability to coordinate justifications across moral and social domains, was supported for one of the mixed domain stories (i.e., the talking story). This finding suggests that children who provided only positive emotion attributions, or a mixture of positive and negative emotion, were less likely to provide both moral and social-conventional justification. Although the data supported the hypothesis for the talking story, this was not the case for the other mixed domain stories – the chalkboard story and exclusion stories. I will first discuss the results for the talking story. Next, I will elaborate on the inconsistent results, and provide explanations as to why this finding was not observed for the chalkboard story.

The positive association between children's domain coordination and emotion complexity scores for the talking story supports the view that emotion plays a role in children's understanding of moral and social components of a transgression. Historically, research in the area of social domain theory has focused on distinctions between the moral and social domains (Smetana, 1983), however, research has also begun to examine how children coordinate their knowledge across the domains (Smetana 2006; 2013). There is evidence to suggest that, with increasing age, individuals develop a greater capacity to reason about both moral and social-conventional aspects of a mixed domain transgressions, and prioritize their judgements (Crane & Tisak, 1995; Helwig, 1995; Killen & Stangor, 2001; Smetana, Killen, & Turiel, 1991; Turiel, 1983). However, the underlying processes that support children's ability to balance both social and moral justifications have not been thoroughly studied. The current finding provides evidence to suggest that increased emotion understanding may contribute to children's domain coordination. Specifically, children who attributed one or more positively valenced emotions to the victimizer had more difficulty coordinating across the different domains compared to

children who attributed negative emotions. Having the ability to coordinate judgement across multiple domains within the context of multifaceted or complex social situations requires a greater sophistication in thought and allows for a more complete understanding of a situation. In contrast, children who have more difficulty coordinating across the different domains may be thought of as fixated on one particular line of reasoning. This explanation is congruent with developmental findings indicating that domain coordination may increase with age (Turiel, 1983), suggesting that integration of domains of social reasoning is representative of more advanced thinking. Although there are likely underlying factors that allow for this integration including cognitive flexibility and experience, emotion attribution may play a role, at least for certain mixed domain scenarios. It is possible that understanding that an event was wrong for moral and social reasons (e.g., unfair and prohibited) may correspond with more negatively valenced emotional reaction, as the child is aware of multiple violations. Although no studies have looked at this specific relation, previous connections have been made between moral reasoning and emotion attributions. For example, Malti, Eisenberg, and Buchmann (2009) found that kindergartners' moral/altruistic evaluations were positively associated with negative emotions. In line with this finding, Malti, Gasser and Gutzwiller-Helfenfinger (2010) revealed negative associations between 7- and 9-year-old children's positive emotion attributions and moral reasoning (with higher scores indicating moral or altruistic reasons and lower scores indicating hedonistic reasons). Further, positive associations were found between moral reasoning and attributions of sadness in the 9-year-old group. Thus, the connection between emotion attributions and moral justification is consistent with prior studies, however, unlike past research, the current finding differs in that it demonstrates a link between negative emotion and

an ability to balance both moral and social justifications in the context of a mixed-domain transgression.

In contrast to the hypothesis, results from the remaining mixed domain stories (i.e., chalkboard, disability exclusion, and gender exclusion) revealed that children's emotion attributions were not predictive of their domain coordination scores. With regard to the exclusion stories, one explanation for this finding is that children viewed the transgressions as purely moral. In fact, for the gender exclusion story, only 13% of responses referred to both moral and social themes, and for the disability story, only 7% of children provided social and moral explanations in their answers. This finding suggests that the majority of children viewed the exclusion events as wrong for reasons related to moral factors (e.g., unfair) or the victim's welfare. This is in contrast with the talking story, where 30% of children's responses made reference to both social and moral explanations. The finding that children view simple exclusion scenarios as primarily moral is consistent with a study by Gasser, Malti, and Buholzer (2014), which found that Swiss children ages 6-, 9-, and 12-years-old provided mostly moral explanations when evaluating straightforward exclusion scenarios. In these scenarios, children were asked whether it is right or wrong to exclude children with disabilities from a group and why. The researchers also examined a more complex version of the story where children were asked to select either a disabled or non-disabled person to join one of three types of groups (academic, athletic, social) and then provide a rationale for their choice. In the more complex version, children's responses were found to include a greater degree of social-conventional explanations that were related to considerations of group functioning. Although the exclusion stories in the current study did include varying contexts (athletic versus social settings; disability status versus gender exclusion), the follow-up methods were more similar to the straightforward

exclusionary stories used in Gasser et al.'s study. Overall, it is possible that the moral component was too strong in the exclusion stories used in the current study, and thus, the methods were not sensitive enough to tap into more differentiated responses.

Lack of variability in domain coordination scores may account for null findings for the exclusion stories, however, it does not account for the null findings for the chalkboard story. In contrast to the exclusion stories, 32% of children's moral justifications included both moral and social-conventional justifications, indicating adequate variability. Instead, it is possible that the nature of the stories elicited different types of judgments. Indeed, although the findings revealed a significant proportion of responses included moral and social judgements, the story also appeared to elicit a greater number of only social explanations in comparison to the talking story. Specifically, 24% of justifications in response to the talking story were categorized as "social only", whereas 51% of justifications in response to the chalkboard story were "social only". Because children received a "0" score for social justifications, a score of "1" for moral justifications, and a score of "2" for providing both social and moral justifications, children's domain coordination scores were lower for the chalkboard story. Although this in itself does not negate a relation between emotion attributions and domain coordination, in combination with the emotion attribution scores, which, despite fewer moral explanations, were more negative than expected, it resulted in a lack of relation between the two variables. Overall, children's responses to this story were more likely to focus on rule-based explanations in comparison to the talking story, and both stories evoked negative emotion attributions as prescribed to the transgressors.

The third explanation refers to how emotion complexity was coded. In the present study, mixed negative and unidimensional negative emotion attributions were scored higher than mixed positive and negative emotion attributions. The rationale for this was that positive emotion

attributions prescribed to victimizers was thought to reflect a lower level of emotional understanding and moral maturity. It could be argued, however, that complexity is higher for mixed positive and negative emotion attributions. This argument is consistent with the findings that the ability to label mixed emotions reflects a higher level of development (Kestenbaum & Gelman, 1995; Larsen & Fireman, 2007). To explore this possibility, follow-up exploratory analyses were conducted on re-coded emotion complexity data. In this coding scheme, both mixed negative emotions and mixed positive and negative emotion attributions were given a score of "2". Purely negative emotion attributions were given a score of "1" and purely positive emotion attributions were given a score of "0". As before, the coding scheme included both initial and follow-up emotion attributions. To test whether the revised emotion complexity data was associated with domain coordination scores, hierarchical regression analyses were run for each story, controlling for age and IQ. The findings did not differ from those using the initial coding scheme. Emotion complexity continued to significantly predict domain coordination scores for the talking story, and no significant associations were found for the other stories.

Taken together, the current study only provides partial support for the hypothesis that emotion attributions predict domain coordination scores. Discrepancies in the findings indicate that story type plays a significant role in differences among emotion attribution and domain coordination scores.

Part B. For the second hypothesis, I predicted that violations in the moral stories would be rated as more serious in comparison to mixed domain stories. As predicted, the results showed that the swing push and stealing stories were rated to be more serious offenses in comparison to the four mixed domain stories. This finding is consistent with social domain research indicating that moral transgressions are judged to be more wrong than conventional or personal rule

transgressions (Smetana, Schlagman, & Adams, 1993; Tisak, 1993; Tisak & Turiel, 1988). The finding that children distinguish between purely moral and mixed moral-conventional events supports the social domain view that moral and conventional domains of knowledge are separate. Although previous research has examined seriousness ratings in the context of mixed domain stories (Crane & Tisak, 1995), the current findings are unique in that they compare degree of seriousness ratings across moral and mixed domain stories. In line with Crane and Tisak (1995), the majority of children viewed the mixed domain transgressions as not okay and some degree of "bad". However, when compared to stories of physical harm and stealing, the acts were considered less "bad" on average. This finding is largely intuitive as moral transgressions of physical harm and stealing have more severe consequences for the victims and victimizers in comparison to moral transgressions of unfairness and use of others' property. However, it could be argued that exclusion on the basis of sex or disability status is equally damaging to the victim and potentially the victimizer. The current study found that the moral and exclusion scenarios were distinguishable with regard to participants' ratings of seriousness. It is possible that when rating the severity of the act, children were taking into account the social-conventional elements which led to lower ratings. For example, excluding a child with a physical disability from a soccer game can be viewed as a social transgression as the victim may be a poor athlete or unfamiliar with the game. Thus, although children still viewed the exclusion as wrong, the conventional aspects of the transgressions may have diminished their perceptions of seriousness. If this was the case, however, the justification scores for each story do not appear to support this line of reasoning. Indeed, children provided moral justifications more often than social-conventional justifications for the exclusion stories, and responses were comparable to the moral

stories, suggesting that they were interpreting the exclusion stories as prototypical moral stories (Killen & Rutland, 2015).

Part C. For the third hypothesis, I expected that higher justification and emotion complexity scores would predict higher ratings of seriousness. Higher moral justification scores reflected other-oriented or more specific moral justifications, while lower scores indicated punishment-, rule-based, or vague moral justifications (e.g., "it was bad"). Higher emotion complexity scores reflected negative or mixed negative emotion attributions, whereas lower scores reflected positive emotion attributions, and "I don't know" responses. Contrary to what was predicted, moral justification scores were not found to predict seriousness ratings for any of the six moral and mixed domain stories. Higher emotion complexity scores were found to be predictive of higher serious ratings for the talking story, and a similar trend was found for the disability story, but higher emotion complexity scores did not predict seriousness ratings for the other four stories. This is in contrast with the view that emotions act as a source of information when making moral judgements (Pizzaro, 2000). For example, a child who expected to feel negative emotion as opposed to positive emotion after committing a transgression, such as talking out of turn in class, may rely on this information when making a decision about how bad an act is. For the talking and disability stories, it appeared that negative emotion attributions were associated with higher ratings of seriousness, suggesting that emotion understanding may have influenced their evaluation of the act. Or alternatively, judging the transgressions as more serious influenced children's expectations of how they would feel if they had committed the act. Interestingly, for the talking story, older age was associated with a decrease in seriousness, suggesting that younger children are more sensitive to rules around speaking out of turn compared to older children. It is unclear why the relation between seriousness and emotion

complexity was not found for the other four stories, as it would seem that greater negative emotion would be associated with more serious judgements. One explanation, with respect to the swing push story, is that the majority of children judged the act to be "very bad" and reported negative emotion attributions, thus, there might not have been sufficient variability to identify a relation. However, this did not appear to be the case for the gender, chalkboard, and stealing stories. In these stories, it appeared that children who felt a mix of positive and negative emotions, were also reporting an act to be "very bad", thus, there seemed to be a disconnect between emotion attributions and moral judgements for these stories. Interestingly, however, the level of intensity of emotion was found to be correlated with seriousness ratings for several stories, suggesting that intensity levels may be a more sensitive measure of emotion when analyzing relations between moral judgements and emotion attributions.

As discussed previously, one explanation for a lack of association between emotion complexity and degree of seriousness of the transgression may have been a result of how the emotion complexity variable was coded. Similar to Hypothesis 1a, the data were reanalyzed using the alternative coding scheme (see description of coding in Hypothesis 1a discussion). The results were the same: The talking story continued to be the only story where emotion complexity predicted seriousness ratings after controlling for age and IQ.

With regard to the relation between moral justification scores and seriousness ratings, it was unexpected that no significant relations were found. This finding indicates that children who rated a transgression as very bad, were not more likely to provide justifications that were other oriented or moral specific. The non-significant finding may be a result of differences between the age groups with regards to justification scores. For the swing push, talking, chalkboard, and stealing stories, moderate positive correlations were found between age and justification scores.

Thus, although some younger children rated acts as "very bad", they were less likely than older children to use more sophisticated levels of reasoning. As a result, this relation may have minimized associations between justification and seriousness ratings.

Part D. For the fourth part of the first set of hypotheses, I expected there to be positive associations between perspective taking and domain coordination scores, as well as perspective taking and children's emotion attributions. Overall, children's perspective taking scores were not found to predict their domain coordination scores after controlling for age and IQ for mixed domain events. Further, children's perspective taking scores were not found to predict children's positive emotion attributions.

Theories of moral development have highlighted the central role of perspective taking for moral reasoning (Kohlberg, 1965; Piaget, 1965). Further, empirical research has found links between children's moral judgement and their understanding of emotional expression, affective perspective taking, and theory of mind (Dunn, Brown, & Maguire, 1995; Dunn, Cutting, & Demetriou, 2000; Walker, 1980). However, taken together, the findings are somewhat mixed. Whereas some studies have revealed associations between perspective taking and moral reasoning in children, others have yielded null findings (see Kurdek, 1978). In the current study, it was expected that advanced perspective taking skills would improve children's ability to recognize the moral and social transgressions of a mixed domain event, and would be associated with negative emotion attributions. One explanation for why these associations were not supported is that perspective taking is often measured differently across studies. Indeed, it has been suggested that inconsistencies in the literature are a result of significant variability in how perspective taking is measured (Kurdek, 1978). Perspective taking has been measured by assessing children's understanding of others' mental states and beliefs, visual perceptions, and

emotional expressions. Further, studies often include several perspective taking tasks and combine scores to create an overall composite score. Taken together, differences in assessment methods may account for inconsistencies in findings.

The lack of association between perspective taking and moral reasoning/moral emotion attribution is consistent with previous studies that, in contrast to what had been predicted, did not find relations between children's interpretive theory of mind and their moral justifications (Malti, Gasser & Gutzwiller-Helfenfinger, 2010; Menéres, 2014). Interpretive theory of mind refers to a child's ability to recognize that two people can have different interpretations of the same information due to differences in context or perception (Lalonde & Chandler, 2002). Interpretive theory of mind tasks require perspective taking abilities, because in order for a child to do well on the task, they must understand that two people can have different perspectives and beliefs. Taken together, the findings from Malti et al. (2010), Meneres (2014), and the current study suggest that the ability to take and coordinate different cognitive perspectives is not linked to a child's ability to evaluate why a transgression is wrong. One possibility is that the question, "Why [was the act wrong/bad]?" does not require an evaluation of multiple and differing perspectives. Although the victim and victimizer are both involved, as well as other observers, high moral reasoning scores can be obtained by only focusing on the victim's perspective. Further, one possibility is that child participants were relying on their own experience and memory of why certain acts are wrong. This may be the case for scenarios that are more straightforward (i.e., a child harming another child). Although the current study aimed to elicit a more nuanced understanding of a situation by giving higher scores to children who recognized both social-conventional and moral aspects of a transgression, perspective taking skills did not appear to be linked to domain coordination scores. Again, it is possible that the scenarios were

too simplistic. Indeed, the mixed domain events did not require children to balance conflicting perspectives in order score high in domain coordination. Thus, as stated before, children may have been providing answers based on experience or memory, as opposed to tapping into the different perspectives of each character. Given that the current study did not investigate this hypothesis, this explanation is highly speculative and would warrant further examination.

The current study also predicted an association between children's ability to understand varying perspectives/beliefs and their emotion attributions. Malti and colleagues (2010) did not find an association between emotion attributions and perspective taking; however, whereas their study used a task that was more removed from a social context (e.g., a "cold" cognition task), the current study used a perspective taking task that involved a social interaction and asked children to understand the emotional perspective of another child. Despite these differences in methodology, perspective taking skills were not predictive of children's emotion attributions. This finding was unexpected as it was thought that a greater number of positive of negative emotion attributions would signify lower perspective taking skills due to difficulties assuming the perspective of the victim, victimizer, and possibly the teacher.

Hypotheses 2: Age-related differences in emotion attributions, moral judgements, and evaluations

Based on a review of the literature, my first hypothesis was that younger children would attribute more positive emotions to victimizers in comparison to older children. Consistent with this prediction, significant age differences were found for the total number of positive emotions (both the initial and follow-up emotion attributions) across all stories by age group. Specifically, the youngest age group had a higher number of positive emotion attributions overall than the middle age group. Although the difference between the youngest and oldest age group was not

initially significant, follow-up analyses conducted after an outlier had been removed revealed a significant difference between groups. This finding is consistent with the happy victimizer findings that illustrate that younger children (i.e., 4- to 6-year-olds) are more likely to attribute positive emotion attributions to transgressors (Arsenio & Kramer, 1992; Malti, Gasser, & Gutzwiller-Helfenfinger, 2010; Nunner-Winkler & Sodian, 1988), and that this effect diminishes when asking children to predict how they would feel in the transgressor's position (Keller et al., 2003; Malti, Gasser, & Buchmann, 2008; Menéres, 2013).

In the current study, the youngest age group did attribute significantly more positive emotion attributions to victimizers in comparison to older children across all six transgression stories; however, there was some variability across stories. This general finding is in line with results showing a decline in the happy victimizer effect between ages 6- to 8-years (Arsenio & Kramer, 1992; Keller, Lourenco, Malti, & Saalbach, 2003; Nunner-Winkler & Sodian, 1988). However, the finding differs somewhat in that the current study found much fewer positive emotions attributions by the 6-year-olds than in previous studies (e.g., Arsenio & Kramer, 1992). As mentioned previously, one explanation is that the current study looked at self-attributed emotions, which may have reduced the happy victimizer effect in the youngest age group. The proportional data reveals that the chalkboard, talking, and gender exclusion stories produced the most pronounced age differences with younger age groups attributing more positive emotions to victimizers. In these mixed domain stories, the moral violation was more subtle, thus, younger children may have found them less emotionally provoking in a negative sense. In contrast, older children may be more aware of the social and moral consequences that accompany these acts due to more time in school and more exposure or participation in similar situations. For the chalkboard story in particular, older children were better able to speak to both the

social/conventional and moral elements of the story, thus it is possible that in recognizing the different levels of transgression, their emotion attributions reflected a greater understanding of the severity of the act. Further, the findings show that younger children were focused more on purely social explanations for why the chalkboard and talking stories were bad (see Table 2). Thus, they may have been less inclined to consider the negative consequences of the act on the teacher or students in the class.

Overall, the findings imply that, for straightforward moral events, children as young as 6-years are capable of identifying moral emotions in victimizers when emotions are self-attributed. This finding is congruent with previous studies showing that, from a young age on, children are able to attribute moral emotions to victimizers (Keller et al., 2003; Malti & Keller, 2010; Malti & Ongley, 2014). However, when transgressions become more ambiguous or unfamiliar, they appear to provide fewer moral emotions in comparison to older children. This finding is in support of the social domain theory view that young children are able to distinguish moral events from an early age, and highlights interesting developmental differences in transgressions that are more ambiguous.

Part B. A second prediction was that older children would provide a greater number of moral and conventional explanations in their interpretations of events, whereas younger children would be more likely to focus on only conventional aspects of a transgression. In line with this expected outcome, age accounted for a significant proportion of the variability in children's total domain coordination scores when controlling for IQ. This suggests that, overall, older children were more skilled at identifying moral and conventional justifications within each story. Examining children's responses across each story, the results showed that the oldest age group had higher domain coordination scores for the chalkboard story than the middle age group and

the youngest age group. This same pattern was also found for the swing push story. With regards to the talking story, a trend in the data suggested that older children were scoring higher than younger children. Unexpectedly, for the stealing story, younger children tended to have higher domain scores (albeit not significantly) than the 9- and 10-year-olds. No age differences were found for the gender and disability exclusion stories. In addition, the results indicated that younger children were not providing significantly more conventional responses than older children for each story.

Overall, the hypothesis that domain coordination scores would be higher for older children was partially supported by the data. Next, I will discuss consistencies and inconsistencies between hypotheses and the data.

In support of the hypothesis, significant age differences in domain coordination scores were found for the chalkboard story, and a similar trend was observed for the talking story. The results for the chalkboard and talking story (albeit only a trend) are congruent with data from Crane and Tisak's (1995) study, which used the same two mixed domain stories. The stories are believed to represent mixed domain events based on the fact that they were found to elicit both moral and conventional evaluations in a sample of young adults (Crane & Tisak, 1995). Using these mixed domain stories, along with two others, Crane and Tisak's (1995) study also revealed an age-related increase in children's ability to reason about conventional *and* moral issues. Specifically, they found that third graders were better able to combine their moral and social reasoning when compared to first graders and preschoolers. Advances in children's ability to balance both moral and social justifications may reflect underlying development of cognitive flexibility and reflection skills. Cognitive flexibility, which can be thought of the ability to consider multiple concepts simultaneously and shift smoothly between concepts, develops

quickly during the preschool period, and continues to develop throughout the early childhood years (Buttelmann & Karbach, 2017; Diamond, 2013; Hughes, 1998). Having the ability to recognize multiple views, respond flexibly and adapt behaviour based on new information is essential for success in social settings. In line with this idea, Crick and Dodge's (1994) social information processing model highlights the importance of children's interpretation of events, where having the ability to balance perspectives, reflect on self- and peer-evaluations and make inferences, is key to their social success. It is likely that having the ability to evaluate the social and moral consequences of an action simultaneously would also prove necessary for implementing socially and morally desirable choices and actions.

Although the swing push story was not categorized as a mixed domain story, older children still provided a greater number of combined moral and social responses than the youngest age group. A trend in the data revealed that, although younger children were able to provide moral reasons for why the push was wrong, they were more likely to miss the conventional elements of the transgression. Interestingly, younger children in the present study were not found to use strictly conventional explanations more often than the older age group for the mixed domain stories. This is contrary to Crane and Tisak's (1995) findings showing that younger children's justifications were more likely to be strictly conventional (i.e., rule or sanction-based). In a real-world setting, it is probable that both age groups in the current study would act appropriately if faced with a similar situation, however, it is also possible that the older children may have a stronger buffer against acting inappropriately given that they are able to simultaneously recognize the moral and social consequences of the behaviour.

Finally, when examining total domain coordination scores across all six stories, significant age differences were revealed, with older children scoring higher overall than

younger children. This finding suggests a general trend of greater integration of moral and conventional knowledge with age and is in line with the idea that domains of social and moral knowledge become more integrated with age (Turiel, 1983).

As previously stated, the exclusion stories did not reveal age differences in domain coordination scores and the stealing story revealed that younger children displayed slightly higher domain coordination scores. With regard to the exclusion stories, the majority of children provided strictly moral reasons for why these acts were wrong, regardless of age. Although the exclusion stories were conceptualized as mixed domain events due to overlapping moral (e.g., inflicting harm, equality) and social (e.g., social norms, group functioning, stereotypes) elements, it appeared that the participants perceived them to be primarily moral. This finding is in line with previous findings indicating that more straightforward exclusion scenarios are predominantly perceived by children and preadolescents to be wrong for moral reasons (Gasser, Malti, & Buholzer, 2013; Gasser, Malti, Buholzer, 2014; Malti, Killen, & Gasser, 2012). However, research indicates that with increasing age (i.e., from childhood to adolescence), children become more sensitized to the contextual factors of group exclusion and more likely to engage in mixed moral and conventional reasoning that integrates group dynamics and functioning. Thus, it is likely that, due to the age range of participants in the present study and the straightforward nature of the vignettes, differentiation of moral and conventional reasoning was not observed across participants or age groups.

Finally, unexpectedly younger children tended to provide more combined social and moral responses compared to the older children for the stealing story. A closer look at individual data indicated that, although younger children were providing more balanced responses, the vast majority of children's moral responses fell into the vague moral category (e.g., "it is bad", "it is

not right"). Older children were less likely to refer to rules as an explanation for why stealing is wrong, however, they were providing more other-oriented or specific moral justifications (e.g., "it is wrong because it is taking something that is not yours, and saying that it is"). Thus, although younger children were providing a mix of reasons, the moral explanations were not elaborated.

Part C. In addition to domain coordination scores, it was expected that older children's justification scores would be higher than those of younger children. Although most children provided multiple responses that reflected different categories, the justification score for each story represented the highest level of reasoning. Consistent with the hypothesis, 9- and 10-year-olds had higher justification scores overall compared to 6- and 7-year-olds. When combining scores from the two moral stories, the two mixed domain stories, and the two exclusion studies, exploratory analyses revealed that older children had higher justification scores for the moral and mixed stories, but not the exclusion stories.

This finding is consistent with previous research exploring the development of moral reasoning. For example, Crane and Tisak (1995) found that third graders were more likely to refer to the victim's welfare in their justifications when compared to first graders and preschoolers. Furthermore, Malti, Gasser and Buchmann's (2009) showed that Swiss kindergarten children provided significantly fewer moral justifications when assessing a stealing and a non-sharing story as compared to second-grade students. Further, the results also indicated that younger children provided more undifferentiated/unelaborated reasons when justifying their moral evaluations. Finally, Fang and colleagues (2003) observed a developmental trend in moral reasoning such that in response to a moral story about telling the truth, 7-year-old children were more likely to provide reasons such as obeying rules or undifferentiated responses, whereas 9-

year-olds referred to moral justifications and provided more specific moral explanations. In general, the current finding is consistent with the view that children's moral reasoning becomes more sophisticated with age, with greater acknowledgement of specific moral issues and a better understanding of how a transgression affects the victim. It also resonates with the finding that, with increasing age, children better understand the significance and seriousness of both abstract and concrete transgressions (Smetana, 2006; Nucci, 2001). An implication of this finding is that children who struggle to understand concepts of equality, fair treatment, and harm to others, and show developmental deficits in their reasoning may also demonstrate delays in social behaviour, including their interactions with adults and peers.

Exploratory analyses also revealed significant age differences when examining the moral and two mixed domain stories separately, and no significant age-differences for the exclusion story. For the moral and mixed domain stories, older children's moral reasoning appeared to be more sophisticated, however, this was not the case for the exclusion stories, where younger and older children demonstrated similar rates of specific moral and other-oriented responses. As previously mentioned, the exclusion stories may have been too straightforward to elicit developmental differences in children's reasoning. It is possible that if the scenarios were more nuanced or highlighted more complex group functioning issues, more differences would have been observed.

Exploratory analyses. Additional analyses were carried out to examine age differences in moral evaluations and judgements of permissibility. Differences across story types were also explored.

Evaluations. The current study also explored age differences in children's evaluations of events (e.g., whether an event was okay, and whether it would be okay to permit an action if

allowed by a teacher). The vast majority of children evaluated the six stories as wrong or not okay and no age differences were found across age groups. However, analysis of the data revealed that the chalkboard transgression was found to be less wrong in comparison to the other five transgressions, with 86% of children indicating that it is not right. The finding that most young children recognize moral transgressions as wrong is in support of the social domain view that young children are able to evaluate moral acts from an early age (Smetana, 2006). Further, it is in line with past studies showing that young children are consistently able to judge straightforward moral acts as wrong (Gasser, Malti, Buholzer, 2014; Keller, Lourenco, Malti, & Saalbach, 2003).

Analyses on how children evaluated the permissibility of an act also yielded similar results. Although there were no significant age differences, children rated the chalkboard and talking stories as being less permissible than the moral and exclusion stories. Again, this is consistent with findings in the social domain literature that suggest moral transgressions are viewed as wrong even if permitted, whereas more variability exists for social/conventional transgressions (Smetana, 2006; Smetana, 1995). The chalkboard and talking story were not purely social/conventional violations, and contained a combination of moral and social transgressions, which may explain why a considerable number of children viewed these acts as predominantly wrong even if permitted. A similar pattern was also found when examining whether children evaluated a transgression as acceptable if the act was allowed. Specifically, the majority of children viewed the chalkboard and talking transgressions as being acceptable if permitted, approximately 30% of children viewed the exclusion and stealing stories as acceptable if permitted, and only 20% did so for the swing push story.

Taken together, children's moral judgements and evaluations of permissibility were found to differ based on story type. Stories that were interpreted as predominantly moral were judged as less permissible even if an authority figure allowed the act. Young and older children were found to make these distinctions. The results provide support for social domain theory view that purely moral events are distinguishable from more conventionally perceived events. The differences were likely less pronounced in the chalkboard and talking story because they were mixed domain stories rather than purely conventional stories.

Hypotheses 3: Associations between moral behaviour, emotion attributions and domain coordination

It was expected that children who attribute a greater number of positive emotions to victimizers would have higher ratings on the Externalizing scale of the Child Behaviour Checklist, as rated by their parents. Overall the data revealed that the total number of positive emotion attributions (initial and follow-up) across all six stories significantly predicted parent-reports of externalizing behaviours. With regards to effect size, positive emotion attributions were found to explain 8.9% of the variability in externalizing behaviour. This prediction was based on prior research demonstrating associations between emotion attributions and behavioural issues in children (Arsenio, Adams & Gold, 2009; Arsenio & Fleiss, 1996; Asendorpf & Nunner-Winkler, 1992; Malti, Gasser, & Buchmann, 2009), as well as a recent meta-analysis by Malti and Krettenauer (2013) which found moderate and small relations between children's moral emotion attributions and their antisocial and prosocial behaviour, respectively. Thus, the current findings confirm what previous studies on emotion attributions and behaviour have shown. The data provides further support for the idea that moral emotions play a role in how children behave

in their homes and communities. Children who predict that they would feel more positively following a transgression appear to demonstrate more disruptive behaviours.

Although a significant relation was found, the amount of variance explained by emotion attribution was small. This finding is not entirely unexpected given that there are a number of moderating factors as discussed in Malti and Krettenaurer's (2013) meta-analytic review. For one, the current study used a correlational design as opposed to an experimental design as there were no controlled or manipulated variables. In the meta-analysis, correlational designs were found to have smaller effect sizes. Further, a binary coding system was used in the current study to assess the impact of positive emotions (i.e., tallying the number of initial positive emotions) on externalizing behaviour. Studies that have included an intensity measure within the coding system for moral emotion have larger effect sizes for the relation between moral emotion and antisocial behaviour (Malti & Krettenauer, 2013). The current study did, however, measure emotion attributions through self-attributed questions versus other-attributed questions. This method of measuring emotions has been found to account for stronger associations between moral emotions and antisocial behaviour (Malti & Krettenauer, 2013).

A second goal of the current study was to examine the relation between emotion attributions and externalizing behaviour in the context of ambiguous, mixed domain stories. Although exploratory, it was expected that mixed domain stories would elicit fewer negative emotions and more positive emotions for all children, and thus, positive emotions for mixed domain stories were not expected to predict externalizing behaviour. To examine this possibility in more detail, additional exploratory analyses looked at relations between externalizing behaviour and positive emotion attributions when combined across a) the two moral stories, b) the two exclusion stories, and c) the two mixed classroom stories. The findings indicated a trend-

level effect showing a positive association between positive emotion attributions and externalizing behaviours for the mixed domain stories but not for the moral stories or the exclusion stories. Indeed, children who thought they would feel happy following the talking or chalkboard transgressions were found to have somewhat more externalizing behaviours. There was a similar trend for the moral and exclusion stories that, however, did not reach significance ($r = .208$, $r = .171$, respectively). The finding that emotion attributions differ depending on story type is in line with previous research (Arsenio, 1988; Arsenio & Fleiss, 1996). Arsenio and Fleiss (1996) found that moral studies elicited more anger emotion attributions for the victimizer and conventional transgressions elicited more neutral emotion attributions.

One reason for why a trend was found for the two mixed stories but not the moral or exclusion stories, is that the variance in the number of positive emotions was greater for the mixed stories as compared to the exclusion and moral stories. Indeed, Table 3 illustrates that a smaller proportion of children provided positive responses for the moral and exclusion stories. The exception, however, is the number of positive emotion attributions for the stealing story which is similar to the chalkboard and talking stories, thus it appears that the lack of variance in emotion attributions for the swing push story explains why no relation was found between emotion attributions and behaviour for this story. This prediction was supported when examining the relation between positive emotions and externalizing behaviour for just the stealing story. Thus overall, children's self-attributed emotions for the mixed domain and stealing stories seemed to be most associated with externalizing behaviours. The finding that emotion attributions for mixed domain stories were more associated with externalizing behaviour is a unique finding. Whereas other studies have demonstrated clear links between moral emotion attributions and behaviour, these studies examined more straightforward moral events (Arsenio,

Adams & Gold, 2009; Asendorpf & Nunner-Winkler, 1992; Gasser, Malti, & Gutzwiller-Helfenfinger, 2010; Malti et al., 2009).

It is also important to note that the participants in the current study were rated by their parents as having relatively low externalizing scores overall. Indeed, 84% of participants' externalizing scores were less than 60 (where scores between 60 and 70 are within the "Borderline Clinical" range and scores above 70 are within the "Clinical" range). Thus, the range of the variable was limited. Due to the study's recruitment methods which involved parents and children self-selecting into the study, it is possible that parents of children with more disruptive and problematic behaviours were underrepresented. Although previous studies examining moral emotion attributions and behaviour also recruited through schools, it appeared that, for several studies, the research was carried out within the school and required little involvement from parents beyond consent (Arsenio & Fleiss, 1996; Asendorpf & Nunner-Winkler, 1992; Malti, Gasser, & Buchmann, 2009). In contrast, as stipulated in the ethics form of the current study, information was distributed through the schools and parents were required to contact the researcher if they were interested in participating. Further, the study required that parents accompany their children to the research lab, or provide consent for the researcher to come to their home. Thus, the nature of the current study's recruitment methods meant that parents who participated were motivated to participate and willing to set aside at least two hours of their time. Parents with oppositional or disruptive children may have been less likely to participate due to the demands of participation or possible concerns about how their children might behave in the presence of the researcher. In sum, underrepresentation of children with externalizing behaviour likely affected the study's ability to uncover associations between behaviour and moral emotion attributions.

Part B. A second hypothesis was that domain coordination scores would predict externalizing behaviours, and specifically higher DC scores would be associated with lower externalizing behaviours. In the current study, higher domain coordination scores reflected responses that integrated both social and moral lines of reasoning, whereas lower domain coordination scores reflected responses with only social justifications for why an act was wrong. Given that the ability to reason about multiple domains has been conceptualized as being a more sophisticated form of moral reasoning, and given that it signifies that a child is aware of why an act is wrong on multiple levels, it was expected that this group of children would present with more regulated behaviour. It was also posited that this effect would be strongest for the mixed domain stories. When analyzing individual stories, a significant relation was observed for the swing push story. These findings are consistent with the idea that an increased understanding of moral reasons for why an act may have been wrong may transfer to more adaptive and socially acceptable behaviour patterns. However, in contrast to the hypothesis, domain coordination scores were not found to be predictive of externalizing behaviours for the mixed domain stories. It is possible that, when analyzed together, there was greater power to predict an effect due to increased variability across participant scores. Although there are multiple studies examining associations among moral reasoning and behaviour (Arsenio & Fleiss, 1996; Astor, 1994; Blair, 1996; Blair, 1997; Blair, Monson & Fredrickson, 2001; Leslie, Mallon, & DiCorcia, 2006), and several studies examining interindividual variability in reasoning about mixed domain or multifaceted events (Arsenio & Lemerise, 2004; Crane & Tisak, 1995; Helwig, 1995; Horn, 2003; Smetana, Killen, & Turiel, 1991; Turiel, Hildebrandt, & Wainryb, 1991) to the best of my knowledge, there are no studies examining associations between children's ability to coordinate their knowledge across domains and their externalizing behaviours. The finding that domain

coordination was not predictive of behaviour for mixed domain stories was unexpected. One possible explanation is that the process of coordinating domains may look differently depending on contextual factors such as the type of transgression. Although some mixed domain research has shown that reasoning about multifaceted transgressions elicits justifications that are coordinated across the domains (e.g., Turiel, Hildebrandt, & Wanryb, 1991), other studies have shown that, when faced with mixed domain transgressions, children and adolescents may prioritize one domain over another (Killen, 1990; Turiel, 1983). Indeed, as posited by Turiel et al. (1991), prioritizing one domain over another could be considered a form of domain coordination. This form of coordination may require more advanced cognitive skills as prioritizing a domain may also require that an alternate domain is inhibited. This internal cognitive process of recognizing both domains, prioritizing and inhibiting, is not captured in the current study and may explain the lack of association between coordinating justifications and behaviour. Variations in how children and adolescents coordinate their reasoning is found to depend on multiple contextual factors such as the type of event, age-and sex-related differences, and unaccounted individual differences (Helwig, 1995; Horn, 2003; Turiel, Hildebrandt, & Wainryb, 1991). Thus, it may be that the ability to speak about moral and social justifications when analyzing a mixed domain transgression is not necessarily an indicator of more advanced moral reasoning let alone moral behaviour. Interestingly, for a prototypical moral story (the swing push), domain coordination scores were found to be predictive of externalizing behaviour. This result is consistent with previous findings indicating that children with disruptive behaviours are more reliant on rules to guide their moral judgements (Blair, 1997; Blair et al., 2001) and less likely to focus on the harm, loss and unfairness following a moral transgression (Aresnio & Fleiss, 1996). Because the swing push story is the one story that involves harm to

others, it is reasonable that an association would be found between greater externalizing behaviours and children who focused on rules in their justifications rather than the harm caused to the victim.

Discussion Summary

Overall, links between children's emotion attributions, justifications and moral judgements were found to depend on the transgression type. As expected, moral stories were rated as more wrong than mixed domain stories and exclusion stories, and higher justification scores were observed for moral and exclusion stories. Further, children who rated acts as more serious were also more likely to provide higher intensity ratings for their emotion attributions. Unexpectedly, however, seriousness ratings were not related to emotion complexity scores, apart from the talking and disability story. In contrast to what had been expected, children's emotion complexity scores were only found to predict domain coordination scores for the talking story, suggesting that negative emotion attributions were associated with an ability to understand both the conventional and moral aspects of this particular transgression. Taken together, support for the view that emotion understanding plays a role in the integration of domain understanding is mixed.

The current study provided further evidence that younger children are more likely to provide positive emotion attributions than older children. Further, older children were also more likely to provide other-oriented or specific moral justifications for the two moral and two mixed domain stories (talking and chalkboard). Of particular interest is the finding that domain coordination scores were higher for older children with regards to the chalkboard and swing push story. Additionally, a similar trend was shown for the talking story. This finding lends support to the view that domain knowledge becomes more integrated with age. In contrast, the opposite

trend, albeit not significant, was observed for the stealing story, where younger children appeared to have somewhat higher domain coordination scores than older children. This finding highlights the variability in how children coordinate knowledge across moral and social domains, and suggests that more sophisticated domain coordination may not necessarily reflect acknowledgement of both domains, but may also reflect prioritizing one domain over another.

As predicted, the total number of positive emotion attributions (including initial and follow-up emotions) across all stories was found to predict externalizing behaviours. Unexpectedly, domain coordination scores were only found to be predictive of externalizing behaviour for the swing push story but not for the mixed domain stories.

Implications of Findings

The findings of this study contribute to our knowledge about the relations between emotion attribution, moral reasoning, and externalizing behaviour. The contributions of the current study are unique as they examine children's emotion attributions in the context of mixed domain transgressions. Although past studies on moral emotion attributions have included transgressions that are not purely moral, such as social exclusion scenarios (e.g., Gasser, Malti, & Buholzer, 2014; Malti, Killen & Gasser, 2012), the present study expanded this research by including mixed domain stories that have been shown to elicit a mixture of conventional and moral justifications (Crane & Tisak, 1995). By including mixed vignettes, it was hoped that the findings would shed light on how children integrate knowledge across the social and moral domains, and how their understanding of ambiguous transgressions is influenced by their emotion understanding and perspective taking skills. Finally, the inclusion of mixed domain events allowed for an examination of links between moral understanding of more complex transgressions and externalizing behaviour.

One main finding was that children's emotion attributions and moral justifications differed significantly depending on the type of transgression. Variability in responses was also found across mixed domain stories and across age groups. This finding highlights that emotion attributions and moral justifications are highly variable and context-specific and suggests a need for caution when generalizing findings across different sociomoral contexts. Variability in findings was apparent when examining the role of emotion attributions in predicting domain coordination scores for mixed domain events. Although negative emotion attributions appeared to predict children's ability to recognize both moral and social elements of the talking story, this was not the case for the other mixed domain stories. Thus, it is difficult to draw conclusions about the role of moral emotion in enhancing the understanding of moral and social justifications; however, negative emotion attributions do seem to play at least some role in facilitating children's domain coordination. This finding is important as there are no previous studies that have examined connections between domain coordination and emotion attributions in the context of mixed domain events. It is possible that negative emotion attributions become more salient in domain integration when the conventional and moral transgressions of a mixed domain scenario are coupled with a greater degree of social risk (e.g., talking out of turn in front of the entire class) versus a lower degree of social risk (e.g., using the teacher's chalk without his or her knowledge). In line with this idea, children with a poorer understanding of moral emotions in higher risk social scenarios may have more difficulty recognizing different aspects of why an event was wrong, and thus may overlook the consequences of their actions.

Consistent with previous research, a second significant finding was that older children showed a greater ability to provide both moral and social justifications for the mixed domain transgressions (talking and chalkboard stories). This finding indicates that older children show an

improved ability to integrate their reasoning across social and moral domains and is congruent with the social domain view that social knowledge becomes more integrated with age. An ability to recognize social and moral aspects of a transgression is beneficial as it seems to reflect more flexibility in thought and a more comprehensive understanding of a situation.

A further significant age difference was that younger children had a higher number of overall positive emotion attributions than older children. This finding is consistent with the happy victimizer findings and implies that, although younger children recognize a transgression as morally wrong, they may have more difficulty identifying the emotional consequences of the transgression. Further, a closer examination of the data showed that the age difference was largest for the mixed domain stories and one of the exclusion stories. Thus, the results suggest that, although differences in emotion attributions with more straightforward moral stories are less pronounced across these age groups, the differences are still apparent when sociomoral stories are more ambiguous and less straightforward. Children who struggle to develop more complex emotion understanding skills, may show more difficulty in social interactions that have social and moral consequences that are more subtle and mixed. This could lead to deficits in social functioning and inappropriate behaviour.

A final important implication of the current study is that, in agreement with past findings, positive emotion attributions were found to predict externalizing behaviour. A closer examination of the data revealed a trend indicating that this finding was true for the two mixed domain stories but not for the exclusion stories and moral stories. As discussed above, it is possible that, because the mixed domain stories were subtler with regard to the moral and social transgressions, these particular stories were sensitive enough to tap into differences in externalizing behaviour.

With regards to clinical implications, the findings support past research indicating that children who are more capable of understanding the negative emotional impact of transgressions present with fewer externalizing behaviours. Alternatively, children who are less able to identify moral emotions when considering the act of committing a transgression, are at risk for externalizing behaviours. Although the direction of the relation is not established, this finding highlights the need for intervention focused on helping children recognize the emotional experiences of others. The ability to identify emotions and coordinate emotional expectancies for the self and for others is an essential component of social interaction. Children who behave more appropriately in school and home environment are more likely to possess more mature emotion attribution skills. Possible intervention strategies may target parents or children directly. Examples of specific interventions may include parental education related to the importance of helping children identify and label emotions when a transgression has occurred or through play or discussion outside of an actual transgression. With regards to direct intervention for the child, research suggests that direct training of emotion understanding can lead to improvements in awareness of complex emotion (Bauminger, 2002; Harriet & Tenenbaum, 2008).

Study Limitations

There were a number of limitations to the current study that also need to be discussed. First, as previously mentioned, there is the issue of volunteer bias which limits the external validity of the findings. Participants in the current study were informed of the study through school advertisements. However, instead of having caregivers sign consent forms that would allow the researcher to test within the classroom, caregivers were required to contact the researcher if they were interested in their child participating. This additional step likely increased sample bias as it selected parents who were eager enough to contact the researcher themselves

and schedule an appointment. An implication of this limitation is that the current sample may have differed from the general population with regards to the behaviours and cognitive/emotional processes that were assessed. Indeed, the range of externalizing behaviours in the current sample was truncated, as the majority of caregivers rated their children as behaving within the typical range. Thus, only a handful of children were rated as being within the clinical range for externalizing behaviour. A lack of variation in externalizing behaviour may have minimized the possibility of finding significant associations between externalizing behaviour and emotion attributions or justifications. Further to this point, the caregivers in the current sample demonstrated high levels of education overall and were not representative of the general population. Indeed, it appeared that the majority of caregivers had degrees and a large proportion of caregivers endorsed graduate level education. Parental education level has been shown to be positively associated with IQ (Rowe, Jacobson, & Van den Oord, 1999), emotion understanding, and language abilities (Cutting & Dunn, 1999). Thus, child participants in this study are likely not representative of the entire population and the findings are limited to this specific population.

To minimize sample bias, efforts were taken to sample participants from a range of public and private schools in order to increase representation of different economic and sociocultural backgrounds. Further, the researcher provided the option of testing children in their own home with the purpose of including families who may have transportation or time challenges. However, despite these efforts, sample bias was most likely present in the current study.

A second limitation pertains to how the variables were measured. With regards to domain coordination, it was assumed that children who have an increased ability to coordinate knowledge across the social and moral domains (i.e., higher "domain coordination") would be

more likely to refer to both domains in their justifications. Thus, higher scores were given to children who provided both social and moral justifications in their answers. Overall, few associations were found between domain coordination and the study variables. There are a number of possible reasons for this, one being that higher domain coordination skills are not necessarily linked to a greater likelihood of integrating both domains. Instead, it is possible that children with strong domain coordination abilities may work to inhibit one domain and select the domain that is most relevant to the story. If this is the case, future studies examining children's reasoning and emotion attributions in reference to mixed domain stories may want to reframe the probing question in order to tap into all possible thought processes (e.g., 'tell me all of the possible reasons why this might be wrong').

With regards to emotion attributions, the emotion complexity score did not include a measure of intensity. Although intensity of emotion was calculated, it was left out of the scoring rubric to avoid over-complicating the measure as it was based on both the initial and follow-up emotion attribution response. It is possible that including intensity ratings within the scoring system would allow for the detection of more subtle differences amongst children. Further, when asked how they would feel if they committed the act, many children said "bad". In the study's scoring system, although angry and embarrassed were coded as separate negative emotions, "bad" was included in the same category as "sad" or "guilty". Thus, some complexity in the emotional attribution was lost. It is possible that there is significant variation in behaviour or moral reasoning among children who express a vague sense of feeling "bad" and children who express feelings of sadness or guilt. It is important to note, however, that a very small percent of the sample provided "guilt" as a response, thus, if the lack of fine-grained scoring did affect the findings, its effect was likely small.

In terms of the overall moral justification score, one limitation is that it only captures the most sophisticated justification. Thus, potential variation in children's responses is reduced as alternative responses are not factored in. For example, a child who provides other-oriented and specific moral justifications will score equally to a child who provides other-oriented and hedonistic justifications, as only the other-oriented response will be scored. Despite this loss of information, the expected developmental patterns still emerged for the moral and mixed domain stories, but not for the exclusion stories.

The sample size used in the present study was relatively small; however, a-priori power analyses indicated adequate sample size for most calculations. Specifically, based on a conservative effect size (r^2) of .15, a desired statistical power of .8, and a probability level (α) of .05, a hierarchical regression with two predictors entered in block 1 and one predictor in block 2 required a sample size of 56. In addition, post-hoc power analyses revealed that power was adequate for detecting a significant effect for the Mixed Factorial ANOVA calculation ($1-\beta_0 = .99$). This was not the case, however, when analyzing whether emotion complexity and justification scores predict seriousness ratings. In this analysis, the post-hoc power analysis showed that power was below the acceptable level ($1-\beta_0 = .67$).

A final limitation with regards to measurement pertains to the measurement of externalizing behaviour. Specifically, the current study measured externalizing behaviour using parent-rated questionnaires and relied on indirect measures of behaviour. Research suggests that using both direct and indirect measures provides a more accurate representation of behaviour.

The current study used a variety of moral and mixed domain vignettes to assess children's moral evaluations, emotion attributions, and reasoning. However, a drawback to using qualitatively distinct vignettes was that the stories were not equally matched. This may have

resulted in differences in terms of how the stories measured children's emotion attributions and justifications. Indeed, there was significant variability in children's responses across the mixed domain stories. There are several differences among the stories that may have accounted for these differences. One important distinction may have been that the verbal descriptions were not equally matched in terms of word length. For example, the verbal descriptions that accompanied the exclusion stories were longer than the talking and chalkboard story descriptions. Thus, it is possible that receptive language demands of this task made the stories more challenging to understand. Alternatively, briefer explanations may have resulted in greater flexibility in interpretation for the chalkboard and talking story. This latter possibility may explain why the results showed a greater diversity in justifications for these two stories. The stories also differed in terms of how many children were represented in the images that accompanied each vignette. For example, the talking and exclusion stories included several onlookers whereas the chalkboard story did not. This distinction could have led to differences in how children interpreted the scenario, and may have pulled for different emotions or justifications. Indeed, in the talking story, the additional people in the story may explain why the story elicited greater feelings of embarrassment in comparison to the chalkboard story. Other qualitative distinctions such as the setting (e.g., classroom versus outdoor field), or children's prior experiences with the events portrayed in the scenes may also have contributed to differences in evaluations. As stated previously, past research has shown that children's justifications and emotion attributions are dependent on characteristics of the story (Arsenio, 1988; Arsenio & Fleiss, 1996; Helwig, 1995; Killen & Stangor, 2001; Turiel, Hildebrandt & Wainryb, 1991). Thus, the greater the distinction among stories, the greater likelihood that children will evaluate the stories differently, which ultimately reduces the generalizability of the current findings.

Due to the discrepancies in findings, and the lack of justification for analyzing scores from the four mixed domain stories together, the analyses were carried out at the individual story level for several of the hypotheses. Conducting analyses at the story level reduced the possibility of finding a significant effect if one existed. Thus, a limitation of the current study was that, for the majority of analyses, emotion attributions and justifications were assessed separately for each story. A final limitation with regard to the study vignettes was that the exclusion stories appeared to be interpreted as purely moral transgressions. Exclusion stories have been previously shown to elicit a mix of social and moral justifications (see Gasser, Malti, & Buholzer, 2014), however, the tasks used in previous research included more complex social exclusion scenarios such as asking children to decide whether to include a child with or without a disability in different activity contexts. Although there are both conventional and moral elements associated with the current study's vignettes, they did not seem to be subtle or complex enough to tap into the mixed domain aspects of a transgression.

A final limitation of the current study was the low variation in children's responses on some variables. In particular, children's emotion attributions were, for the most part, negative and their judgments for the exclusions stories were largely moral. Thus, few children obtained domain coordination scores that reflected a balance of both social and moral justifications. Lack of variation in these measures diminishes the possibility of statistically significant associations among the variables. It appeared that the exclusion stories did not adequately capture variability in children's responses, possibly because the vignettes were too straightforward. Children as young as 6 years expected that they as the victimizer would feel negatively after excluding an individual. Further, older and younger children provided purely moral justifications for why the act was wrong.

Directions for Future Research

The majority of children participating in the current study were within the typical range for externalizing behaviour when compared to their same-age peers. Thus, few children in this study were rated as having significant externalizing issues. Future research on domain coordination, moral justifications, and emotion attributions in the context of mixed domain events would likely benefit from including either a clinical comparison group or a sample of children that are more behaviourally diverse. This suggestion is in line with past studies of moral emotion attributions (e.g., Arsenio & Fleiss; Malti, Gasser, & Buchmann), where a behaviourally atypical group of children was compared to a typical group. By including a more diverse sample, or a clinical group, the data would allow for a better understanding of how the study variables impact externalizing problems. Further, the current study may have benefited from a more specific measure of externalizing behaviour as opposed to a parent-rated score that comprised both aggressive and delinquent behaviours (e.g., cruel to animals, setting fires, using drugs). Given that the moral and mixed domain events included acts of microaggression at school, rule breaking, and social exclusion, it is possible that the CBCL did not adequately capture this level of behavioural issues, given that many of the behaviours it queried could be considered more extreme. A future direction may be to include behavioural scales that measure microaggressions at school and home, social aggression, or possibly less severe rule-breaking behaviour such as speaking out of turn, talking back, using other people's property, or not following directions. For example, Arsenio, Adams and Gold's (2009) study helped identify associations between emotion attributions and different types of aggression in adolescent children. Specifically, teacher ratings of reactive and proactive aggression were measured in addition to CBCL externalizing behaviours to better understand the complex relations between hostile attributions biases and

aggressive tendencies. Further, other studies have used experimental games to assess moral or altruistic behaviour. For example, a study by Gummerum et al. (2010) measured behaviour using the dictator game, which requires children to divide stickers between themselves and other unknown children. Future research may also want to consider using a multimethod approach to measuring behavioural outcomes such as including teacher ratings of behaviour in addition to parent ratings. A multimethod approach would likely provide a more holistic and valid portrayal of the child's behaviour. Teacher ratings of behaviour would be particularly relevant for the current study given that many of the social scenarios were set at school. Multimethod approaches to studying children's temperament have been shown to be superior to the single method approach in terms of more accurately capturing the complexity of behaviour (Karp et al., 2004).

An additional avenue of future research on mixed domain justifications and emotion attributions is to consider alternate ways of conceptualizing and measuring domain coordination. In the current study, domain coordination was defined as the ability to recognize both moral and social aspects of a transgression in a mixed domain event. The current study predicted that domain coordination scores would be higher in the context of mixed domain events, and this prediction was partially supported by the data. This assumption is in line with previous studies providing some evidence for the hypothesis that children coordinate judgements across moral and social domains for mixed domain scenarios (Arsenio & Lemerise, 2004; Crane & Tisak, 1995; Smetana, 1982; Turiel, 1983). Further, there is some support for the idea that domain coordination increases with age and possibly emotion understanding. However, current findings and past research show that there is considerable variability in the likelihood of whether children provide a combination of moral and social justifications for mixed domain scenarios. This variability cannot be explained entirely by age or emotion understanding. One possibility is that

domain integration is not limited to coordination of moral and social justifications, but could also signify internal coordination processes that are not verbalized. Indeed, children with higher domain integration skills may use internal strategies to prioritize their domain knowledge by inhibiting one domain of knowledge over another. To test this hypothesis, future avenues of research could include alternative interview questions to tap into children's knowledge of different reasons for why an act was wrong (e.g., "tell me all the possible reasons that makes [the act] wrong", or "tell me the most important reason, now tell me a less important reason", or "write down three reasons for why the act was wrong"). Although the current study did employ additional probes so that children could provide multiple justifications, the probing question did not specifically ask children to name as many reasons as they could think of. In general, additional research on children's responses to mixed domain events is required in order to tease out other underlying factors such as cognitive processes, cultural, or contextual factors that may shed light on the development of children's domain coordination.

With regard to the mixed domain scenarios, future research may benefit from modifying or controlling contextual variables to further explore domain coordination. For example, one possibility is to manipulate the "victim's" reactions to the mixed domain events in order to explore the impact on social and moral reasoning and emotion attributions. For example, in the chalkboard story, the teacher could be introduced as displaying either anger, sadness, or neutral emotions towards the child who wrote on the chalkboard. Exploring the emotional cues of victimizers would allow for further investigation of how children use emotional cues to prioritize their justifications for mixed domain events and attribute emotions. This adaptation is in line with past research by Smetana (1982), which assessed children's reactions to mixed domain events depending on how an outside observer responded to the scenario. Other possible context-

related variables to explore may include the setting (e.g., school versus home), the intention of the victimizer, or the nature of the relationship between the victim and the victimizer. The purpose of exploring these contextual factors would be to help identify other sources of variability in children's responses to mixed domain transgressions. In addition to manipulating contextual factors, a second possibility would be to include exclusion scenarios that are more mixed or multifaceted (Gasser, Malti, & Buholozer, 2013). In the current study, the exclusion scenarios were interpreted for the most part as straightforward moral transgressions. To create scenarios that emphasize both moral and social domains, the scenarios may have to be adjusted so that they are less obviously moral. For example, one scenario that is more ambiguous may involve the exclusion of an older child with a separation anxiety disorder, who needs to be accompanied by a parent, from a play date at another child's house. In this scenario, there may be more obvious social conventions that are being violated such (e.g., failure to separate from a parent) in addition to moral violations (e.g., unfair to discriminate or leave out children who are different).

In the current study, a significant portion of the children used the word "bad" to describe how they would feel if they had executed a transgression. Further, in the present study, "bad" feelings were scored the same as alternative negative feelings such as sadness or guilt. Future studies should differentiate between these emotions in order to further tease apart differences between children who provide vague negative attributions and those who provide more specific emotion attributions. Further, to ensure that every child is aware of a range of emotion terms, another possibility may be to include an emotions training task prior to completing the moral interview, to ensure that children have an understanding of a range of different emotions.

Final Conclusion

Children routinely find themselves in situations that require moral judgement and decision making. Development of moral and social understanding is theorized to occur within specific domains of moral, social and personal/psychological knowledge (Smetana, 2006, Turiel, 1983). Although these domains are considered to be distinct and separate, there is also an understanding in social domain theory that children and adults must coordinate their knowledge across the different domains when faced with situations that are more ambiguous and mixed. However, little is known about how this coordination takes place, and what processes are at play to promote domain integration. The present study examined the development of children's domain coordination, as well as the role of emotion understanding in facilitating integration of children's domain knowledge. Associations between emotion attributions, moral behaviour, and moral understanding have been well established in the literature (see Malti & Krettenauer, 2013); however, few studies have examined emotion attributions in the context of mixed domain events. Thus, the current study was unique in that it examined relations between emotion attributions, justifications, and externalizing behaviour in the context of mixed domain events. Studying mixed domain coordination is a worthwhile endeavour as ambiguity in social and moral interactions is often the norm. Thus, it is hoped that shedding light on processes that facilitate children's ability to consider multiple angles of a mixed domain event will further our understanding of the development of domain coordination and emotion attributions, as well as variations in children's externalizing behaviours.

Overall, the current study found that older children used more specific and (or) other-oriented moral justifications, and demonstrated greater domain coordination scores for the two mixed domain stories (albeit only trending for the talking story, $p = .056$), and, unexpectedly,

the swing push story. Emotion attributions were not found to predict children's ability to coordinate knowledge across moral and social domains, except in the talking story. However, a developmental pattern, consistent with past studies was found for children's emotion attributions. Specifically, older children provided significantly fewer positive emotion attributions than younger children. Further, an increase in positive emotion attributions was found to positively predict parent reports of externalizing behaviour. In contrast to the study's hypotheses, perspective taking was not found to predict children's domain coordination scores or emotion complexity scores.

The above findings provide support for the idea that domain coordination increases with age. Further, the findings replicate previous research on the important role of emotion understanding in predicting children's externalizing behaviour. Research that aims to understand developmental patterns in moral understanding, in addition to the connections between moral reasoning, emotion, and behaviour, is important for several reasons. For one, it expands on existing social domain research on mixed domain transgressions and provides insight into how processes of domain integration unfold. Additionally, it opens up possible avenues for intervention for children who struggle with moral decision making and moral action in their daily lives. Continued research on mixed domain events and children's domain coordination is needed in order to advance our understanding of variations in children's moral and social reasoning, and of the links between their reasoning, emotion attributions, and behaviour.

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Appendices

Appendix A: Demographics Questionnaire

Name of Child: _____

Name of Caregiver: _____

Relationship to child: _____

Child's date of Birth: _____

Child's location of Birth (Country): _____

Family ethnicity (e.g., African Canadian, Canadian, Chinese, etc): _____

Gender of child: ☐ Male ☐ Female ☐ Transgendered

Handedness of child: ☐ Right ☐ Left

Developmental History

Has your child ever been suspected of having a neurological disorder, psychiatric condition or developmental delay (e.g., ADHD, anxiety, learning disorder, etc)? ☐ Yes ☐ No

    If yes, please describe:_____

Does your child speak any other language in addition to English? ☐ Yes ☐ No

    If yes, what languages does your child speak: _____

    If yes, is he/ she bilingual (i.e., speak 2 or more languages equally well)? ☐ Yes ☐ No

Demographic Information

Caregiver 1: ☐ Mother ☐ Father ☐ Legal Guardian ☐ Other: _____

Caregiver 1's education level (number of years including elementary and high school): _____

Caregiver 2: ☐ Mother ☐ Father ☐ Legal Guardian ☐ Other: _____

Caregiver 2's education level (number of years including elementary and high school): _____

Approximate annual family income (please select one):

☐ Less than $20,000   ☐ $110- 139,999

☐ $20-49,999   ☐ $140- 169,999

☐ $50-79,999   ☐ Greater than $170,000

☐ $80- 109,999

Would you like a copy of the summary of results from the study? ☐ Yes ☐ No

If yes, please leave email address

_____

Appendix B: Moral Development Tasks

Mixed domain stories.

*Each story is accompanied by an image or several images to tell the story

      Story 1: Child speaking without raising his or her hand. "This is Samantha/Ryan. (points to character in the story). Samantha/Ryan is talking with out raising her/his hand."

      Story 2: Child playing with his or her teacher's chalk. "This is Mark/Allison (points to character in the story). In this story, [the child] is playing with his/her teacher's chalk".

      Story 3: Child with a physical disability excluded from a sport. "This is Tony/Emma (points to child with physical disability). Tony/Emma has a disability which means his/her body is different from the other children. Tony/Emma is not injured. Tony/Emma sees their peers playing a game of soccer and would like to play. He/she asks if it is okay to play, but Cam/Jenny says that he/she cannot play because they only want good players on their team."

      Story 4: Child excluded from a gender non-conforming activity. "This is Tyler/Heather (points to child). Tyler/Emma sees a group of girls/boys making necklaces/playing with trucks, and asks to join. Tara/Bryan says that he/she cannot play because their group is only for girls/boys."

Moral domain stories.

      Story 1(The Push): "Look at these pictures. A boy named Jack was swinging on the swing at school. While he was swinging, another boy/girl named Mike/Michelle wanted to swing too, and there was only one swing so he/she pushed Jack off the swing. Now Mike/Michelle is swinging and Jack has fallen off."

      Story 2 (Stealing): "Look at these pictures. A girl/boy named Jill/Jack has a chocolate bar in her/his coat that she/he is hoping to eat after school. Jill/Jack hangs her/his coat up at

school, Claire/Ben, her classmate is watching Jill/Jack hang up her/his coat with the chocolate

bar inside. Claire/Ben takes the chocolate bar from Jill's/Jack's coat. Jill goes to get her/his

chocolate bar at the end of the day and sees that it is gone."

Moral Judgement Questions:

1. Was it right to do what [the victimizer did], why? (Evaluation of whether the child

    understands the rule).

2. If the teacher/parent said [chewing gum in class] was allowed, is it okay for the teacher

    to say that? (Authority legitimacy).

3. If the teacher said [chewing gum in class] was allowed, would it be okay if a child

    decided to [chew gum] one day at school? (Authority contingency).

4. How bad was it that the boy/girl committed the act? (Rating of seriousness) In this

    question, children were asked to point to a face which depicted the degree of badness

    from a scale of 0 (not bad at all; smiley face) to 2 (very bad; large frown face).

Emotion Attribution Questions:

1. If you were [the transgressor], how would you feel at the end of the story?

2. How [sad] would you feel? (child uses affective rating scale)

3. Do you think you could feel anything else? What?