Measuring Social and Emotion Information Processing in Early Childhood: A Pilot-test of a Revised and Expanded Storybook Interview

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ABSTRACT

Social information processing (SIP) models of social cognition are increasingly being applied to children and adolescents with most studies focusing on differences between aggressive and nonaggressive children in the coding and interpretation of social cues (Dodge and Newman, 1981; Darin and Sharon, 2012). However, research in this field is characterised by two substantial deficits, including insufficient integration of emotion processing in SIP frameworks and a lack of accessible and reliable measurement tools for social and emotional information processing, particularly for young children. The current study attempted to address this gap in the research by pilot-testing a revised and expanded version of the Social Information Processing Interview for preschool children (SIPI-P; Ziv and Sorongon, 2011). Fifty children (26 male and 24 female), who ranged from 41 to 61 months of age were recruited from eleven early childhood education centres in the Christchurch metropolitan area. Analyses of both qualitative and quantitative data showed a number of gender differences and distinctions in social and emotional information processing across the prosocial, ambiguous, and conflict hypothetical stories. Boys tended to score slightly better than girls across 8 of the SIP and emotion processing variables. However, boys also generated more aggressive responses than the girls. Overall, the inclusion of emotion processing variables and the two prosocial scenarios in a single interview for preschoolers (SIPI-P) is achievable, although additional revision is necessary with the prosocial hypothetical stories. Future research on the SIP model using this tool may provide a more complete picture of the development of social and emotional information processing in young children.

Measuring Social and Emotion Information Processing in Early Childhood: A Pilot-test of a Revised and Expanded Storybook Interview

As children develop through the toddler and preschool years, one of their important developmental challenges is to learn to navigate the social world of human interaction. During this time, children encounter a diverse array of social situations that are often unfamiliar, yet somehow they manage to quickly learn how to perceive and interpret social cues and adaptively display social behaviours. There are many important elements in this process of social-cognitive development. For typically developing infants, there are important developmental steps of social-cognitive skills that have been well researched and facilitate the development of social cognition. The early signs of theory of mind are (1) shared attention, (2) understanding intentions (3) object permanence (4) joint attentional engagement (5) gestural communication (6) following others' gaze direction, and (7) pointing gestures. All of these skills involve the coordination of attention between a social partner and an object of mutual interest, and all have been hypothesized to require a basic understanding of other people as attentional and intentional agents (Calvete and Orue, 2012; Carpenter, Pennington and Rogers, 2002).

Later in infancy and continuing through early childhood, children continue to build this foundation of social cognition with language, empathy, self-reflection, response inhibition, working memory, perspective taking and social and emotional processing. Social cognition is defined as 'the ability to understand other people' focusing on how people process, store, and apply information about other people and social situations. This involves the methods of cognitive psychology and information processing theory

such as monitoring, predicting and understanding the behaviours and actions of others (Geanagu and Reid, 2006, p. 544).

These cognitive processes within the social context may be grouped under the term 'social information processing (SIP)'which can be defined as "the mental processes involved in making sense of and responding to social events" (Ormrod, 2014, p. 73).As explained by Crick and Dodge (1994), a number of social information processing models have been proposed over the past four decades. In their review and reformulation of social information processing, Crick and Dodge (1994) describe social information processing as a theoretical model of social cognition which hypothesizes that within a social situation there are a series of steps in children's cognitive processing of stimuli. These cognitive steps lead children to either an appropriate or inappropriate response based on their database of memories from past experiences (Baker and Hudson, 2014; Crick and Dodge, 1994; Helmsmen, et al., 2012; Schultz, et al., 2010; Ziv and Sorongon, 2011; Ziv, 2012; Ziv, 2013). The current study investigates how these SIP steps can be measured in young children in conjunction with emotional information processing.

The following introduction and rationale for this study are structured as follows. First, the leading cognitive processing model based on the work of Dodge and colleagues will be discussed, followed by the model of social information processing (Ziv and Sorongon, 2011), the integration of emotion within the social information processing model and the developmental perspective of social information processing and emotion. Concluding with a discussion on social information research with early childhood children and social information processing in prosocial situations.

Cognitive Processing Models of Social Information Processing (SIP)

Several SIP models have been proposed (Huesmann, 1988; Rubin and Krasnor, 1986). However the most influential to date has been that of Dodge and his colleagues (Crick and Dodge, 1994; Dodge, et al., 1986). Dodge's original SIP model of children's social competence described a sequence of five cognitive processes that children are hypothesized to go through when responding to specific social stimuli or social cues (Dodge, et al., 1986). These steps were (1) encoding, (2) representation, (3) response search, (4) response decision, and (5) enactment. Each of these cognitive steps were assumed to occur in response to a set of social cues and to be outside of conscious awareness. Dodge's cognitive SIP model was firstly depicted in a linear fashion, which allowed for a visual representation of the proposed sequential process in which SIP was suggested to occur (Gifford-Smith and Rabiner, 2004). However, Dodge, et al., (1986) underlined the fact that while hypothetically the steps can be separated, they can also be used cumulatively.

Crick and Dodge (1994) reformulated the SIP model of children's SIP to emphasize the connections between a person's cognitive database, such as memories, social schemata, scripts, social understanding, and acquired roles, and the different SIP steps that were earlier called 'processes'. The earlier model did not clearly account for the idea of pre-existing abilities and a store of information. The steps of the reformulated model proposed that firstly a child must encode the internal or external social cues they are presented with. It is expected that individual children may attend to different relevant and/or non-relevant cues, which provides one explanation for potential errors in SIP. A child must then interpret the data that they have encoded by connecting their prior learning and knowledge of the world to this social encounter. The child must access potential responses through the cues they have attended to and their interpretations. If the situation is new, the child may construct new behaviours in

response to the immediate social cue; however, if it is a familiar situation, children can access from memory possible responses. If the child generates many different responses, it is assumed that all responses will be consistent with a previously developed rule or script that connects the interpretation of the situation. Finally it was hypothesized that the child must evaluate the previously accessed or constructed responses and select the most positively evaluated response before enacting the behaviour. These steps are assumed to occur instantly and repeat within every individual social situation or interaction either at a conscious or non-conscious level.

One of the most dramatic changes in Crick and Dodge's (1994) revised model was the formation of a cyclical progression of SIP steps (Figure 1 below) rather than the original linear format. This is due to the first cited problem of the model, which was the chronological rigid sequential structure of the processing model (Smolensky, 1988).The non-linear nature of the revised model highlights the assumption that children are engaged in multiple SIP activities at one time even though the processing of a particular stimulus may be sequential. Therefore it is assumed that as new cues are being encoded; prior cues are being interrupted and acted upon. This revision captures the complexities inherent in most social situations, and was done in response to criticism from connectionist theorists' who argued that processing occurs in simultaneous parallel paths and that individuals are engaged in multiple social information processing activities at the same time (McClelland, Rumelhart, and Hinton, 1896).

The other change to the original SIP model that Crick and Dodge (1994) proposed was a sixth step. This step was called goal clarification, and was put in between the interpretation and response access steps. Goal clarification was selected on the premise that children generally select a preferred outcome for a situation, which in turn has an impact on the various kinds of responses they may produce. The new

addition of the sixth step meant that the steps in the model were now arranged as follows: (1) encoding of cues, (2) interpretation of cues, (3) clarification of goals, (4) response access or construction, (5) response decision, and (6) behavioural enactment.

The developmental course of SIP had largely been ignored when Crick and Dodge (1994) published their revised theoretical model. The authors proposed that at the time SIP models were constructed by theories that tended to lack a developmental focus, and instead focused on individual differences in social cognition and social behaviour. Crick and Dodge proposed that social experiences and socialization by adults fostered quantitative and qualitative changes in cognitive ability that improved the efficiency and complexity of SIP. Along these lines, Crick and Dodge (1994) highlighted research in cognitive heuristics that established how human cognitive processing has an efficiency orientation. Thus, individuals tend to rely on heuristics, scripts, and schemata, or internal working models, to simplify the cognitive tasks involved in SIP. The proposed model includes these elements as latent mental structures that make up part of an individual's social knowledge bank. The revised SIP model provided for connections between a person's cognitive database such as memories, social schemata, scripts, social understanding and acquired roles, and the different SIP steps.

Ziv and Sorongon (2011) Model of Social Information Processing

Figure 1 below displays a model of social information processing from the work of Ziv and Sorongon (2011), adapted from Crick and Dodge (1994). This model hypothesizes that within a social situation there are steps in the cognitive processing of the contextual and interactive stimuli. As mentioned above, these cognitive steps lead to a child's responsive behaviour through, cue encoding (Step 1), which refers to the focus of a child's attention towards their internal and external environments, such as showing extreme caution to threatening cues. The model proposed that errors might

occur within this process due to the fact that different children will attend to different cues, some of which are relevant and some not. Cue interpretation (Step 2), which refers to the way in which a child interprets the information that they have perceived which will be connected to prior learning about the world, such as what a particular facial expression means in regards to intention. Response access (Step 3) which involves a mental generation of possible responses to a social interaction; for example, "say 'stop it'', 'tell the teacher', 'walk away' or 'hit'. Next, response generation (Step 4) involves mentally weighing up the alternative behavioural responses, and selecting an appropriate response through the evaluation of social stimuli such as, 'if I knock over that boy's block tower, I will get in trouble, so I better not do that'. Finally, concluding the SIP process, the last step involves enacting the selected behavioural response.

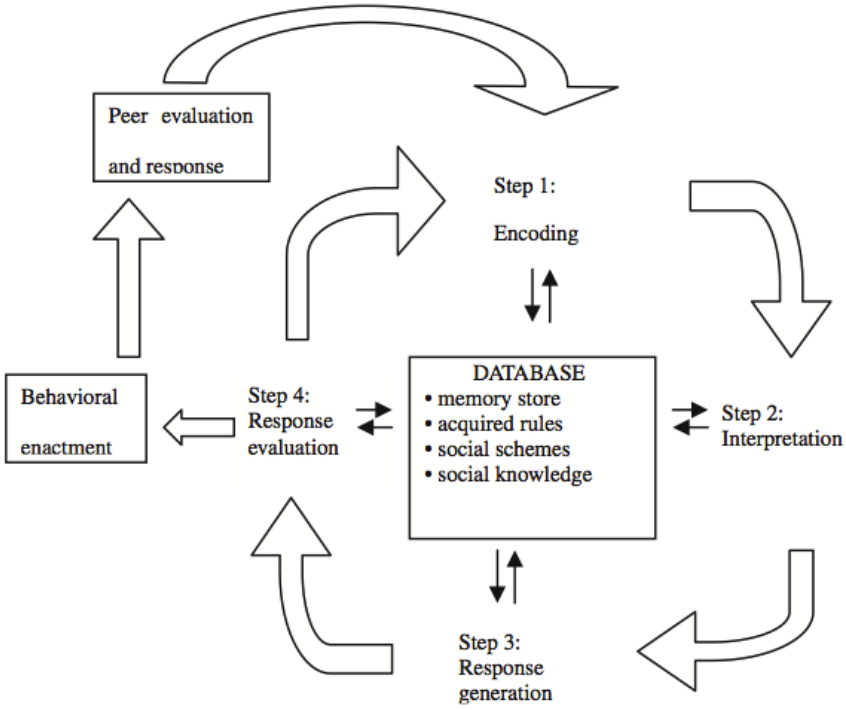


Figure 1: *The Social Information Processing model (Ziv and Sorongon, 2011) (Adapted from Crick and Dodge, 1994)*

Over the past 25 years, the Social Information Processing (SIP) model developed by Dodge, et al., (1986) and expanded by Crick and Dodge (1994) has generated an increase in interest and research focusing on children's social development (Schultz, et al., 2010; Ziv and Sorongon 2011; Helmsmen, et al., 2012; Baker and Hudson, 2014). As previously mentioned, research conducted on SIP in early childhood children is an area that is currently developing due to researchers increased interest in understanding how younger children perceive and interpret their social environment, and how these skills develop over time (Baker and Hudson, 2014; Calvete and Orue, 2012; Schultz,et al., 2010; Ziv, 2012). For example, de Castro et al., (2002) published a review that identified 31 published studies among six to twelve year old children that examined attributions of hostile intent, but only two studies involving four to six year old children. The proposed reasoning for the lack of research within this age range is that some researchers have suggested that children's SIP tendencies might not influence their social and behavioural functioning as strongly in early childhood, than in later childhood (for a full review, see Crick and Dodge 1994; Unkelbach, 2012). Schultz, et al., (2010) additionally added that producing reliable and valid assessments of young children's social information processing can be difficult due to their limited attention and verbal skills. It was suggested that to combat this issue, complex assessment methodologies that engage children well and minimize verbal requirements is required.

The SIP model has also proven to be valuable to developmental and clinical psychologists interested in comprehending and addressing characteristics of aggressive and peer-rejected children. For example, developmental psychologists refer to the SIP model to gain a better understanding of how patterns of abnormal behaviour may be passed on across generations (Shields and Cicchetti, 1998; Ziv 2012). It has also been used to assess social adjustment patterns in children, including social competence,

emotional competencies, and maladjusted and disruptive behaviours (Ziv and Sorongon, 2011; Helmsmen, et al., 2012; Ziv, 2012; Ziv, 2013).

The development of the original Social Information Processing Interview for Preschool children (SIPI-P) was in response to the recognized trouble that researchers were having in studying SIP in preschool aged children. The SIPI-P uses a children's storybook format, which is identified as a reputable method for use with preschoolers through the pictorial interview structure. (Ponitz, et al., 2008; Helmsmen, et al., 2012). The SIPI-P follows the same multistep framework as the SIP model, by incorporating questions related to encoding, interpretation, response generation and response evaluation on the assumption that each step could independently be associated with individual differences and should therefore be measured separately.

A limitation of the original SIPI-P is that it only assesses ambiguous and conflicting scenarios, therefore the revised social information processing interview's main goal in the present study is to investigate the utility of integrating via the SIPI-P aspects of emotion processing and social information processing along with new prosocial vignettes. As mentioned above, current literature identifies that there is a gap in research and in our understanding of social information processing (SIP) in young children. The present study takes this into consideration while describing how to apply and modify an already valid assessment tool in order to examine patterns of social and emotional information processing across both negative and prosocial stimuli, as well as gender differences in a sample of typically developing preschool children.

Use of the Reformulated Model in Social Information Processing Research

The majority of studies on SIP in children and adolescents have focused on patterns of associations between SIP and various forms of aggression and conduct problems. Most research has also relied heavily on self-report measures. One exception

to this trend is a study by Horsley, et al., (2010). These authors explored the use of electronic eye-tracking measures in an attempt to address the initial steps of the SIP model. Eye-tracking methodology was hypothesized to be a direct assessment of encoding of unclear and frustrating scenarios. The use of the electronic eye tracking method in this study was an original approach to investigate visual encoding of social information due to the inadequacy of self-report measures in assessing rapid automatic processes. Horsley et al., (2010) found that in a group of 60 ten to thirteen year olds, the non-hostile cues were more likely to be looked at longer by aggressive children (Step 1 encoding), who also attributed more hostile intent than their nonaggressive peers (Step 2 interpretation). This suggests that schema-inconsistent information is paid more attention; however this does not alter attribution biases.

Research with adolescents has been done in order to examine the relationship between SIP and the difference between reactive and proactive aggression. Calvete and Orue (2012) used a longitudinal study to investigate whether cognitive schemas of justification of violence, mistrust, and narcissism predicted SIP, and whether SIP in turn predicted reactive aggressive behaviour in 650 adolescents. Three measures were used in the study (1) The Social Information Processing Questionnaire, which presented 5 ambiguous scenarios (3 suggested ambiguous provocations by peers, while one involved an unjust punishment by an adult, and one involved an ambiguous rejection by peers), (2) The Irrational Beliefs Scale for Adolescents, which is a justification of violence subscale whereby 9 items reflect the idea that aggression is appropriate in a variety of situations (e.g., "Sometimes you have to hit others because they deserve it") and (3) The Schema Questionnaire, which uses 8 items to assess narcissism or grandiosity schema by referring to the belief that one is superior to other people and entitled to special rights and privileges (e.g., "I'm special and shouldn't have to accept many of the restrictions placed on other people").Measures of cognitive

schemas at Time 1, SIP in ambiguous social scenarios at Time 1 and Time 2, and reactive aggression at Time 1, Time 2, and Time 3 was completed to determine whether SIP measured at Time 2 mediated between the cognitive schemas measured at Time 1 and the aggressive behaviour measured at Time 3.In this study, the only component deemed to be the mediator of reactive aggression was (Step 4) response access/construction.

Arsenio, Adams, and Gold (2009) assessed the role of emotion in relation to SIP, moral reasoning, and reactive and proactive aggression by looking at the connections these types of aggression had with SIP, moral reasoning, and emotion attributions. Different variables of SIP were related to different forms of aggressive behaviour, as well as different aspects of emotion. Hostile attribution biases (Step 2: interpretation) and ease in enacting aggression (self-efficacy evaluation; Step 5: response decision) were associated with reactive aggression, as well as lower verbal abilities, and these links were mediated by attention problems. While, higher expectations for positive emotional and outcome expectations (Step 5: response decision) for aggressive responses were associated with proactive aggression and higher verbal ability. Intent attribution (Step 2) and outcome expectancies (Step 5) were the only two steps utilized in this study to measure SIP. This is because intent attribution (Step 2) is generally used to assess early-stage information processing that is usually associated with reactive aggression, and outcome expectancy (Step 5) is usually linked with later stage SIP and proactive aggression because of the predatory and calculated nature of the aggression (Nesdale, et al., 2013). It is important to note that response decision was measured with two variables, self-efficacy evaluation (relating to reactive aggression) and outcome evaluation (relating to proactive aggression); therefore, response decision was linked to both forms of aggression.

Ziv (2012) reported that chronically aggressive children usually have distorted SIP patterns in each step of the reformulated model. The interpretation of their peers' social intentions has been noted as less accurate (Dodge and Price, 1994; Dodge, et al., 1986; Katsurada and Sguwara, 1998; Schult, 2002), and they are more likely to construct aggressive or unskilled responses (Schultz, et al., 2010; Ziv, 2012). Following from this, these aggressive children are more likely to expect positive instrumental and interpersonal outcomes as a result of their aggressive response/s (Laible, et al., 2013; Kupersmidt, et al., 2011).

A further distinction made in types of aggression is between overt and relational. Overt aggression (more common among boy peer groups) describes harming others through physical means or unconcealed threats, whereas relational aggression (more common in girl peer groups) involves harming others through purposeful manipulation or damage to their peer relationships (Crick, 1996). Darin and Sharon (2012) assessed whether attention and memory processes were biased in aggressive children, as assumed by the social information–processing model. Additionally it was explored whether similar biases were associated with overt and relational aggression. Videos of overtly and relationally aggressive scenarios were shown to the children. The results suggest that relationally aggressive children are particularly fixated on relationally aggressive events. Similar to this study, Arsenault and Foster (2012) examined the shifting and free recall (Step 1: encoding) in aggressive children. The group of children that had been nominated by their peers as being relationally aggressive did in fact demonstrate more attention shifting and free recall, but only for the videos showing relational aggression. Crick (1996) found in a longitudinal study of the influence of overt aggression, relational aggression and prosocial behaviour on the future social adjustment in nine to twelve year olds that like overt aggression, relationally aggressive and prosocial behaviour could in fact predict future social adjustment due to

schemas being relatively stable over time.

Ogelman and Seven (2012) directed their focus away from aggressive behaviour in their study of social competence and peer relationships. Sixty 6 year old children were presented with eleven pictures in relation to provocation, peer group entry, social expectations, and response to failure. In conjunction with the pictures, children were also asked questions that measured how accurate their perception of a scenario was, their understandings of hostility, and the number of responses generated, the content of their response decision, (e.g. aggressive or passive and solution based) and the behaviour selected from the response decision. It was found that advanced accuracy or competence in every stage of SIP that was examined was positively related to the variables that measured social competence and peer relations (from the teacher ratings). Significant negative relationships were attained between more competent encoding, interpretation, and response decisions, and teacher rated measures of both reactive and proactive aggression. Additionally, social competence and peer relations were predicted by three of the five SIP measures (encoding, interpretation and response generation).

In summary, researchers have explored the use of the SIP model in a variety of ways, to further develop our understanding of how children process social information in a variety of contexts. The association between SIP steps and other variables relating to situational context, emotion, type of aggression, relational context, and schemas, as well as the range of methods used to measure these, highlights the significance as well as the complexity involved in employing the SIP model in research. Overall, however, there seems to be minimal use of emotion measures when trying to assess the influence of emotion on SIP, which is important to address.

Emotion and Social Information Processing

As mentioned above, in their review of the literature Crick and Dodge (1994) queried the role of emotion as being a relatively neglected aspect of social information processing. The distinction between the two concepts of emotion and social information processing had been argued by other theorists (Asher, Hymel, and Renshaw, 1984; Asher and Wheeler, 1985; Cassidy and Asher, 1992). However, Crick and Dodge (1994) noted that within the reformulated model, the role of emotions is an integral part of each social information processing step.

One definition of emotion is a complex state of feeling that results in physical and psychological changes that then influence thought and behaviour (Mauss and Robinson, 2009). Emotion is conceptualized to be experiential, physiological, and behavioural responses are personally meaningful to stimuli (Fujiki, Brinton and Clarke, 2002; Lindebaum and Jordan, 2012; Mauss and Robinson, 2009; Mayer and Caruso, 2008). In SIP research there are several different perspectives found, these include emotionality, emotion regulation and emotion knowledge. Emotionality refers to individual differences in the tendency to experience frequent and intense emotions and is associated with a range of psychological phenomena, including temperament, personality, mood, and motivation (Lindebaum and Jordan, 2012).

Recent studies have found that both emotion knowledge and emotion regulation are predictive of reactive and proactive aggression (Caprara, et al., 2001; Crick, 1996; Darin and Sharon, 2012). Eisenberg and Spinrad (2004) defined emotion regulation (or emotion-related regulation) as

> 'the process of initiating, avoiding, inhibiting, maintaining, or modulation the occurrence, form, intensity, or duration of internal feeling states, emotion-related physiological, attentional processes, motivational states, and/or the behavioural concomitants of emotion in the service of accomplishing affect-related biological or social adaptation or achieving individual goals' (p. 338).

Emotion knowledge is a term used by researchers to denote situational understanding of emotions (Denham, 1986; Denham et al., 2003; Denham, McKinley, Couchoud, and Holt, 1990; and Smith, 2001). According to this perspective, emotion knowledge contributes to children's overall social competence because it is associated with positive peer status and prosocial reactions to their peers' and adults' emotions. Thus, children who apply better emotion knowledge in emotionally charged situations have an advantage in peer interaction. Researchers conclude that a lack of emotion knowledge can put a preschooler at risk for aggression (Denham, Blair, Schmidt, and DeMulder, 2002).Denham, et al., (2013), used a pictorial forced-choice measure whereby the pictures depicted clear transgressions, and 298 four year old children were asked how they would feel (with four emotion options; happy, sad, angry and just okay), then what they would do (with four behaviour response choices; competent, aggressive, crying and passive). The most common responses were sad and angry emotions, and competent and passive behaviours. Sad emotions were linked to competent behaviour choices, and angry emotions with aggressive behaviour choices.

Crick and Dodge (1994), suggested that emotions are an integral part of SIP, and gave examples of how emotion would potentially interact with cognition in each step of the proposed model. At Step 1(encoding of cues), emotional arousal indicated by an increase in heart rate, could serve as an internal unconscious cue that must be encoded along with external social variables. At Step 2 (interpretation), a child's interpretation of a particular situation might be influenced by their emotions. For example, negative feelings such as fear or anxiety experienced when meeting someone for the first time could lead to an initial degree of suspicion or intimidation. At Step 3 (goal clarification), emotions may inhibit or enhance a child's motivation to communicate or pursue particular goals. For example, feelings of anger toward a peer provocateur might serve as the impetus for a retaliatory goal, or feelings of anxiety might lead to

the generation of an avoidant goal to remove oneself from the anxiety-provoking stimulus. At Step 4 (response access), accessing particular behaviours may lead to changes in a child's emotional state. For example, accessing the response 'hit him' might result in feelings of panic or anxiety for a child who is being mistreated by a peer. Equally, emotions may influence the types of responses that children access in fearful situations, such as running away, or getting help from an adult. Finally, at Step 5 (response decision), predicted emotional reactions to one's behaviour may serve as outcome expectations, and these expectations may be used to evaluate accessed responses. For example, expecting confrontational behaviour to result in an angry response from a teacher may result in a sense of relief when the response is conciliatory instead.

In a study by Helmsen, Koglin and Petermann (2012), 193 German preschool children aged three to five years old were tested to examine the mediating role of SIP between emotion regulation and aggressive behaviour. Line drawings of hypothetical vignettes and questions relating to interpretation (Step 1), response generation (Step 4) and response decision (Step 5) were used as the measures. Results showed that there were no significant gender differences in the patterns of correlations, thus analyses were conducted on the sample as a whole. Findings revealed that the relation between maladaptive emotion regulation and aggression was direct and not mediated by SIP biases (i.e., aggressive response generation, aggressive response evaluation and decision). SIP was however found to be associated with aspects of emotion, with children who demonstrated higher maladaptive emotion regulation generating and selecting more aggressive responses and more positively evaluation outcomes of aggressive responses. The study by Helmsen et al., (2012) was unique, in their use of both emotion understanding and emotion regulation in relation to behaviour in

preschool aged children and also in its attempts to integrate emotion into the SIP interview process.

Goal clarification (Step 3) is referred to by Crick and Dodge as being "focused arousal states that direct people towards particular goals." (p. 87). The link between goals and emotion has been further developed by Lazarus (1991), who defined emotions as "cognitive-motivational-relational configurations" (p. 46). Lazarus (1991) refers to his theory as a 'cognitive-motivational-relational system of explanation' due to his idea that emotions involve appraisals of the situation and of the individual's relationships with others, as well as attempts to cope with them. The central idea of the theory is the concept of appraisal, which refers to a decision-making process that weighs the personal harms and benefits existing in each person-environment interaction. Emotions in this perspective act as discrete categories, each of which can be placed on a dimension from weak to strong. It recognizes that several emotions can occur at the same time because of the multiple motivations and goals (Step 3, goal clarification in the SIP) involved in any particular encounter (Lazarus, 1991).

Furthermore, Gifford-Smith and Rabiner (2004) saw goal clarification to be influenced by affect regulation, whereby emotions are hypothesized to "enhance or inhibit a child's motivation to formulate or pursue particular goals" (p. 69). It is important to note that since this step has been introduced into the reformulated SIP model, it has rarely been utilized in research. Goal clarification was suggested by Crick and Dodge (1994) as being essentially connected to emotional arousal, yet this lack of integration could well have contributed to the neglect in both areas. Dodge, et al., (2002) attempted to include the concept of goal clarification (labelled 'goal setting/orientation') in their study using early primary school aged children. The authors discussed how difficulties in understanding emotion, can lead to failure in

adapting social goals, which is a contributing factor towards predicting reactive and proactive aggressive behaviour.

Many studies seem to focus on particular aspects of SIP, which generally do not include the goal clarification step (e.g. Batum and Yagmurlu, 2007; Calvete and Orue, 2012; Helmsen, et al., 2012; Horsley, et al., 2010; Meece and Mize, 2010; Nummenmaa, Peets, and Salmivalli, 2008; Peets, Hodges, and Salmivalli, 2011; Ziv, 2013). Challenges in assessing goal clarification could be a possible reason for this, but it is also worthy to note that relatively little research has been conducted from an integrative perspective on social information processing and emotion (de Castro, 2010).

When studies modify and incorporate aspects of emotion alongside SIP, the focus is often on emotional expectancies. For example, Lemerise and Arsenio (2000) identified only a few attempts that have been made to integrate the two traditions of research related to SIP and emotionality, regulation and children's social competence. In light of that, they reviewed and interpreted social-cognitive and emotion processes to children's social competence through an integrated model of emotion processes and cognition in SIP, stating that integration of emotion and social information processing would increase the explanatory power of the SIP model. They noted that emotion understanding concepts (such as emotion recognition and emotion expectations) as well as contextual factors (affective nature of the relationship and affective cues given from the peer) sat within the SIP steps, but other aspects of emotion such as emotionality or temperament, mood, and emotion regulation were also incorporated as background processes to the SIP steps. Lemerise and Arsenio (2000) indicated that when emotion regulation is low and emotionality is high, there is a higher possibility for behaviour problems. The question must then be asked that if this is true, what is the role of SIP in this association between emotion processing and behaviour? Lemerise

and Arsenio's integrated model (2000) proposed that SIP is in fact a mediator between emotion and behaviour, and included a possibility for pre-emptive processing, although not much detail was given as to how this process would occur.

Including emotion processing variables to the already existing SIPI-P could pose some potential issues with the nature of verbal responses attained. Morgan et al., (2010) found that the older children, in a group of 3 to 6 year olds, were associated with improved ability in naming basic emotional expressions, matching emotional expressions with labels of basic and complex emotions, and in matching expressions with situations and causes.

Although Crick and Dodge (1994) insisted that emotions held a level of importance for each SIP step, they admit that the SIP model as a whole does not sufficiently account for emotions. Lemerise and Arsenio (2000) predicted that the inclusion of emotion processes in Crick and Dodge's SIP model would lead a fuller understanding of children's social behaviour. It has been theorized that emotion and SIP can be integrated from within a developmental perspective in future research, and de Castro (2010) comments that in order to encourage more research in this area where there is a clear deficit, we need to find a "parsimonious" way of integrating emotion into the SIP model.

Developmental Perspective of Social Information Processing and Emotion

De Castro (2010) argues that the present SIP models do not explicitly specify how SIP develops over time. It is clear however that hypotheses can be formulated and tested in regards to considering the contrast between the more reflective and traditional aspects commonly used in assessing information processing, and emotionally driven fast and automatic processing (de Castro, 2010). A provisional developmental model of SIP and emotion was put forth by de Castro (2010), which suggested that the presence

of strong negative emotionality in children, as well as limited cognitive capacities, and/or limited scaffolding of social experiences can restrict the reflective processes that are a fundamental part of the social information processing model.

Dual processing theories of cognition (a cognitive psychology theory that explains the different levels of information processing in individuals (Morrison, Burnham and Morrison, (2015)), attempt to account for the combination of fast automatic emotional processing with primary appraisal, and secondly the reflective and cognitive control processing involving secondary representation (Arsenio, Adams and Gold, 2009; Caprara, et al., 2001; Crick, 1996; Darin and Sharon, 2012; Shields and Cicchetti, 1998). De Castro (2010) proposes that dual processing can occur in social situations, with emotional processing initially occurring, where basic cues are encoded and these potentially activate or restrict emotional action tendencies. These cues may then be reviewed with reflective processing (connected to personal concerns) and additionally can be later reviewed (including the interpretation of intent and the emotional state of others), leading to a response of enactment if it is positively evaluated, or the generation of another response. Action tendencies are described by de Castro (2010), as being a specific drive to perform a specific reaction. Lazarus (1991), in his theory of emotion, suggests that action tendencies flow from motivation, beliefs and appraisal of significance, and result in physiological changes that cause emotions to become "hot" (p. 994). A person is less likely to engage in further cognitive processing if the emotional response is high, and emotional action tendencies are activated (de Castro, 2010).

De Castro (2010) proposes that SIP is fundamental in the early developmental stages, and increases in complexity over time, while aggressive behaviours are more prominent and decrease complexity accordingly. In recognition that aggression is normative at a young age (de Castro, 2010; Meece and Mize, 2010), it is suggested that

a developmental model would benefit from examining how SIP changes to make children less aggressive as they get older rather than more aggressive, as is more commonly studied (de Castro, 2010). De Castro (2010) highlights that our perspective on SIP development should be re-focused on how competency improves. For example, rather than studying the distortions of children with hostile aggression problems, we should assess how children learn to perceive benign intent and how they respond to that.

As mentioned previously, reactive aggression and proactive aggression have previously been recognized as being linked to early and late stages of SIP processing (Arsenio, Adams and Gold, 2009). Within de Castro's (2010) developmental model of SIP and emotion, reactive aggression is characterised by lower levels of emotional control which results in a person becoming stuck in the emotional processing (early) phase of the SIP model, with emotional action tendencies being activated. On the other hand, proactive aggression is characterised by atypical reflective processing, more likely to occur in the later phases of the SIP model. The atypical processing has potential for perceptions of outcomes being distorted, leading to increased likelihood of a more planned out, proactively aggressive response.

Saarni (1999) reported from a social constructivist's viewpoint as to how children's normative developmental history affects emotional competence. It was described that we learn to give meaning to our emotional experiences within varying contexts via our social exposure to emotion knowledge and our cognitive developmental capacities. In this sense, a social-constructivist approach to emotion is highly individualized. Children's emotional experience is dependent on exposure to certain contexts, unique social history, and current cognitive developmental functioning. Saarni (1999) reported that young children learn to regulate their expressive emotional behavioural displays to differing social scenarios with increasing

cognitive complexity and socialisation. Not only do children respond to the situations they are in and experience some resulting emotion they also begin to assess the relational setting surrounding the emotion-provoking situation and unconsciously screen their expressive behaviour accordingly. This increasingly methodical examining of emotional displays is accomplished by the child's gradual learning of the display rules (Harter, 2012; Saarni, 1979; Saarni, 1999).

It is clear that general research on SIP with young children from a normative population is severely under developed, which has caused a deficit of past studies. The role of SIP in terms of emotion and behaviour is complex, incorporating concepts of emotionality, emotion understanding and emotion regulation. This provides a good foundation as to why further exploration into the development of SIP, in conjunction with emotion is necessary.

Social Information Processing Research with Early Childhood Children

Although understudied, it is important to note that the preschool age range is crucial in the development of social cognition. Carpenter, Pennington and Rogers (2002) discuss the many developmental changes that occur during infancy, before starting kindergarten, and the ways in which these changes facilitate the development of social cognition during early childhood years. The key concerns in SIP research with this age group will be considered, through looking at an overview of findings from previous social information processing research within this age group.

Meece and Mize (2010) employed video recorded hypothetical scenarios to study SIP in a community-based sample of 128children aged three to six years. Video-vignettes have been previously used in many studies for older children using real actors (Dodge and Price, 1994; Keil and Price, 2009) or an animated format (Horsley, et al., 2010). Due to the large age range, and therefore sizable differences in developmental

stages, Meece and Mize (2010) took particular care in ensuring that the video-vignettes used were depicting children of similar age, in familiar preschool settings, using common materials and common social themes. The use of puppets and props to prompt the re-enactment of responses was also used.

Results for gender differences were worthy to note. Cue encoding for girls only, was positively associated with teacher ratings of competence in the partial correlations controlling for receptive vocabulary. Additionally, girls who tended to view the actions of others as being hostile or mean were viewed by teachers and classmates as being less competent with peers than were girls who viewed the intentions of others as more benign. Surprisingly, boys who made more hostile attributions were rated higher in peer competence by teachers than were other boys, and this association also remained significant when age and receptive vocabulary were controlled. It was unexpected that associations between hostile attributions and aggression would be significant for girls but not for boys in this sample. Further results indicated that both hostile attributions and response generation made significant independent contributions to the prediction of teacher-rated competence and aggression even when children's age, sex and receptive vocabulary were controlled.

Katsurada and Sugawara (1998) used familiar and concrete stimulus materials, including videotaped vignettes specifically designed for preschool-aged children with eighteen scenarios depicting common social interactions among preschoolers, such as playing with puzzles, building with blocks, and playing at the sandbox. The stimuli allowed preschool children to judge between intentional and unintentional actions. The results indicated that hostile/aggressive preschoolers were more likely than their less aggressive peers to attribute a hostile bias to another person's actions (Ziv, 2012).As mentioned above, attempts to provide concrete and familiar material for preschool aged children as well as the requirements for balancing the race and/or gender roles

within the roles of the protagonist and victim within the video-vignettes (Katsurada and Sugawara, 1998; Meece and Mize, 2010) makes the process of assessing preschool aged children time consuming and costly (Crick and Dodge, 1994).

Ziv and Sorongon (2011) developed the Social Information Processing Interview – Preschool (SIPI-P) around the already developed measure called the Social Information Processing Interview, constructed by Dodge and Price (1994). It was a reliable tool that was convenient and efficient, and could be used with children from diverse demographic populations. The SIPI-P followed the same multistep framework of the SIP model, incorporating questions related to encoding, interpretation, response generation, and response evaluation on the assumption that each step could independently be associated with individual differences and should therefore be measured separately. The interview was based on a storybook format (a familiar and concrete stimulus material) that included stories relating to social situations with themes that were pertinent to preschool age children, such as joining in playing with playdough or having someone change a television channel that the character was watching. The SIPI-P depicts a series of four vignettes in which a protagonist is either rejected by two other peers (in the peer rejection vignette) or provoked by another peer (in the peer provocation vignette). The peers' intent is portrayed as either ambiguous or non-hostile.

The SIPI-P was used in Ziv and Sorongon's (2011) study of 196 preschool children aged four to five years old from a metropolitan area, to relate SIP to socio-demographic risk and problem behaviour. Results show that there were no significant gender differences. Further findings regarding response evaluation suggested that specific measures of social information processing can effectively distinguish between preschoolers with different levels of problem behaviours in a community sample. It was also found that positive evaluations of aggressive responses alone were predicted

by parental measures of socio-demographic risk, predicting externalizing behaviours (aggression and hyperactivity) as measured by teacher ratings, and mediated the link between risk and aggressive behaviour but not hyperactive behaviour.

Ziv (2012) furthered his research by using the tool once again to investigate the links between exposure to violence, SIP, and problem behaviour. In a sample of 256 preschool children aged four to five years old, Ziv (2012) found that children exposed to violence at an earlier age (measured by parent/caregiver or grandparent reports) generated more aggressive responses, attributed more hostility and gave more positive evaluations of aggressive and inept responses at a later age, compared to those children that were reported to have not been exposed to violence or aggressive behaviour. Links between exposure to violence and problem behaviour were mediated through positive responses of aggression and inept responses of SIP. Both aggressive response generation and positive evaluation of an aggressive response slightly mediated the association between exposure to violence and externalizing behaviours, and only positive evaluation of an inept response slightly mediated the association between exposure to violence and internalizing behaviour.

The SIPI-P was intended to cover all of the SIP steps, however due to it being based on the SIPI, which does not cover the goal clarification step of the reformulated model; this step was also left out of the SIPI-P. This step as mentioned by Crick and Dodge is hypothesized to be strongly linked to emotion, and therefore should be an important consideration within SIP studies. It is evident from the previous studies, that past research using SIP measures seem to focus more on the distortion of children with aggressive problems rather than normal developing children and patterns of SIP responses to hypothetical scenarios that are ambiguous or conflict orientated. The current study however, extends the study of SIP in early childhood children by including prosocial scenarios in the SIPI-P measure.

SIP of Prosocial Situations

Crick and Dodge (1994) noted the need for studies showing how children process not only ambiguous and conflicting, but also prosocial scenarios and behaviours. The strongest support for the proposed SIP model concerns the relation between aggression and social information processing. In contrast, relatively less is known about the applicability of the proposed model for other important aspects of social behaviour, such as socially competent behaviour. Nelson and Crick (1999) reported that very few studies have indicated that children's SIP has links not just with aggressive behaviour but also with children's prosocial behaviour. However, the past work that has been done has not been longitudinal, so the causal direction between SIP and prosocial behaviour remains unclear.

Nelson and Crick (1999) applied prosocial behaviour to the SIP model through a peer-nomination measure of aggression and prosocial behaviour to 887 fourth to sixth grade children (9-12 years). Two 60-minute classroom sessions were set up over two months where the assessment of prosocial and aggressive behaviour was assessed through peer identification. Following this, two different hypothetical instruments (narratives containing various provocations) were read to the children to assess intent attributions, feelings of distress, goal preference, and response evaluation. These measures have shown favourable psychometric properties in past research, and provided results that demonstrated that the SIP model has predictive power not only for negative or aversive behaviours (e.g. aggression, as in past research) but also for prosocial behaviours. Findings from this study revealed no associations between gender and prosocial behaviour. However, prosocial behaviour was positively associated with non-hostile attribution. For example, the results of analyses for intent attributions generally showed that children with greater prosocial tendencies exhibited

a compassionate attribution bias in that they were significantly more likely than even their relatively average peers to perceive benign intent behind a provocation.

Darin and Sharon (2012) conducted a study where 96 fourth to sixth grade children (9-11 years)watched videos of same-aged peers engaging in either overtly or relationally aggressive behaviour, as well as videos depicting nonaggressive (prosocial) content. Results indicated that children that were observed using overt and/or relational aggression recalled less information in prosocial situations/stimuli than aggressive situations/stimuli. These results are consistent with Dodge and Newman's (1981) findings that both aggressive and nonaggressive boys recalled more hostile than positive behaviour from hypothetical vignettes. However, Darin and Sharon's study showed no gender differences.

A recent review by Unkelbach (2012) examined advantages of positive information in SIP. Positive information processing and positive scenarios were discussed as being processed faster than negative information. A possible explanation for this difference is that positive words might be more frequent and more prevalent in the environment. Therefore, people might have encountered positive words more frequently compared to negative words. As repetition facilitates processing positive words are classified faster. It is clear that the small body of research which attempts to link SIP and prosocial situations/behaviour has been centred around children's aggression and hostile attribution intent. To make valid conclusions as to how children interpret and respond to prosocial stimuli, future studies need to move away from the focus of problem behaviour and redirect their research to how normative populations of early childhood children respond to prosocial scenarios within the SIPI-P.

Summary and Present Study

Despite the deficiency of past research examining SIP patterns in early childhood, a recent increased interest, motivated in part by the need for better measurement tools, has fostered better research in this area. The majority of previous studies have focused on the distortions of aggressive children from clinical populations. The current study however, uses a community-based sample of early childhood children to assess patterns of SIP and emotion processing. The neglect of emotion in studying SIP also seems associated with a neglect of the added step of goal clarification (in Crick and Dodge's reformulated model) as it heavily relies on the idea of arousal and regulation, which Crick and Dodge believe have clear links with emotion (Crick and Dodge, 1994).The storybook framework of the SIPI-P seems to provide a good basis for incorporating emotional processing alongside the social information processing.

It has been previously noted that past studies when assessing SIP in early childhood children have directed their focus to ambiguous and aggressive scenarios, however, for a full picture of SIP, it is important to assess and consider how children process prosocial behaviours. Nelson and Crick (1999) applied prosocial behaviour to the SIP model and found that social information processing patterns did not predict prosocial acts in young children. In contrast, Yagmurlu (2014) investigated prosocial behaviour between theory of mind and SIP and found that SIP patterns were associated with prosocial behaviours in addition to significant gender differences. Nevertheless, there is very little information about the developmental timing of understanding prosocial, versus aggressive and ambiguous social situations. This is partly due to the fact that no studies have explicitly incorporated prosocial scenarios into a SIP measurement.

In summary, the overall purpose of the present study is to investigate the feasibility of integrating aspects of emotion processing into the SIPI-P interview in addition to adding two prosocial hypothetical stories. More specifically, the aims of the current study are:

1) To explore the utility of combining social and emotion information processing in the SIPI-P.

2) To pilot test an extended version of the SIPI-P that includes prosocial hypothetical scenarios alongside the existing social scenarios addressing conflict and ambiguous situations.

3) To investigate gender differences in young children's social and emotional information processing of hypothetical prosocial, ambiguous and conflict vignettes.

METHOD

Participants

Children were recruited from local Christchurch Kidsfirst Kindergartens in New Zealand, to participate in this study. A total of 50 children fully participated (26 males, 24 females) who ranged in age from 41 to 61 months of age (*M*=52.38 months; *SD*= 5.21). Participants identified with a number of different ethnicities, however New Zealand European was the most prevalent (64%; n=32). Other ethnicities in order of prevalence included, Chinese (14%; n=7), Maori (4%; n=2), Samoan (4%; n=2), Australian (2%; n=1), Afghan (2%; n=1), Tongan (2%; n=1), Malay (2%; n=1), Israeli (2%; n=1), South African (2%; n=1), and Middle Eastern (2%; n=1).

Procedure

Ethical Review and Recruitment of Participants

The University of Canterbury Educational Research Humans Ethics Committee reviewed and approved this study (*see Appendix A*) prior to recruiting participants. Further informed verbal consent was obtained through the Kidsfirst Kindergartens head office, who then referred me to the lead teachers at various local Kidsfirst Kindergartens who also reviewed the study (*see Appendix B*).

Eleven Kidsfirst Kindergartens agreed to take part in this study. Table 1 below, represents how participant recruitment varied between the 11 kindergartens. Each kindergarten represented diverse neighbourhoods, which is indicative through their differing decile scores, and were each from a different suburb within Christchurch. It was clear through looking at Table 1 that more participants were recruited from kindergartens that had a higher decile rating, than those kindergartens on the lower end of the decile ratings.

Table 1: *Participant Recruitment*

Kindergarten Suburb	Decile Rating	Number of Participants
Wainoni	1	2
Phillipstown	2	1
Waltham	3	2
Upper Riccarton	3	4
Hillmorton	5	5
Opawa	5	1
Hoon Hay	7	2
Riccarton	8	7
Avonhead	9	4
Ilam	9	18
Cashmere	10	4

Forms were either sent home with children, given straight to parents/caregivers, or left under the community notice board for parents/caregivers to take at their own will (*see Appendix C*). The initial inclusion criterion for this study was that children needed to be at least four years of age. However, a few three year olds who were close to their fourth birthday were allowed to participate based on their teacher's recommendation, parental consent and the child's enthusiasm.

After approval by each local kindergarten, 75 information letters and consent forms were received by parents. Over a two-month period, 50 consent forms were signed by a parent or caregiver and were returned to the head teacher of their local kindergarten. All children whose parents provided consent were also asked to assent to their participations after a brief overview of the activities when first meeting with the

researcher. None of the 50 children refused to take part in the study. Parents were also given the opportunity to attend their child's interview if they were interested. Of the 50 participants, 9 parents chose this option; however, 3 of the 9 parents pulled out on the day of their interviews due to other commitments, and consented to the interview being conducted without their presence.

Any potential discomfort that was associated with being interviewed by a stranger was eased through a portion of time at the beginning of the interview used to establish rapport through playing a game. In addition, to encourage open and honest responses, each child was informed that there were no right or wrong answers for the interview, and that the interviewer would "like to know what you really think". The assessment was relatively short, and was presented in an age appropriate storybook format, with each story read with enthusiasm.

It was expected, given the age group, and storybook format, that the children would find this task enjoyable and exciting, rather than demanding and strenuous, therefore it was paramount for the interviewer to be vigilant in detecting whether a child was getting tired, or restless and if necessary a break was provided. This occurred two times throughout the interview process, whereby the child went and got a drink and then returned to the interview setting to resume. The hypothetical stories that were part of the assessment measure (SIPI-P with modifications), covered themes that were identified as common in preschool and home life settings, (e.g., painting pictures, eating lunch, watching TV and playing with blocks and playdough).

Measures

Social Information Processing Interview – Preschool (Ziv and Sorongon, 2011)

The Social Information Processing Interview- Preschool (SIPI-P) was a modified version of the original Social Information Processing Interview (SIPI) (Crick and Dodge, 1994). The SIPI-P was designed to assess a younger age group of children, as well as to challenge the specific limitations in the already existing SIPI. First, to make it easier for shy and younger children with limited vocabulary to produce responses, the open-ended questions from the original SIPI were replaced with forced-choice questions in the SIPI-P. Second, to reduce the risk for race-specific bias, the SIPI-P designed the pictures in the storybook easel to depict cartoon bears instead of real children. Third, two identical versions of the storybook easel were developed for both boys and girls. The depiction of the main character was the visual difference between the two versions (e.g. the 'girl' bear wore a ribbon in her hair). Fourth, the SIPI-P was shortened considerably to account for short attention spans of preschoolers, while still maintaining the examination of the complete SIP model.

As mentioned above, the SIPI-P was developed in a storybook easel format and described four challenging social situations and themes familiar and appropriate for preschoolers. At the start of the interview there is a display of seven pictures of the cartoon bears face, wearing various facial expressions. The child being interviewed is asked to point to the bear that looks; 'angry', 'surprised', 'sad', 'happy' and 'afraid'. This is done to gage whether or not the child understands basic emotions, which will enable them to participate in the interview.

Every story within the interview depicts a series of scenarios in which a protagonist is either rejected by two peers (in the *peer rejection* scenario) or provoked by another peer (in the *peer provocation* scenario) the peers' intent is portrayed as either ambiguous or non-hostile. The four stories are as follows: (1) 'Blocks'- a non-

hostile rejection story where the protagonist is watching some children playing with blocks and asks if he can play with them. One of the children says that the teacher has only allowed two people to play in the block area at one time. (2) 'Playdough' – an ambiguous rejection story where the protagonist asks the other children if they can play with them, but no one answers. (3) 'Spilled Water'- an accidental provocation story where another child walks by the protagonist as they are eating their lunch and accidently spills their drink. And (4) 'Watching TV' – an ambiguous provocation story where the protagonist is watching TV and another child comes over and changes the channel without asking. A fifth story was included in the SIPI-P story book about Michael's/Lisa's reluctance to go to bed and ensuing conversation with their mother. This story was dropped from analyses in publications using the SIPI-P, and was also left out of the current study because of the addition of the prosocial stories.

The interview's structure, text, and questions are relatively the same for each of the four stories, with minor modifications for the specific aspects of the respective stories. After the interviewer uses the storybook easel to describe each basic scenario, the interviewer then asks the child whether the other child/children are 'mean' or 'not mean'. Next, the child is asked an open-ended question, 'What would you say or do if this happened to you?' To conclude each scenario, the interviewer presents three possible alternative endings for the story, competent (e.g. asking the children if they can play next), aggressive (e.g. kicking the blocks or other aggressive action), and inept (e.g. crying). The interviewer asks three questions related to each of the alternative endings to elicit children's evaluations of these alternative endings. These questions include: (1) Is that a good thing or a bad thing for Michael/Lisa to do/say? (2) If you did that do you think the other children would like you? (3) Do you think the other children would let/help you play/watch TV/clean up your drink if you did that?

Table 2: *Coding of Social and Emotion Processing Variables (Original and Revised)*

SIP Variable	Original Coding (with 4 stories)	Revised Coding (with 6 stories)
RECALL	Not used due to poor psychometric properties	0 = Don't Know 1 = Incorrect Recall 2 = Correct Recall **Possible range**: 0 to 38
HOSTILE ATTRIBUTION (*forced choice*)	0 = Benign 1 = Hostile	0 = Benign/Don't Know 1 = Hostile **Possible range**: 0 to 6
HOSTILE ATTRIBUTION (*open response*)	Not in original	-1 = Benign intentions 0 = Don't know/ambiguous intentions 1 = Hostile intentions **Possible range** = -2 to 2 (summed across similarly themed stories: prosocial, ambiguous, conflict)
RESPONSE GENERATION	0 = Aggressive/inept (non-competent) 1 = Competent	Same as original coding. Change in possible range. **Possible range**: 0 to 6
RESPONSE EVALUATION	0 = Negative evaluation 1 = Positive evaluation (3 questions per response type, 3 response types: competent/inept/aggressive in each story)	Same as original coding. Change in possible range. **Possible range:** 0 to 18 (summed across stories according to each response type: competent/ inept/aggressive)
Emotion Variable	**Original Coding**	**Revised Coding**
EMOTIONAL IDENTIFICATION	0 = Incorrect identification 1 = Correct identification (6 questions with pictures)	Same as original coding. **Possible range:** 0 to 6
EMOTIONAL INTENSITY	Not in original	0 = Don't know/neutral emotion 1 = A little 2 = A lot (summed across similarly themed stories: prosocial, ambiguous, conflict) **Possible range:** 0 to 4
EMOTION JUSTIFICATION	Not in original	0 = Don't know/illogical or unrelated 1 = Logical and related **Possible range:** 0 to 6

Emotion Variable	Original Coding	Revised Coding
EMOTION PERSPECTIVE TAKING *(Match)*	Not in original	0 = Don't know 1 = Action related to emotion match 2 = Appropriately matched emotion (3 response types per story) **Possible range:** 0 to 12 (summed across stories according to each response type: competent/ inept/aggressive)
EMOTION PERSPECTIVE TAKING *(Level)*	Not in original	0 = Illogical or unrelated 1 = Primary emotion 2 = Self-conscious emotion/awareness (3 response types per story) **Possible range:** 0 to 12 (summed across 3 response types: competent/ inept/aggressive)

Revised Social Information Processing Interview (see Appendix D)

As described above, the original SIPI-P used a children's storybook format, which is identified as a reputable method for use with preschoolers through the pictorial interview structure (Ponitz, et al., 2008; Helmsmen, et al., 2012). The original SIPI-P attempted to give a comprehensive overview of SIP patterns, however the stories only describe conflicting and ambiguous scenarios. The revised Social Information Processing Interview's main goal was to investigate the utility of integrating via the SIPI-P aspects of emotion processing and social information processing along with pilot testing the new addition of prosocial scenarios.

The four original stories within the SIPI-P (mentioned above), were all retained in the current study. This meant that there were two conflict stories, 'Blocks' and 'Watching TV' and two ambiguous stories 'Playdough' and 'Spilled water'. In light of the studies aim, two new prosocial stories were developed for the revised SIPI-P. To achieve this, two positive scenarios, along with three alternative endings for each story were decided upon which were aligned with the existing four stories in the SIPI-P, and were relatable to preschool children. The first story was named 'Painting a picture'. In

this scenario, a child is painting a picture while the protagonist walks over to them. The child then gives the protagonist their painting to keep. The three alternative endings generated for this story were (1) Accept the painting and say 'Thank you' (competent) (2) Walk away and not accept the painting (inept) (3) Take the painting and rip it up (aggressive). The second scenario was called 'Lunch Time'. In this scenario a child is eating their lunch and the protagonist walks over. The child then offers the protagonist their banana. The three alternative endings created for this story were (1) Accept the banana and say 'Thank you' (competent) (2) Walk away and not accept the banana (inept) (3) Take the drink instead without asking (aggressive).

Following the verbal development of the two new scenarios and their alternative endings, all of the picture slides were constructed using a computer software program called 'Paint X Light'. Selective pictures from the existing four scenarios in the original SIPI-P were screenshot and then opened in this software program 'Paint X Light'. These images were modified heavily to create the new prosocial scenarios; this required drawing new objects, changing facial expressions and the changing of hand and feet arrangements. It was additionally crucial to make sure that the new stories had the same characters and character features as the already existing four stories, so attention to detail was essential. Following the completion of the pictures for the two new scenarios, the interview text and questions were added to accompany each picture. This was kept similar to the existing four scenarios, with minor modifications for specific aspects of the new prosocial stories. The order of presentation for the three different types of stories was set to Painting a Picture (prosocial), Playdough (ambiguous), Spilled Water (ambiguous), Lunch Time (prosocial), Watching TV (conflict) and Playing with Blocks (conflict).The assessment of emotion processing was first piloted in a previous study (Dowling, 2014), and has been further extended in the present study which is described below.

Revised SIPI-P Coding Strategy

In this section, an explanation of the coding of the Social Information Processing Interview – Preschool version (SIPI-P; Ziv and Sorongon, 2011), along with the modifications that were made for the present study is provided in detail. Table 2 above provides a summary of how each of the variables assessed by this revised version of the SIPI-P were coded, and the coding changes that were made to the revised version from the original. The minor revisions were made in order to extend some of the SIP steps within the original interview format, challenge the integration of new prosocial scenarios, as well as to effectively collect data on both social information processing and emotion processing, while taking into consideration a preschool child's attention span.

Encoding – Recall. Encoding and recall assesses a child's ability to selectively attend to particular situational and internal cues, and then to encode those cues. While the original SIPI-P showed good psychometric properties during pilot testing, this was not the case for the open-ended encoding question "What happened in the story, from the beginning to the end?" (Ziv and Sorongon, 2011). Although this step was not utilised in studies by Ziv and colleagues (Ziv and Sorongon, 2011; Ziv, 2012; Ziv, 2013) due to poor psychometric properties it was decided that the current study would retain the question, as it may provide a good comparison point for determining links between recall/encoding and other SIP steps. It was decided however, due to the age of the participants, and the number of stories (therefore time constraints) that there was no free recall, and so every main point of the story had three prompting scenarios where the child could pick only one.

As there was no direction given by the original coding in regards to scoring the encoding question in the SIPI-P, a scoring system was created whereby correct recall

of each main point of the story with prompts was awarded a 2, incorrect recall of each story point with prompts was awarded a 1, and a denial of a main story point or an answer of 'don't know' with prompts given, was awarded a 0. Each story had a different number of main points, but the highest achievable score across the six stories was 38 with higher scores reflecting superior ability to recall main points in the story, with prompts. In the present study, the internal consistency reliability of the Recall variable was good (alpha= .76).

Interpretation – Hostile Attribution Score. Hostile attribution assesses a child's ability to interpret the situational or internal cues (assessed in encoding - recall) by utilizing processes such as accessing a personalized mental representation of situational cues stored in long term memory. Attributions were originally assessed in the SIPI-P with the question "Were the other kids mean or not mean?", and were coded as 0 for 'not mean' (benign) and 1 for 'mean' (hostile). These scores were summed over the four stories, giving a total out of 4. This item was retained in the same format and with the same coding for the present study and the variable was labelled *Hostile Attributions (forced choice)*. The only difference was that there were now six stories with the addition of the two prosocial vignettes. These scores were summed across the six stories, giving a total out of 6 with higher numbers indicating increased hostile attributions.

Ziv and Sorongon (2011) did not find any significant associations between hostile attributions and measures of behaviour, despite previous evidence to suggest a link, and believed that the wording of the question could possibly have had a priming effect towards hostility. Therefore, the present study added an extra variable, *Hostile Attributions (open response).* This variable attempted to gather more information about the nature of attributions that the forced choice question did not provide through

children's perceptions of intent via an open-ended question, "Why do you think the other child did that?" This was asked prior to the above hostile attribution (forced choice) question.

Due to the qualitative nature of this question, and also a note made by Ziv, Oppenheim and Sagi-Schwartz (2004) that responses can be considered ambiguous due to interpretation being both positive and negative, a coding system was developed to accommodate three types of responses given by children. A score of -1 was given for any response that indicated benign intentions, and a score of 1 was recorded for any response that conveyed any hostile intentions such as anger or intention to intentionally exclude, cause harm to, or annoy someone. In addition, a third category, coded as "0" for a 'don't know' was included and allocated to allow for any ambiguous responses. This coding system for the present study enabled inclusion of any response that indicated the child was confused by the question or where it was difficult for the researcher to determine whether any particular attribution was either negative or positive. For example, in a response where a child says that the other children didn't answer the protagonist because they were "being silly", it is difficult to determine whether the child would interpret "being silly" as mean or not. Some responses may also incorporate aspects of both benign and hostile attributions which could not be coded one way or another, such as a response where the child indicates that the children didn't answer because the protagonist was "a lot smaller than him/her" (benign) or "they didn't like him" (hostile).

These scores were totalled across the similarly themed stories (prosocial, ambiguous, conflict) to give a possible range of -2 to 2. Higher scores represented greater attributions of hostile intent, and were scored in the same direction as the original forced-choice attribution item, whereas a negative score indicated more benign attributions. Bivariate correlations across the three story themes showed that increased

hostile attributions in the prosocial story was associated with increased hostile attributions in the ambiguous story (r = .26; p = .07), but not with the conflict story (r = .00). Increased hostile attributions in the ambiguous story were moderately associated with increased hostile attributions in the conflict story (r = .40; p = .004).

Response Access –Response Generation Score. Response access and response generation assesses a child's ability to generate an appropriate social response to the initial hypothetical scenario. In the original SIPI-P format, this step was assessed through an open ended question "What would you say or do if this happened to you?" Ziv and Sorongon's original coding system for the SIPI-P (2011) categorised responses as competent, aggressive, and inept, with a competent response coded as 1, and aggressive, inept and 'don't know' responses coded as 0 (not competent). For the present study, this same method was used, the only difference being there were now six stories with the addition of the two prosocial vignettes. Thus, a total out of 6 was calculated across the six stories with higher scores indicating more competent responses across stories.

Response Evaluation Score. A response evaluation assesses a child's ability to evaluate the potential outcomes of three alternative endings to the story. This was measured through three closed questions relating to three alternative endings (competent, inept and aggressive). The questions were:

1) Was that a good or bad thing to say or do (referring to a character in the story)?
2) If you did that, do you think the other children would like you?
3) Do you think the other children would let you play if you did that?

In the SIPI-P (Ziv and Sorongon, 2011) the responses for this step were originally coded as 1 for a positive evaluation ("good" or "yes") or 0 for a negative evaluation ("bad", "no" or "don't know"). The score was then derived from the three questions, including the three response types (competent, inept and aggressive) across four stories (3x3x4), giving a range of 0 to 36.

In the present study, for the alternative endings that showed a competent response, positive evaluations (e.g., a 'Yes' response to, 'Would the other child like you?') were scored as 1 and negative evaluations scored as '0'. This was reversed for the inept and aggressive alternative endings. There were 3 questions across 3 alternative endings (competent, inept, aggressive), and scores were summed within each of the alternative endings and across the six stories (possible ranges = 0 to 18; alpha = .84 for competent, .73 for inept, and .69 for aggressive). Higher scores reflected better social information processing. The response evaluations for the competent alternative endings was negatively associated with the inept response evaluations (r = -.28; p = .05), but there was no association between competent and aggressive response evaluations (r = -.02; p = .86). In contrast, higher response evaluation scores for inept alternative endings was associated with increased scores for aggressive response evaluations (r =.48; p< .001).

Emotion Processing in the Revised SIPI-P

The assessment of emotion processing included in this study is based around evaluative aspects of emotion, including; expectations of emotional reaction, expected intensity of emotional reaction, the ability to rationalise why a particular emotion would be felt, and the ability to take the emotional perspective of another in regards to inept, aggressive, and competent behaviours directed at that person (see Table 2).

Some aspects of emotion (including a check for general emotion identification at the beginning) have been included in the SIPI-P but have not yet been utilised for research purposes. The SIPI-P was adapted to address the areas of emotion outlined above by modifying the format of the original emotion questions and adding a few customized questions to assess the following:

Emotion Identification. This item remained in identical format to the original SIPI-P, whereby six pictures depicting facial expressions for different emotions were presented to participants and asked to identify the picture that showed a specific emotional state (happy, sad, surprised, afraid and angry). This item was only used as a check to ensure participants had the basic understanding of different emotions that would allow them to answer later questions in the interview, and was easily completed by all children with all children accurately identifying four or five of the items. A "1" was coded for an accurate identification of the given emotion, while a "0" was coded for an incorrect identification of an emotion. These scores were summed to give a range of 0 to 6 with higher score representing a better ability to identify given primary emotions.

Emotion Intensity. After reading each hypothetical scenario, the child was asked how they would feel if that situation had happened to them. They were then asked to indicate the intensity of that emotion on a dichotomous scale (either "a little" or "a lot"). The level of intensity was coded with "1" for "a little", and "2" for "a lot". A "0" was allocated to those children who indicated a neutral emotion (by pointing at the neutral facial expression or saying something such as "doesn't care/mind" or "don't know") as this is indicative of low intensity. It was not possible to sum these scores across stories due to the poor internal consistency among the 6

questions across stories (alpha = .52, and corrected item-total correlations ranged from .16 to .39). There was some indication of positive associations within similarly themed stories for the ambiguous (r = .39, p = .01) and conflict (r = .23, p = .12) vignettes. Unfortunately, emotional intensity for the two prosocial stories was not correlated (r = .09, p = .53). Therefore, emotional intensity scores were summed across similarly themed stories (prosocial, ambiguous, conflict), giving a possible range of 0 to 4 for each measure, with higher scores indicative of greater emotional intensity.

Emotion Justification. The participating children were then asked an open-ended question about why they would feel the emotion they identified in response to the scenario. This attempted to draw information about a child's ability to rationalise their initial proposed emotional reaction. Responses were also coded as being either logical and connected to the scenario with a score of "1", or illogical and unrelated with a score of "0". A "don't know" response was also scored with a "0", as it suggested an inability to justify the emotional response. The scores for the six stories were totalled due to the correlated nature of children's responses across the three story types (rs ranged from .40 to .44; all ps < .01), giving a maximum score of 6, with higher scores indicative of an ability to give logical justifications for emotional expectations.

Emotion Perspective Taking. As mentioned above, children's evaluations of the three alternative endings (competent, inept and aggressive) to the initial social scenarios were measured through three closed questions:

1) Was that a good or bad thing to say or do (referring to a character in the story)?
2) If you did that, do you think the other children would like you?

3) Do you think the other children would let you play if you did that?

In order to also derive information on children's ability to take the perspective of another character, in regards to evaluating the emotional impact of an action, an extra question was asked after the above 3 questions above "How would the other child feel if Lisa/Michael did (indicated response)?" This single question was coded in two ways.

First, a code for *Emotion Perspective Taking – Match* indicated whether the child could anticipate a likely emotional reaction for each of the different types of responses (competent, inept, and aggressive) depicted in the stories. If the child identified an emotion that appropriately matched the response (e.g. a negative emotion such as fear or anger identified after a threat of being hit) it was coded with a "2". If they identified an inappropriately matched emotion, an illogical response or a "don't know" response it was coded as "0". An action or something that might suggest an emotion that might fit a scenario (such as "he would cry" suggesting sadness) or is related to an outcome of the protagonist's response (such as "they will help fix it" or "move over and let them play" suggesting a positive emotion that matches), but no clear emotion was directly given, was coded with a "1".

A coding strategy for judging *Emotion Perspective Taking – Level* assessed the depth of emotion processing by distinguishing between primary and secondary emotions. As described above, at the beginning of the interview, children were asked to identify primary emotions from a set of example pictures (happy, sad, surprised, afraid, angry and neutral/doesn't care). However, the example emotion pictures were not included when this question of how the other character in the story would feel after Michael's/Lisa's response. This was done to see what types of emotions children could identify on their own without prompting. Coding was structured so that a "don't know" or illogical/unrelated response was given a "0". A response that indicated one of the

"primary" emotions (as identified on the pictorial emotional responses sheet at the beginning of the interview), or a variation of one of them (such as "ok", "good", "bad" or "don't mind" instead of "don't care" or "grumpy" instead of "angry") was given a coding of "1". A response that reflected a child's use of self-conscious or more complex emotions (e.g. nervous, confused or indicative of feelings of remorse/guilt, such as saying "sorry", or "sad if she plays by herself", or suggestive of accommodation/reparative measures such as saying "I/they would say sorry for doing that" or "she could say 'I'll help you clean it up'") was given a score of "2". For each response type (competent, inept, and aggressive), there was a maximum score of 6 for each story.

The correlations between the emotion match and emotion level coding strategies were highly correlated across the six stories and within each alternative ending (competent, inept, and aggressive) (*r*s ranged from .40 to .90; all *p*s < .01). In addition, there was acceptable reliability for the emotion-match and emotion-level variables for the competent and aggressive alternative endings (alpha = .70 and .85, respectively). However the reliability for emotion perspective taking for the inept alternative endings was quite poor (alpha = .47) Nevertheless, a variable was created titled Emotion Perspective Taking summed across each of the competent, inept, and aggressive alternative endings (possible range = 0 to 24). Higher scores on emotion perspective taking for inept responses were associated with better emotion perspective taking for aggressive responses (r = .45; p = .001). However, there were no associations with the competent responses.

Demographics

General demographic information about every child (gender, age and ethnicity) was provided by their parents when they consented to their child participating in the

study. This information was transferred to SPSS version 20, where Females were coded with a '1' and Males were coded with a '2'. Parents reported the age of their child in the format of date/month/year. Therefore, the age of every child was calculated and coded to the nearest month to the date of their interview to work out the average age of the participants. The ethnicity of every child was additionally noted by every parent on the consent form. Out of the 50 participants, 11 different ethnicities were noted, but all children had English as their first language except for one. Due to the variety of ethnicities from distinct cultures other than New Zealand European, the only comparisons that could be made were to combine all other ethnicities including Maori into one minority group and compare their social and emotional processing scores against New Zealand European children.

The decile ratings for each participating Kidsfirst Kindergarten, was attained through an excel document retrieved on the "New Zealand Ministry of Education (2015)" website. The document listed every school in New Zealand, along with their current decile rating (1-10). There were no supporting documents that provided each kindergarten's specific decile rating; however, the primary schools in the same neighbourhood were used to assign the same decile ratings to the various kindergartens.

Data Analysis

The raw data was entered into Microsoft Excel and inspected for missing values and outliers (none were found), and then transferred to SPSS version 20 for descriptive and inferential analyses. As the main objective of this study was to examine children's social and emotional information processing across different types of hypothetical stories within the Revised SIPI-P, and to investigate possible gender differences in social and emotional information processing, the analysis relied heavily

on mean comparisons and employed multivariate and repeated measures analysis of covariance (MANCOVA and RMANCOVA respectively). The MANCOVA analysis was employed for those variables that were summed across all 6 of the SIPI-P stories (i.e., Recall, Hostile Attributions (forced choice), Emotion Identification and Emotion Justification). RMANCOVA were employed for those variables that were summed across similar types of stories (i.e., prosocial, ambiguous, and conflict) or across the different alternative endings for each story (i.e., competent, inept, and aggressive). These variables included Hostile Attribution (open response) and Emotion Intensity for the three different story conditions and Response Evaluation and Emotion Perspective Taking for the three alternative endings conditions. Finally, Pearson zero-order correlations (bivariate) were employed to examine the associations between social information processing variables and emotional information processing variables.

Preliminary analyses showed that both children's ages and decile ratings of children's kindergartens were correlated with some of the social and emotional processing variables of interest. Specifically, older children showed better emotion recognition (r = .36, p = .01), better evaluations in aggressive reactions (r = .25, p = .08), greater emotional intensity towards negative stories (r = .33, p = .02), and better emotional justification across stories (r = .35, p = .01). In like manner, children from kindergartens with higher decile ratings showed better overall recall for story details (r = .36, p = .01), lower hostile attributions (r = -.23, p = .10) but increased emotional intensity (r = .40, p = .004) for stories portraying conflict, and better alternative response evaluations (r = .37, p = .008) along with better emotional perspective taking for competent responses (r = .24, p = .09) in the alternative endings of stories. In light of these associations, children's ages and the decile ratings of children's kindergartens were entered as a covariate in each of the mean comparison analyses reported below.

Children's ages only featured as a significant variable in the MANCOVA featured in Table 3 below.

Due to the larger number of participants from the higher decile kindergartens, it was not possible to create dichotomous groups according to decile rating (e.g., a median split) and include kindergarten decile as a second factor in the mean comparisons. Such a division would have yielded a complex factorial arrangement (e.g., 3 stories X 2 genders X 2 decile ratings, in the repeated measures analyses) with very few participants in many of the marginal cells. Thus, for any analysis where there was a significant interaction between decile ratings and children's social or emotional information processing, these were displayed with graphs from supplementary repeated measures analysis of variance that only included a dichotomous coded factor for decile rating as the between group factor. To achieve adequate power, decile ratings were coded with '1' equal to decile ratings from 1 to 7 (n = 15), and '2' equal to decile ratings from 8 to 10 (n = 35). In these supplementary analyses, gender was *not* included as a factor in order to only portray the interaction between decile rating and social or emotional information processing.

The MANCOVA and RMANOVAs described above were repeated with ethnicity included as a between subjects factor. However, only 1 significant mean difference was identified out of all the analyses with no significant interactions. On average, New Zealand European children showed better emotion recognition compared to the Maori and other minority ethnic groups (combined; M difference = 0.96; F = 5.65 (1,48), p = .02). Ethnicity was not considered any further in the analyses reported below.

RESULTS

Qualitative Descriptive Analysis

The addition of the prosocial stories to the SIPI-P provided some interesting qualitative information that should be noted. For the majority of children, their answers for these two prosocial scenarios reflected attributions of the gesture as being 'nice' and 'kind' or because 'they are friends'. This suggests that the majority of children understood the prosocial scenarios and interpreted the gestures as acts of kindness with corresponding positive emotions. However, there was also a substantive minority of the children that seemed confused by the prosocial scenarios. For the first prosocial story, 'Painting a Picture', at least a quarter of the children interviewed, did not seem to understand the prosocial motivation behind giving someone else a gift that was originally theirs. These children believed that when the character offered their painting to Lisa/Michael, they were 'sad' or 'angry', and when Lisa/Michael received the painting, they would also be 'sad'. Similarly, for the second prosocial story, 'Lunch Time', 36% (n = 18) of the children indicated that the generous character was 'sad' or 'angry' when offering their banana to Lisa/Michael, and in turn 28% (n = 14), said that Lisa/Michael would feel 'sad' or 'angry' upon receiving the banana. A quarter of the sample also reported that they 'didn't want to eat someone else's lunch when they had their own', 'didn't like bananas', or were conforming to their kindergarten rules whereby you are 'not allowed to share food'. For both of these stories, it was evident that these children were reacting to the stories in concrete ways based upon the socialization of roles and rules in a kindergarten setting and this context may have influenced their social and emotional processing of the hypothetical vignettes.

In the ambiguous 'Playdough' story, children were asked why the other children did not answer Michael/Lisa when he/she asked to play. Twenty-seven (54%) children gave competent responses that ranged from 'too busy', 'too focused', and

‘didn’t hear him/her’ to ‘they don’t want to play with him/her’. Of the nine children (33%) who responded with ‘they didn’t want to play with him/her’, seven of these children (77%) then followed with an evaluation of such an attitude as ‘mean’. The majority of the whole sample identified that they personally would be ‘sad’ or ‘angry’ if the situation was happening to them. This was because they suggested the other children ‘wouldn’t let them play’, were ‘being mean’, or ‘wouldn’t share’. While the minority of the children seemed unsure how to respond to the current scenario so therefore answered with ‘don’t know’.

The second ambiguous story, ‘Spilled Water’, also produced a distinction between two types of responses. Forty-two percent (n = 21) of the sample said they would be ‘angry’ as they believed the water was spilled ‘on purpose’ and that they ‘now had nothing to drink’. These children were not so angry about the intention, but responded to the outcome, whereby their ‘food was now wet’ or the ‘table is wet around my food’. The rest of the children responded with statements that inferred the scenario was an accident, with 10 children mentioning that the child who spilled the water has to ‘say sorry’. Both of these stories indicated that the majority of children were confused with how to respond to the ambiguity of the stories, which in turn created a number of differing responses.

The two stories of conflicting scenarios generated the more aggressive responses from children. In the story ‘Watching TV’, 12% (n=6) of the children produced aggressive responses when they were asked what they would do if the same situation happened to them. Responses included, ‘shout at them’, ‘hit them’, ‘tackle them’ and ‘grab the remote back off them’. These children initially reported feeling ‘sad’ or ‘angry’ when the person changed the channel while they were watching. Surprisingly, nine children (girls, n=4 and boys, n=5) reported that they would feel ‘happy’ because they ‘didn’t care’ or they were under the impression that ‘the channel

would get changed straight back' to what they were watching again or 'to a better channel' which they will also enjoy.

The second conflict story, 'Blocks' also produced aggressive responses, however less than the 'Watching TV' story. When children were asked what they would do if the same situation happened to them, only 8% (n= 4) of the children included, 'hit you', 'knock down their tower', 'won't let you play with me' and 'kick it'. In this story, none of the children responded saying Michael/Lisa would be 'happy' after being told by the other characters that the teacher said that only 3 could play in the block area. Many of the children accurately interpreted that Michael/Lisa was not allowed to play because 'the teacher said', while others just thought the children were being 'mean' and/or 'didn't want to play with him/her'.

Across each of the three alternative endings in every story, 92% (n=46) of the children's qualitative responses were basic primary emotions with no complexity. In general, 84% (n=42) of the children could accurately match a primary emotion for the competent and aggressive alternative endings of each story. Responses included, 'good' or 'happy' for the competent alternative endings and 'bad' or 'sad' for the aggressive alternative endings. The inept alternative endings however seemed to confuse the children as to whether they endorsed a positive or negative response. The majority of children 74% (n=37), were either unsure of how to respond to the inept alternative endings, with 'don't know' responses, or tended to view them more positively with responses such as 'happy' or 'good'. The most surprising result was the responses gained from the inept alternative ending in the 'Playdough' story where 40% (n=20) of the children responded that the other children would be 'happy' if Michael/Lisa started crying. 12% (n=6) responded with 'don't know' to the same question. This tells us that over half of the children seemed unsure how to react to the

inept alternative ending for this particular story with some responses suggestive of the 'happy victimizer' phenomenon (Sokol, 2005).

Descriptive Statistics and Mean Comparisons

Table 3 below shows the raw descriptive statistics and results from two multivariate analyses of variance. The first analysis (left-hand columns) examined mean gender differences without any covariate control across the social information and emotion processing variables that were combined across all 6 hypothetical stories. The second analysis (right-hand columns with adjusted means and standard errors) examined these mean differences after controlling for children's age and the kindergarten decile rating.

At the beginning of the SIPI-P children identified emotional expressions and were tested on their memory for each story immediately after it was told. Table 3 shows that prior to controlling for the covariates; there were small significant or marginally significant differences across the boys and girls in their emotional identification, recall, and emotional justification. However, after controlling for age and kindergarten decile ratings, these differences were largely reduced and no longer significant. Both boys and girls did relatively well on identifying emotions; however, their recall for the key points of the story was relatively low, with a range between 7 and 19 out of a possible 38. There were hardly any differences between girls and boys hostile attribution scores and both groups were on average just below the middle of the scale. Similar to emotion identification, Table 3also shows that on average both boys and girls did well when justifying their emotions, with both groups above the midpoint of the scale. The initial moderate difference between the two groups was largely reduced after controlling for age and decile rating.

The covariates in the analyses were significantly associated with three of the variables. Kindergarten decile rating was significantly associated with children's recall ($F = 6.74$; $p = .01$), while children's age was significantly associated with emotion identification ($F = 4.94$; $p = .03$) and emotion justification ($F = 5.37$; $p = 02$). Thus, the gender differences were largely explained by the boys in the sample being slightly older and from kindergartens with a higher decile rating.

Table 3: *Descriptive statistics and gender comparisons across social information processing variables.*

Variable	**Range (min to max)**	**Mean (SD)**	***F; p***	**Adjusted Mean (SE)**	***F; p***
EMOTIONAL IDENTIFICATION					
Female Male	1.00 - 5.00	3.63 (1.50) 4.31 (1.12)	3.36; .07	3.76 (0.27) 4.19 (0.26)	1.25; .27
RECALL					
Female Male	7.00 - 19.00	15.33 (3.26) 17.00 (2.14)	4.63; .04	15.61 (0.55) 16.74 (0.52)	2.12; .15
HOSTILE ATTRIBUTIONS *(Forced Choice)*					
Female Male	.00 – 6.00	3.04 (1.99) 2.96 (1.82)	.02; .88	3.01 (0.41) 2.99 (0.39)	0.00; .98
EMOTION JUSTIFICATION *(Across Stories)*					
Female Male	.00 – 6.00	3.67 (1.93) 4.50 (1.42)	3.06; .09	3.87 (0.34) 4.31 (0.33)	0.80; .38

NOTE: *n* (Female) = 24, *n* (Male) = 26; *F* = multivariate analysis of variance

Figure 2 below shows the results of the first repeated measures analyses of variance for open response hostile attributions. These analyses tested the mean differences across gender and across story type (prosocial, ambiguous, and conflict) after controlling for kindergarten decile ratings. For both boys and girls, their overall levels of hostile attributions were quite low and below the mid-point of the range

(more benign than hostile). There was no main effect for gender nor the kindergarten decile ratings, but there was a significant difference across the three story types (F = 5.24 (2, 94), p = .007) that was qualified by an interaction between the types of stories and kindergarten decile ratings (F = 3.47 (2, 94), p = 0.03; see Figure 2 below). There was no interaction across stories and gender. Figure 2 shows a slight linear trend in hostile attributions for boys and a rather surprising slight curvilinear trend for hostile attributions in girls. Post-hoc comparisons across the three stories (combining gender) showed a significant difference between children's attributions toward prosocial stories (more benign) compared to the ambiguous stories and conflict stories (more hostile). Mean differences were -.38 (p = .05) and -.37 (p = .08), respectively with a relatively small effect size (Cohen's D = 0.23). There was no significant difference in hostile attributions across the ambiguous and conflict stories.

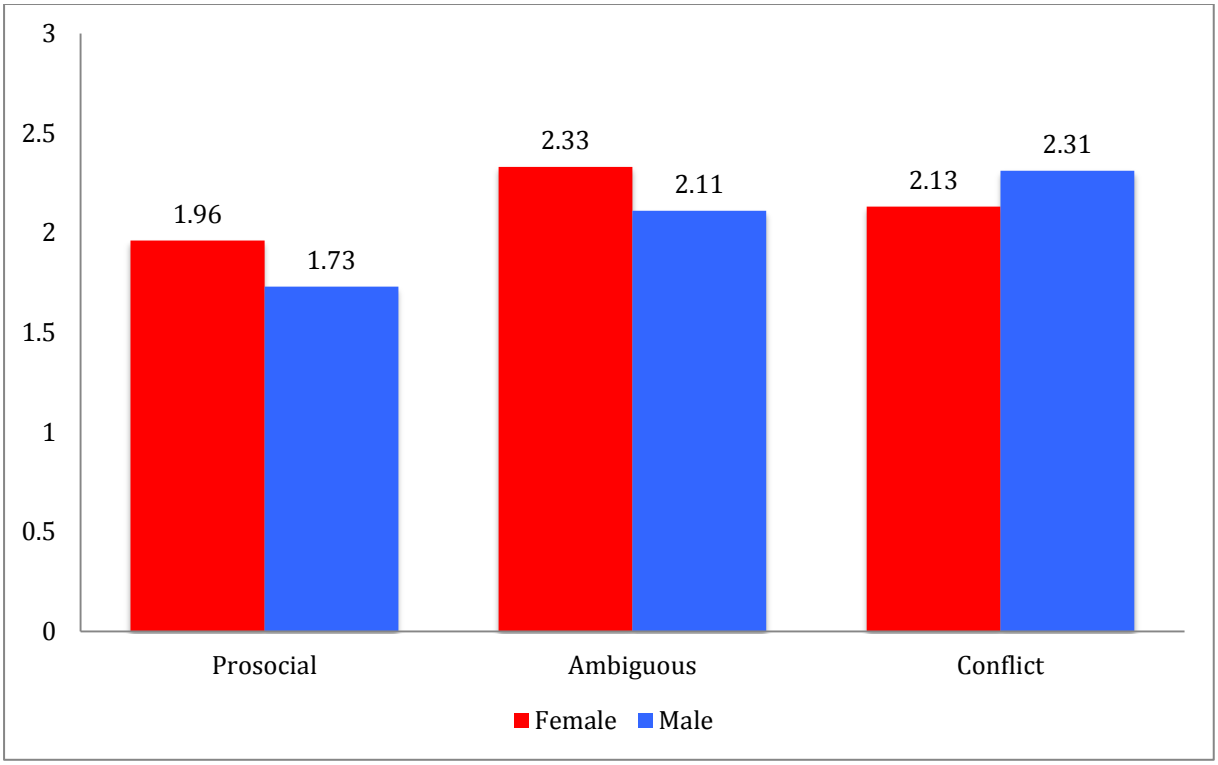


Figure 2: *Graph of mean scores for open response hostile attribution across gender and the three types of stories.*

Figure 3 below displays the significant interaction across the hostile attribution (open response) stories and kindergarten decile ratings. The graph shows a linear trend in increasingly hostile attributions for children from lower decile kindergartens, but a relatively flat pattern of hostile attributions for children from higher decile kindergartens.

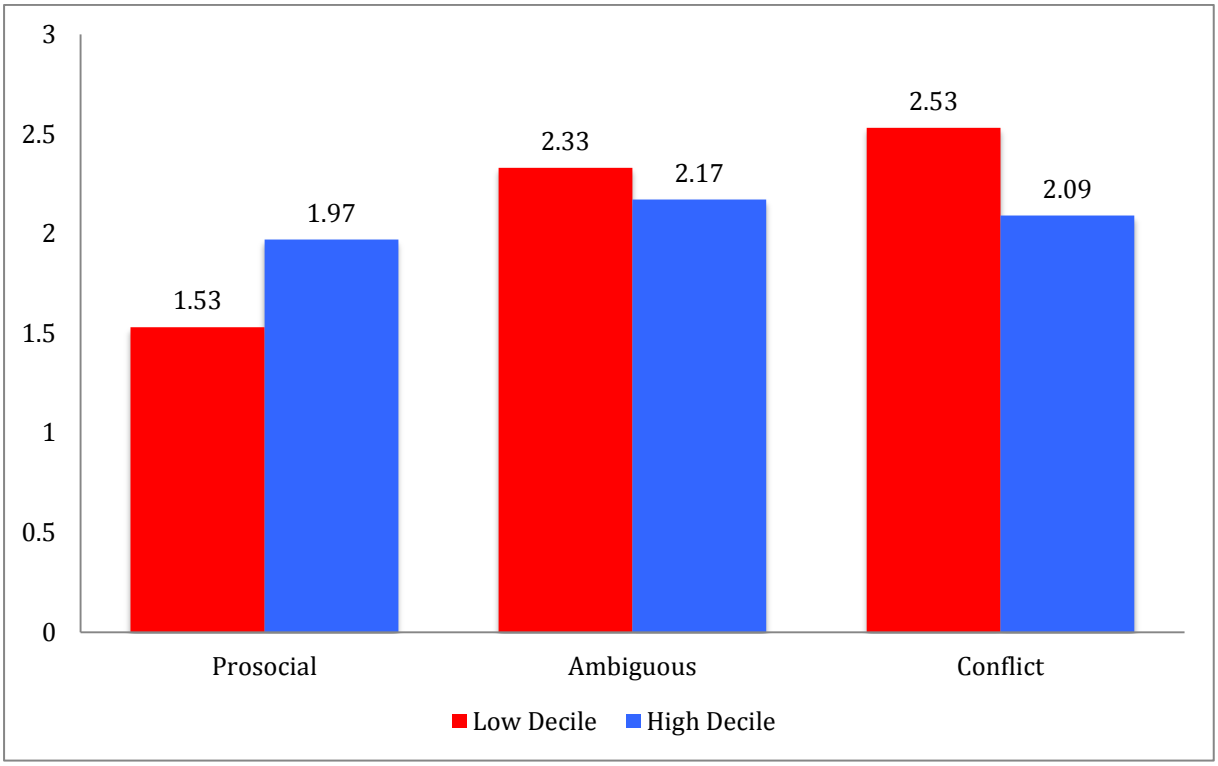


Figure 3: *Graph of mean scores for hostile attribution (open response) across kindergarten decile ratings and the three types of stories.*

Figure 4 below shows the results of a repeated measures ANCOVA, examining children's mean scores for emotional intensity across the three types of stories (prosocial, ambiguous and conflict) after controlling for kindergarten decile ratings. The main effect for gender and decile ratings between subjects was not significant, while there was a marginally significant main effect across the three types of stories types (F = 2.53 (2,94), p = .08). There was no interaction between kindergarten decile

ratings and story type; however, there was a marginally significant interaction between the story types and gender types ($F = 2.94$ (2, 94), $p = .06$).

The descriptive statistics suggest that both boys and girls found the stories to be relatively low in emotional intensity (mean scores were less than the midpoint across all three stories). Like Figure 2, Figure 4 shows a linear trend in emotional intensity for boys and a curvilinear trend for emotional intensity in girls. The curvilinear trend for girls is puzzling in that they judged less emotional intensity in the conflict stories compared to the ambiguous stories (the quadratic interaction effect was marginally significant, $F = 3.52$ (1,47), $p = .07$). The post-hoc comparisons across the three stories (combining gender) showed significant differences in children's ratings of emotional intensity across each of the stories (mean differences ranged from .23 to .49, all ps < .05). Children had a higher sense of emotional intensity when reading the ambiguous stories. Effect sizes ranged from small (ambiguous vs. conflict) to large (prosocial vs. ambiguous; Cohen's $D = 0.19$ to 0.94, respectively).

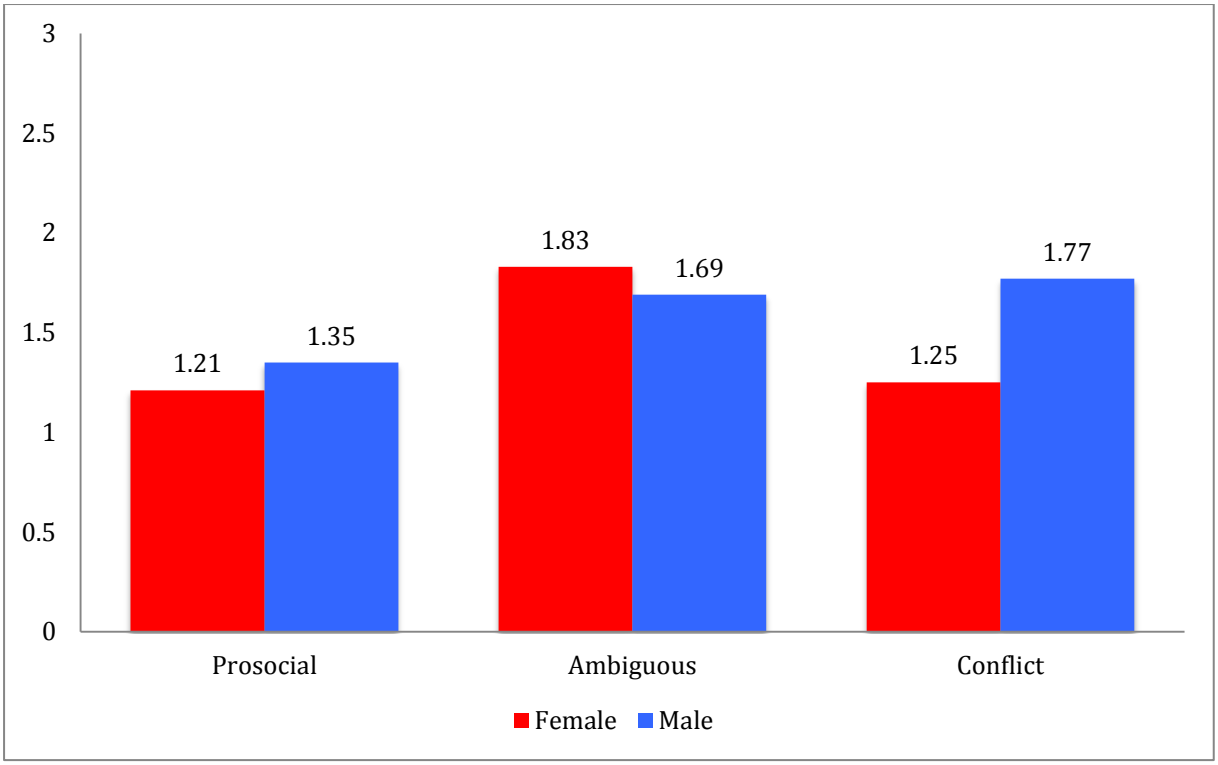


Figure 4: *Graph of mean scores for emotional intensity across the three types of stories.*

Figure 5 below shows the results of the next repeated measures analysis of covariance for children's evaluations of the three hypothetical alternative endings to each story. This analysis tested the mean differences across gender and across alternative endings (competent, inept and aggressive), controlling for kindergarten decile ratings. The descriptive statistics show that both boys and girls did relatively well in their evaluations of the alternative endings (scoring well above the mid-point on average). There was a significant between group difference for gender (F = 10.83 (1, 47), p = .002). As can be seen in Figure 5, boys scored higher for each type of response evaluation. There were no other significant main effects or interaction effects in this analysis.

Figure 5 below shows that both boys and girls had a curvilinear trend in their evaluations of the three response types. The post-hoc comparisons showed that

children were significantly better at evaluating the competent and aggressive responses compared to the inept responses (mean difference competent - inept = 1.66, *p*= .003, Cohen's D = 0.59; and mean difference aggressive – inept = 2.23, $p < .001$, Cohen's *D* = 0.80). While the difference between competent and aggressive evaluations was only marginally significant (mean difference = 0.57, $p = .09$, Cohen's *D* = 0.25). Thus, in spite of there being no main effect across story types, the post-hoc comparisons show moderate to large effect sizes with children's evaluations of inept responses poorer than their evaluations of competent or aggressive responses.

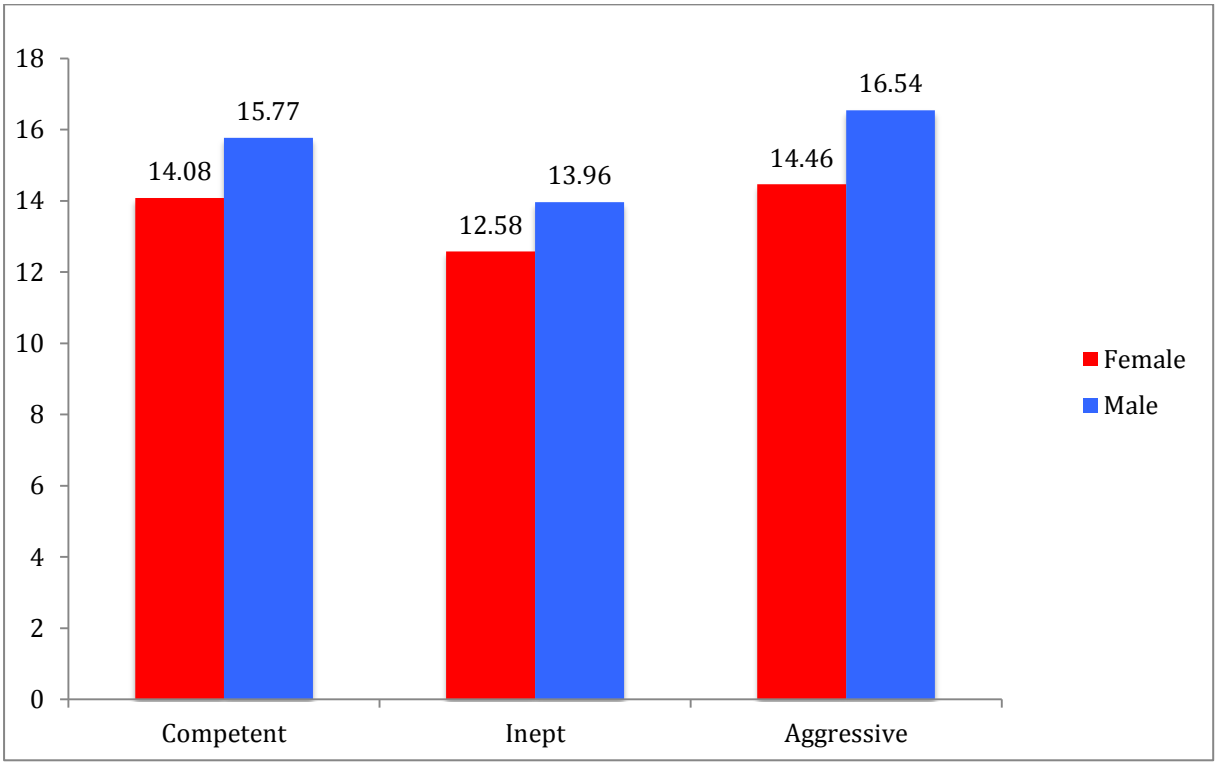


Figure 5: *Graph of mean scores for response evaluation across gender and the three types of alternative ending responses.*

Figure 6 below shows the results of the final repeated measures ANCOVA for children's ability to take the perspective of another's emotion as depicted in the three types of alternative endings in the stories (competent, inept, aggressive).There were no

main effects across gender or decile ratings. After controlling for kindergarten decile ratings, there was a marginally significant main effect across the three response types ($F = 2.90$, $p = .07$). There were also no significant interactions in this analysis.

Overall both boys and girls seemed to struggle with emotion perspective taking. The average competent and inept responses were well below the midpoint of the range (max possible = 36). The post-hoc comparisons showed children's emotional perspective taking was substantially better in the aggressive response condition compared to both the competent and inept responses (*M* difference = 3.79 and 4.87 respectively, both *p*s < .001; Cohen's *D* = 0.93 and 1.34 respectively). There were no significant differences between the competent and inept responses in emotion perspective taking.

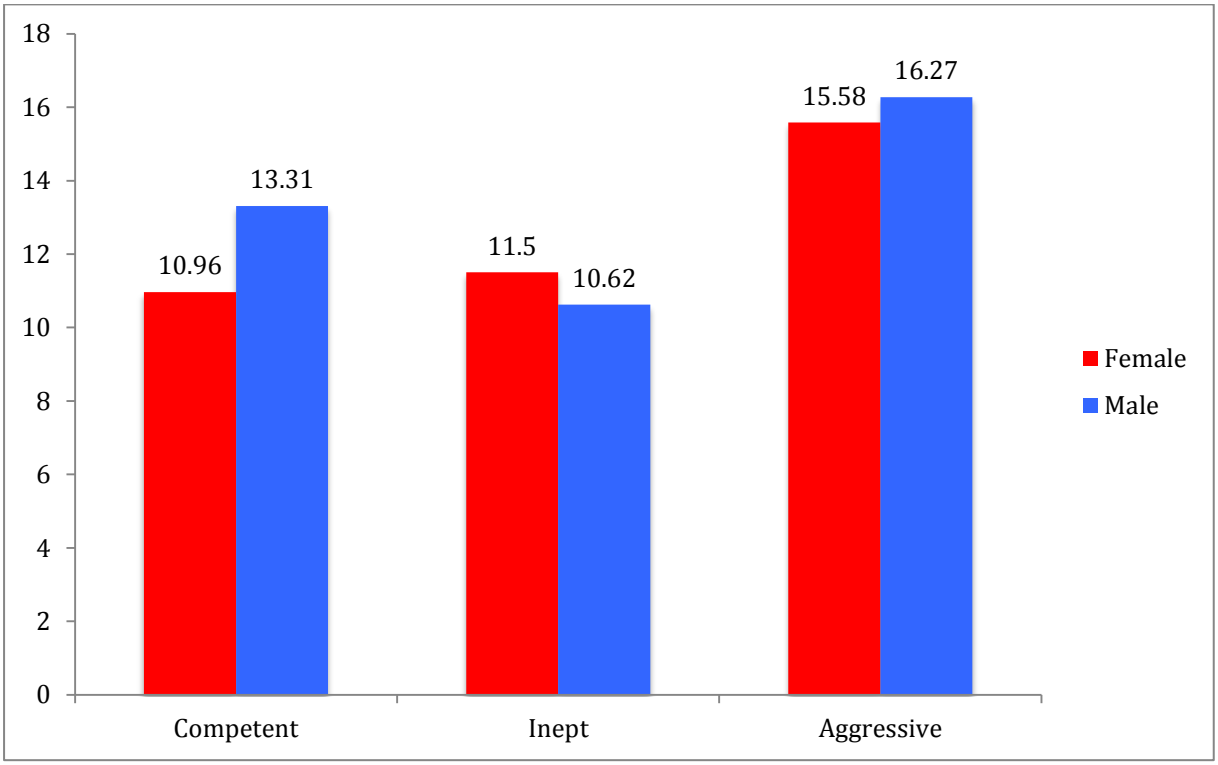


Figure 6: *Graph of mean scores for emotion perspective taking across the three types of responses.*

Pearson correlations were computed to examine the relationship among social information processing (SIP) variables (see Table 4 below).As expected, there were a few significant rather small to moderate associations. Notably, better recall of the stories was moderately associated with better response evaluation for both the competent and aggressive alternative endings, while decreased recall was associated with increased open hostile attribution for the newly added prosocial stories. Increased hostile attribution (forced choice) was only associated with two of the other SIP variables, open hostile attribution but only in the prosocial stories and lower response evaluation for the aggressive alternative endings. It was not possible to put the three open hostile attribution measures together, due to the visible pattern of correlations in Table 4. Furthermore, increased open hostile attribution in the two prosocial stories, which was a new variable in the study, was associated with lower response evaluation in both the competent and aggressive alternative endings, as well as increased hostile attribution in the ambiguous stories. While increased hostile attribution in the ambiguous stories was moderately associated with hostile attribution in the conflict stories, decreased hostile attribution in the ambiguous stories associated with lower response evaluation but only in the competent alternative endings. Increased hostile attribution in the conflict stories associated with response evaluation in the inept alternative endings only. Surprisingly, response generation (an original measure) did not associate with any of the other original SIP measures. Better response evaluation in the competent and inept alternative endings was moderately associated with increased response evaluation in the aggressive alternative endings.

Table 4: *Pearson correlation coefficients among social information processing variables*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Recall	1								
(2) Hostile Attributions (forced choice)	-.206	1							
(3) Open Hostile Attribution (Prosocial)	**-.243**	**.394****	1						
(4) Open Hostile Attribution (Ambiguous)	-.158	.094	**.258**	1					
(5) Open Hostile Attribution (Conflict)	-.090	-.019	-.004	**.402****	1				
(6) Response Generation	.170	.000	-.009	.043	-.025	1			
(7) Response Evaluation (Competent)	**.459****	-.159	**-.355***	**-.272**	-.072	.076	1		
(8) Response Evaluation (Inept)	-.058	-.101	.009	-.090	**.234**	-.019	.142	1	
(9) Response Evaluation (Aggressive)	**.240**	**-.297***	**-.238**	-.007	-.123	.217	**.506****	**.484****	1

Bold text indicates that correlations are statistically significant at a level of 0.10 or greater.

* Correlation is significant at .05 level (2-tailed significance).

** Correlation is significant at .01 level (2-tailed significance).

Pearson correlations were also computed to examine the relationship among emotion processing variables (see Table 5 below). Overall, there were somewhat fewer correlations between these variables in comparison to the SIP correlation matrix above. Disappointingly there were no associations found with any of the three measures and emotion recognition. It was not possible to assess the new emotion intensity or emotional perspective taking variables as a whole due to the evident pattern of correlations. Therefore as expected, better emotional intensity in the newly added prosocial stories indicated a strong association with better emotional perspective taking for the competent alternative endings. Increased emotional intensity in the ambiguous stories was moderately associated with increased emotion perspective taking, but only in the inept and aggressive alternative endings. Emotional intensity in the conflict stories was the variable that associated the most with the other variables. A moderate association was seen between emotional justification and emotional perspective taking in all three of the alternative endings (competent, inept and aggressive).Furthermore, increased emotional justification had a small to moderate association with emotional perspective taking for the aggressive stories only. Better emotional perspective taking for the inept alternative endings was moderately associated with emotional perspective taking, but only for the aggressive alternative endings.

Table 5: *Pearson correlation coefficients among emotion processing variables*

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
(1) Emotion Recognition	1							
(2) Emo. Int. (Prosocial)	-.192	1						
(3) Emo. Int. (Ambiguous)	-.069	-.077	1					
(4) Emo. Int. (Conflict)	.111	.094	.058	1				
(5) Emotional Justification	.045	.090	.070	**.375****	1			
(6) EPT (Competent)	.060	**.674****	-.160	**.404****	.103	1		
(7) EPT (Inept)	-.018	.086	**.595****	**.283***	.112	.041	1	
(8) EPT (Aggressive)	.052	-.043	**.441****	**.376****	**.290***	-.033	**453****	1

Note: Emo. Int. = Emotional Intensity; EPT = Emotional Perspective Taking

* Correlation is significant at .05 level (2-tailed significance).

** Correlation is significant at .01 level (2-tailed significance)

Pearson correlations were computed to examine the relationship across the SIP and emotion processing variables (see Table 6 below).Overall, it is surprising that that there were only a few significant and rather small to moderate associations. In particular, better recall of the stories was moderately associated with better emotion recognition, more emotional intensity in the conflict stories, and better emotional perspective taking for both competent and aggressive responses. There were no significant associations with the forced-choice hostile attributions, but there were a few moderate associations with the revised open response hostile attributions. Increased hostile attributions (or less benign attributions) in the prosocial and ambiguous stories was associated with less emotional intensity but only for the ambiguous stories. Increased hostile attribution in the ambiguous stories was associated with lower emotion perspective taking for inept stories and lower emotion perspective taking for inept stories. While increased hostile attribution in the conflict stories was associated with lower emotional perspective taking for aggressive stories. There were no associations found for response generation. Better response evaluation (competent) was moderately associated with increased emotional intensity in both the prosocial and conflict stories, and strongly association with better competent responses in emotional perspective taking. There were no associations found for response evaluation in the inept stories; however, increased aggressive response evaluations was associated with less emotional intensity in the conflict stories, and increased emotional justification.

Table 6: *Pearson Correlation Coefficients among SIP and emotion processing of prosocial, ambiguous, and conflict stories*

	Emotional Recognition	Emo. Int. (Prosocial)	Emo. Int. (Ambiguous)	Emo. Int. (Conflict)	Emotional Justification	EPT (Competent)	EPT (Inept)	EPT (Aggressive)
Recall	**.300***	.168	.185	**.373****	.092	**.279***	.098	**.423****
Hostile Attributions (forced choice)	-.113	-.232	-.030	.000	-.013	-.208	.013	.191
Open Hostile Attribution (Prosocial)	.102	-.190	**-.250**	-.158	-.119	-.107	-.145	-.002
Open Hostile Attribution (Ambiguous)	.095	-.002	**-.307***	-.195	-.125	-.087	**-.295***	-.125
Open Hostile Attribution (Conflict)	-.024	.176	-.085	-.051	-.180	.053	-.079	**-.280***
Response Generation	.160	.200	.187	-.020	.227	.126	.178	.091
Response Evaluation (Competent)	-.118	**.326***	.004	**.318***	-.010	**.515****	.087	.137
Response Evaluation (Inept)	.063	.071	.121	.023	.172	-.009	.068	.003
Response Evaluation (Aggressive)	.114	.064	.079	**.270**	**.379****	.128	-.054	.230

Note: Emo. Int. = Emotional Intensity; EPT = Emotional Perspective Taking

* Correlation is significant at .05 level (2-tailed significance).

** Correlation is significant at .01 level (2-tailed significance).

DISCUSSION

Previous studies looking at social information processing in younger children have tended to use the original SIPI-P measure, which only assesses children's social information processing in the context of ambiguous and conflict scenarios (Crick and Dodge, 1994; Ziv, 2012; Ziv, 2013). This has given researchers an inadequate picture of SIP and the SIPI-P provides an opportunity to explore the integration of emotion processing within SIP and add the prosocial component.

To address the above issues, the present study had three aims: (a) to explore the feasibility of combining social and emotion information processing in the SIPI-P; (b) to pilot test and extend a version of the SIPI-P that includes newly developed prosocial hypothetical scenarios alongside the existing scenarios addressing conflict and ambiguous situations; and (c) to investigate gender differences in young children's social and emotional information processing of hypothetical prosocial, ambiguous and conflict scenarios. Each aim will be addressed separately by summarizing the overall findings, and discussing how the present findings fit within the current body of research.

Integrating Emotion Processing with Social Information Processing

The present study added three emotion processing variables to the SIPI-P. The first variable, emotional intensity, assessed how the child would feel if the situation had happened to them, and was calculated by summing across similarly themed stories (prosocial, ambiguous, conflict), with higher scores indicative of greater emotional intensity. The second variable, emotion justification, assessed why the child would feel the emotion they identified in response to the scenario and was calculated by totalling the scores for the six stories due to the correlated nature of children's responses across

the three story types, with higher scores indicative of an ability to give logical justifications for emotional expectations. The third variable, emotion perspective taking, assessed the appropriateness and complexity of the chosen emotion and was calculated by summing within each of the competent, inept, and aggressive alternative endings across the six stories.

One important consideration in creating these new variables is their internal consistency across each of the stories. The current findings indicated that the reliability of emotional intensity across all six stories was poor (alpha = .58). Furthermore, the correlations between similarly themed stories were small (ambiguous and conflict stories) or non-existent (prosocial stories). When thinking about the content of each of the stories, it is not surprising that these associations among the emotional intensity items were not greater. In the first prosocial story, Michael/Lisa wanted to share his/her painting with another child, while the second prosocial story, Michael/Lisa wanted to share his/her lunch with another child. These two stories violated some of the kindergartens rules of sharing possessions (an unintentional design issue); therefore, the children's understanding of how to emotionally respond was confused. In the first ambiguous story, the other children didn't answer when Michael/Lisa asked to play with them, while in the second ambiguous story, another child walked past and accidently spilled Michael/Lisa's cup of water. Interestingly, the children tended to respond more angrily to the spilled water scenario than the children not answering Michael/ Lisa. Therefore, it is evident that children viewed the consequences of someone spilling their water more intensely. In the first conflict story, there was a provocation at home involving changing the television channel, while in the final conflict story, the children tell Michael/Lisa that they cannot play with them because the teacher said that only three people can play in the block area at once. It was clear that the second conflict story was somewhat ambiguous as the children did not really

know if Michael/Lisa were actively being excluded. Thus even though the three types of stories were generally distinct, within each theme there were also substantial qualitative differences.

Immediately after asking children how they would feel and how intensely they would feel those emotions, they were asked to justify why they would feel that way. The internal consistency reliability for emotional justification across the stories was somewhat low (alpha = .66, corrected item total correlations ranged from .24 to .58). This question places considerable demand on children's expressive language abilities. This is an important third variable that should possibly have been measured in this study. However, standardized language assessments such as the Clinical Evaluation of Language Fundamentals Preschool (Wiig, Secord and Semel, 1992) can take 20 to 30 minutes to complete. This would have been quite taxing for the children and difficult to assess adequately in the kindergarten environment in addition to the SIPI-P. In addition, in support of this argument, a high number of children across all three types of stories responded with 'don't know' or were illogical or unrelated in their emotional justification (prosocial stories = 74%, ambiguous stories = 50%, conflict stories = 68%). Thus, in regards to developing a single measure of children's abilities to justify emotional responses to the hypothetical responses, the current results suggest that further development of a measure that takes into account younger children's lack of verbal skills is required for future research.

There was acceptable reliability for the emotion perspective taking variable for the competent and aggressive alternative endings (alpha= .70 and .85 respectively), however poor reliability was generated for emotion perspective taking for the inept alternative endings (alpha= .47). In every single one of the inept alternative endings in the ambiguous and conflict stories the child starts crying, while in the inept alternative endings in the prosocial stories, the child just walks away. The participating children

are then asked “How would the other child feel after Michael/ Lisa cries and walks away (ambiguous and conflict stories; or, “just walks away” in the prosocial stories)?” The results suggest that perhaps children were challenged by the inept alternative endings, or may have found those behaviours (crying and walking away) confusing. Therefore, the same behaviour displayed over the ambiguous and conflict and slightly similar over the prosocial stories may explain the poor reliability for the inept endings. Dowling (2014), attempted to measure emotion processing in 4 to 6 year old children using the same measure and similar variables as the current study. Internal consistency for emotion justification and emotion perspective taking was good (alpha = 0.86 and 0.81 respectively). Although Dowling (2014) was the most similar previous study to the current study, the participants were on average 70 months of age (5 years and 10 months old), compared with the current studies average age of 52 months of age (4 years and 4 months old). Therefore, the results suggest that perhaps the cognitive changes over a year or so provide children with better verbal, theory of mind, and reflective skills for processing emotion (Crick and Dodge, 1994).

Qualitative differences across stories and alternative endings for emotion processing

Another indicator of the children's ability to anticipate and interpret the emotions in these six hypothetical scenarios are the themes that surfaced in children's qualitative data. When the children were asked, “How would you feel if Michael/Lisa offered you their painting/banana?” the findings showed that over half of the children were able to anticipate socially appropriate emotions and suggest congruent behavioural responses for the prosocial and conflicting stories. For example, the majority of children said that they would feel ‘happy’ if they were given a painting or a banana, and would say ‘thank you’ or ‘take the painting/banana’, or they would feel ‘sad’ if the other children said that they couldn’t play, and would ‘go and get an adult’.

In contrast, at least a quarter of the children said they would be ‘angry’ or ‘sad’ if they were given a painting or banana because ‘you are not allowed to share at kindergarten’. Lemerise and Arsenio (2000) suggested that these types of responses are consistent with the idea that representations of past experiences or concrete rules create an affective component when assessing the combination of emotion processing and SIP.

The qualitative data from the ambiguous story ‘Spilled Water’ provided additional evidence for individual differences in the sample in terms of emotion processing. Forty-two percent (n = 21) of the sample said that they would be ‘angry’ in the ambiguous story when the cup of water was spilled, as they believed that the water was spilt ‘on purpose’ and that they ‘now have nothing to drink’. These results overlap with what we know about Piaget and Kohlberg’s work on children’s cognitive processing and moral dilemmas. Piaget discusses the point that children move from a concrete understanding of morality to a more abstract one, where they realize that rules are not absolute but are ways for humans to cooperate and get along. Kohlberg built upon Piaget's theory, but offers a more sophisticated understanding of childhood morality and like Piaget; Kohlberg saw children's beginning understanding of morality as having to do with rules and consequences (Duska and Whelan, 1975).

It is evident when evaluating the above findings that the issue at hand is the children’s focus on the magnitude of the consequence. The results suggest that the bigger the negative consequence, the more likely children would attribute hostile intent. This assumption links with the work of Siegal and Peterson (1998) which discussed how at this young age, children are still developing their knowledge on ‘accidents’, ‘mistakes’ and ‘consequences’, as well as their learning on ‘appropriate’ and ‘inappropriate’ responses to differing scenarios. Their results found that preschoolers commonly can distinguish mistakes whether innocent or negligent from lies on the basis of the defining feature of intentionality in response to explicit

questioning, in which the terms for both a lie and a mistake are used. Such findings are contrary to the Piagetian notion that children generally regard all false statements as lies (Piaget, 1954).

The outcomes from the ambiguous stories relate with findings that ambiguity can play a crucial role in younger children's perception, whereby challenging them on selecting 'appropriately' deemed responses. Siegal and Peterson (1998) concluded that children's early appreciation of intentionality in distinguishing mistakes from lies is in keeping with young children's ability to imitate the intentions underlying an action and to infer intentionality in matching speech to objects. It is also consistent with their proficiency at using multiple perspectives in language acquisition.

Furthermore, for the emotional intensity variable, 32% of the children indicated they would feel happy if Michael or Lisa started crying. The interpretation of these results, link strongly with the 'happy victimizer' phenomenon, which is described by Sokol, (2005) as a discrepancy between young children's understanding of moral rules and their attribution of positive emotions to wrongdoers. According to Sokol (2005), young children at 3 to 4 years of age have developed an intrinsic understanding of moral rules. That is, they consider particular behaviours to be immoral, because of the harm suffered upon the victim. While on the other hand, Arsenio et al., (2006) commented, "Young children's empathic abilities, their understanding of moral rules, and their strong emotional ties to others make it seem implausible that they would simply expect victimizers to feel happy as a result of the gains produced by victimization. Yet, that is exactly what much of the research suggests" (p. 585). The current findings support the idea that children might attribute positive emotions to the victimizer instead of negative because they take his/her perspective and think she must feel good, because she wanted to act in this way and got what she wanted. Thus, in

keeping with Piaget and Kohlberg's findings on moral cognition, the consequences (getting what one wants) may outweigh the guilt from hurting someone's feelings.

Mean differences across stories and alternative endings for emotion processing

The pattern of means for emotional intensity (see Figure 4) across the three stories (combining gender) showed significant differences in children's ratings of emotional intensity across each of the stories (mean differences ranged from .23 to .49, all *p*s < .05). Children had a higher sense of emotional intensity when reading the ambiguous stories, which is an interesting finding as the ambiguity in the ambiguous stories, is represented by the intent of the other character. For example, in the first ambiguous story, the other child did not answer Michael/Lisa, when he/she asked to play with them. While in the second ambiguous story, another child walked past and accidently spilled Michael/Lisa's cup of water. The majority of the children were more inclined to give sad responses when the children did not respond to Michael/Lisa, and tended to respond more angrily to the spilled water scenario. Both of these emotions indicated were then given a strong emotion intensity rating of feeling 'a lot' sad/angry instead of the other options of 'a little' or 'don't know'.

The mean comparisons for emotion perspective taking and response evaluation (see Figures 5 and 6) indicated that children showed better emotion perspective taking and response evaluations when the alternative ending theme was clearer, as in the competent and aggressive endings. As mentioned above, perhaps in the inept alternative endings for each story, the behaviours ('start crying' in the ambiguous and conflict stories, and 'walk away' in the prosocial stories), as well as the children's verbal ability, challenged the children in evaluating an appropriate emotion response for the inept alternative endings of each story, hence why the inept responses were poorer. Affective perspective taking has been linked to early academic functioning

such as letter-word identification and practical maths problems, but not socio-emotional problems in preschool children (Leerkes, et al., 2008). This suggests a strong cognitive component in emotional and SIP evaluation, which perhaps is what links emotion perspective taking and response evaluation (Step 5 of SIP) in the current study.

Correlations within and between social and emotional information processing variables

Correlations within emotion processing variables (Table 5) and between emotion processing and social information processing variables (Table 6) were the final analyses investigating the role of emotion processing in SIP. Unfortunately, the correlations showed that there were a limited number of rather small to moderate correlations in each Table.

The correlations in Table 5 show that there is some evidence of domain specific correlations in emotion processing. Prosocial emotion intensity is strongly associated with competent emotion perspective taking, but not with the other variables. The same association is also seen between emotion intensity in ambiguous stories which correlated with emotion perspective taking in the inept alternative endings across stories. Table 5 also shows that emotional intensity in the conflict stories had the most associations with the other variables. Children that responded with high levels of emotional intensity in the conflict stories, scored higher with emotional justification and emotional perspective taking for all three alternative endings (competent, inept and aggressive). In the three different alternative endings of the conflicting stories, the child ‘gives a rational idea in order to resolve the provocation’ (competent), ‘starts crying’ (inept) and ‘uses aggressive words or actions’ (aggressive).

The correlations between emotion processing and social information processing in Table 6 showed that children with better recall of the points in the story scored higher with the emotional intensity (conflict stories) and emotion perspective taking (aggressive responses) variables. One possible explanation is that conflict and aggression is often emotionally charged, and therefore the conflict scenarios and aggressive alternative endings would engender greater emotion, and better memories. According to that interpretation, the stronger correlations with conflict stories, and competent and aggressive responses makes sense.

As mentioned earlier, acceptable reliability was not achieved for emotional intensity; therefore it was split into the three different story types (prosocial, ambiguous and conflict) to assess individually. Table 6 shows that children with increased emotional intensity in the prosocial stories scored higher with their competent response evaluations. In the competent endings of the prosocial stories, the child 'accepts the painting/banana and says thank you'. Therefore, in this association the children who interpreted greater emotion for the prosocial stories, showed higher levels of SIP with an increased understanding of response evaluations for the competent alternative endings. Supporting these findings, Nelson et al., (2013) discovered that children as young as four years old were able to understand gratitude, in that they associated receiving a benefit with intense positive feelings of thanks.

Table 6 also showed significant associations between increased hostile attributions in the prosocial and ambiguous stories and lower emotional intensity in the ambiguous stories. This association contrasts with the assumption that hostile attributions would be associated with increased emotion (Ziv, 2012). Thus, this negative association is somewhat surprising. Ziv and Sorongon (2011) argued that their SIP findings suggest that some children form positive evaluations of aggressive responses which have important theoretical implications. They suggest that children

who are perceived as more aggressive also possess distorted beliefs about the beneficial outcomes of aggressive responses. Consequently, these children believe that aggression is a beneficial way to solve social conflicts; therefore hostile attribution might be linked with lower emotional intensity in this instance due to children's biased ideas on beneficial outcomes associated with hostility.

Emotion perspective taking for the inept alternative endings correlated negatively with hostile attribution in the two ambiguous stories. This association shows competence rather than confusion. Children who reported higher hostile attributions in the beginning of the ambiguous stories were poorer judges of the emotion displayed in the inept alternative endings (which was generally 'walking away' and 'crying'). This may be attributed to the differing abilities that young children have in differentiating between intention and outcomes (Schult, 2002), and also due to the forced choice nature of the attribution question which has been acknowledged as potentially having a priming effect towards hostility (Ziv and Sorongon, 2011).

Additionally, emotion perspective taking in the aggressive alternative endings was negatively associated with hostile attribution in the two conflict stories. This correlation was expected, as children who showed lower hostile attributions in the conflict stories are more likely to also show better perspective taking in the conflict alternative endings across all stories. This is a good convergent correlation that was expected across many of these variables, but there were only a few. It is unclear if this is due to the young age of the sample or due to the limitations of the questions and coding and could only be tested with a second sample of slightly older children.

Integrating Prosocial Scenarios to the Social Information Processing Interview (SIPI-P)

The addition of the two prosocial scenarios to the already existing ambiguous and conflicting scenarios was pilot tested in the SIPI-P to assess if the addition of these two stories provide a fuller picture of how young children process emotion and social information. It is worthy to note that due to the general lack of research specifically looking at the use of prosocial vignettes within the SIPI-P, it is hard to compare the present results with previous studies.

The addition of the two prosocial stories ('Painting a Picture' and 'Lunch Time') to the SIPI-P was supported through the themes that surfaced from the children's qualitative responses. The majority of the children understood that the two prosocial stories portrayed acts of kindness and friendliness, and were of a positive nature. For example, when they were asked "Why did Michael/Lisa try to give his/her painting/banana away?" various responses included because they are 'nice', 'kind' or 'because they are friends'. The current studies qualitative findings are similar to the work of Nelson, (2013), whereby the act of gratitude was tested in 3 to 5 year olds when they were each given a gift and asked to explain how they feel about it. Results found that most children by the age of 5 have a beginning understanding of gratitude, in that they associated receiving a benefit with positive feelings. It was concluded in Nelson (2013) that the 5 year olds understanding of gratitude was linked directly with their ability to process and understand emotions, and those that were more understanding of others mental states at age 3.

It is important to discuss however, that around a quarter of the children in both of the prosocial stories thought that Michael/Lisa, and the other child would be 'sad' or 'angry', if there was to be an exchange of a painting or banana. As mentioned above, this was due to concrete rules from the kindergarten they attended whereby the

children were not permitted to share their belongings with other students. These findings perhaps illustrate individual developmental differences within this young group of preschool aged children, whereby for the children who are not yet understanding intent, their evaluations of this social situation are being governed by internalized kindergarten rules. On the other hand, the children who have understood the prosocial intent of giving the painting/banana have evaluated the gift differently.

To assess the levels of aggression that children attributed to the prosocial, ambiguous and conflict stories, the mean differences were assessed for open response hostile attribution across each of the three story types (see Figure 2). As expected, children attributed less hostile aggression towards the prosocial stories, while hostile attributions for the ambiguous and aggressive stories were significantly higher. Children additionally tended to view the ambiguous stories with increased hostility. Thus, by adding the prosocial stories within the SIPI-P, a point of contrast to the ambiguous and conflict stories was provided where children were performing similarly. Caprara et al. (2001) discuss the importance of preventing aggression and enhancing prosocial awareness in order to foster later development. Their findings suggested that the capacity to understand the concept of prosocial scenarios, and then to mirror this understanding when interacting with peers, influences not only a child's acceptance, but also their academic achievements. Examples of prosocial abilities included the capacity to share, to negotiate, to express emotions, and to recognize others feelings. These aspects of prosocial abilities and behaviour were included in the development of the two additional prosocial vignettes to create examples of prosocial behaviour being portrayed in a familiar kindergarten situation.

Mean differences for hostile attribution (open response) and kindergarten decile ratings (see Figure 3) indicated that children from both low and high decile kindergartens attributed less hostility when reading the prosocial stories in comparison

to reading the ambiguous and conflicting stories. Interestingly, children from lower decile kindergartens had the lowest ratings of hostile intent for the prosocial scenarios out of all ratings, but they also had the highest ratings of hostile intent for the conflict stories. This is a rather surprising finding which in some ways replicates previous research (with the conflict stories), but is also novel due to the addition of the prosocial scenarios. Due to the uneven spread between decile ratings, future research should explore this association further, as it would be interesting to draw valid conclusions as to whether a child's decile rating changes the way in which children react to prosocial situations.

Emotional intensity was also measured across the three different story types (prosocial, ambiguous and conflict). The mean comparisons for this variable in addition to open response hostile attributions (see Figures 2 and 4) displayed a curvilinear trend for the girls, which indicated that they judged less hostility and emotional intensity in the conflict stories than in the inept stories. This discovery also shows the benefit of assessing prosocial social situations as a point of comparison as the curvilinear relationships would not have been identified if the prosocial scenarios were not there.

Open response hostile attributions of prosocial stories were significantly associated ($p \leq .10$) with five other SIP variables (see Table 5).This was similar to the number of significant associations identified for response evaluations of aggressive alternative endings (although these correlations tended to be a bit stronger). In fact, this variable for the prosocial stories was the only open-response variable associated with Ziv and Sorongon's, (2011) original forced-choice hostile attributions variable. Perhaps one of the reasons why previous researchers have not introduced prosocial stories into SIPI-P research is due to the stronger associations that the aggressive stories have with other SIP variables in comparison to the ambiguous stories. Previous

works by Ziv and colleagues have assessed aggressive scenarios and hostile intentions, rather than prosocial scenarios, and benign responses. Ziv and Sorongon (2011) did not find any significant associations between hostile attributions (forced choice) and measures of behaviour, despite previous evidence to suggest a link, and believed that the wording of the question could possibly have had a priming effect towards hostility. While Ziv (2012) found that hostile/aggressive preschoolers were more likely than their less aggressive peers to attribute a hostile bias to another person's actions.

Similar to Ziv's study, in the current study the forced-choice hostile attribution measure also did not perform well, however, a number of associations were found with the open-response measures. Perhaps this was firstly because a measure summed across different types of stories in a sample this young may not be reliable enough to show significant associations with other SIP variables, and second, it is possible that an open-response coding system may work better than a forced-choice strategy as it seems to allow for greater individual differences and associations (while not many) with other variables.

The present findings suggest that while this was a pilot study, the use of prosocial vignettes within the SIPI-P contributed to a deeper understanding of how three to four year old children process a range of social situations. As suggested by Carreras et al., (2014), there is much opportunity for future studies to include the prosocial vignettes in the SIP model to make valid conclusions whether or not understanding prosocial scenarios can mediate the influence of aggression on social adjustment.

Gender Differences in Social and Emotion Processing

Gender differences were investigated in young children's social and emotional information processing of hypothetical prosocial, ambiguous and conflict vignettes. In terms of gender differences, there is a deficit in past literature that specifically examines significant gender differences of SIP and emotion processing in preschool children. In the current study both the boys and girls were read a similar, yet gender specific storybook, which had the same format, asked the same questions and had the same stories and story order.

The mean comparisons in Table 3 revealed that overall boys tended to be slightly better at most of the SIP and emotion variables in comparison to the girls. A possible explanation for this could be that the boys in the sample were slightly older than the girls, so therefore could be slightly ahead in their cognitive developmental functioning (Saarni, 1999). However, the analyses controlled for age and found that the boys were somewhat better than girls at identifying emotions, justifying emotions, and recalling the key elements across the six different stories (see Table 3).

Overall, boys tended to score slightly better than girls across 8 of the SIP and emotion processing variables. However, boys also generated more aggressive responses than the girls. There were some sampling issues in the current study that could explain the gender differences found. There was almost an equal number of boys and girls (26 males and 24 females), however the boys were on average three months older (53.81 versus 50.83 months; $p = .04$). In terms of the differing decile kindergartens in which the children attended, 6/26 (23.1%) boys were from lower decile kindergartens, while 9/24 (37.5%) of the girls were from lower decile kindergartens. These differences are the reason why gender and kindergarten decile ratings were entered as covariates in the analyses. It is interesting that the one significant interaction with decile ratings (see Figure 3) showed that children from the

lower decile kindergartens expressed a different pattern of responses than the children from higher decile kindergartens.

Previous research in general has suggested that there is a lack of research looking at gender differences across SIP variables. There are however a few studies that have noted worthy gender differences, for example, Meece and Mize (2010) found that girls showed increased hostile attribution and aggression in comparison to boys. Their study employed, video recorded hypothetical scenarios to assess SIP in a community-based sample of 128 children aged three to six years. It cannot be concluded whether the aggression from the girls was relational or overt, however Crick (1996) hypothesized that girls are more likely to use relational forms of aggression because they are effective in hindering the affiliative, intimacy goals that tend to be more typical of girls. In addition, de Castro, et al., (2005) found that aggressive boys demonstrated differences across all areas (SIP, emotion attributions and emotion regulation). They were more hostile in their attributions of intent (SIP Step 2: interpretation), had more aggressive response generation (SIP step 4: response access), and were less negative in their evaluations of aggressive responses (SIP step 5: response decision).

Figure 2 displays repeated measure analyses of variance for open response hostile attributions. These analyses tested the mean differences across gender and across story type (prosocial, ambiguous, and conflict) after controlling for kindergarten decile ratings. Mean comparisons of gender within SIP showed that although for both boys and girls their overall levels of hostile attributions were quite low and below the mid-point of the range, following reading the two conflict stories, the boys generated more aggressive response access of SIP than the girls. In support of this finding, qualitative responses from the conflict stories indicated that out of the 20% (n= 10) of children in the two conflict stories that responded with aggressive motives such as, ‘hit

you', 'knock down their tower', 'won't let you play with me', 'kick it', 'shout at them', 'hit them', 'tackle them' and 'grab the remote back off them', 7 of these respondents were boys. These findings can be explained through the social learning theory whereby if boys did not have a repertoire of personal experiences similar to the one in the story to draw on; they would access memories of influential models whom they may have witnessed in these types of situations (Boyce, 2011). The current findings are consistent with the work by Huesmann (1998) who gave an explanation as to why the influence of justification of violence beliefs on aggressive behaviour is especially prominent in younger boys. For example these beliefs, sought through virtual or reality learning would either act by increasing the probability of an aggressive response, or they would affect the way on which the child assesses the story of conflict before selecting an appropriate reaction.

In addition, Ostrov and Godleski (2010) proposed a gender based SIP theory. This was in response to the realization that SIP falls short in providing testable hypotheses related to gender schemas as gender-linked behaviour, and does not provide a useful theoretical framework for understanding how gender- based behaviours develop in children. The central goal was to posit a new theoretical framework that expanded on existing social-cognitive, peer-socialization, and gender-schema models. The proposed gender-linked model integrated across a number of theoretical frameworks and advanced novel theoretical contributions. Although it includes components from several past theories, the model primarily integrates across two models: Social Information Processing Model of Children's Social Adjustment (Crick and Dodge, 1994) and the Schematic-Processing Model of Sex Role Stereotyping (Martin and Halverson, 1981). The model begins with the traditional six steps of the SIP. However, the gender schematic processing model is fully incorporated in the SIP via the database and influences each of the SIP steps. In the current study as

seen in Figure 2, for boys to be behaviourally more aggressive must mean that the response options are also more accessible for boys; therefore the development of this gender based model would be influential in controlling for this concern.

The descriptive statistics show that both boys and girls did relatively well in their evaluations of the alternative endings (scoring well above the mid-point on average). However, as can be seen in Figure 5, boys scored higher for each type of response evaluation. It is important to note that both the boys and girls were slightly better at response evaluating competent and aggressive responses, rather than the inept responses. As mentioned earlier, this is most likely due to the confusion of the inept endings (e.g., crying or walking away). Young children struggle to understand the difference between what 'acceptable' and 'unacceptable' responses are, therefore it is only fitting that they then struggle to evaluate the reasoning behind their responses.

Overall both the boys and girls seemed to struggle with emotion perspective taking across the three types of responses (see Figure 6). The post-hoc comparisons showed the boys' emotion perspective taking was significantly better than the girls in the aggressive and inept response conditions. Similarly, there was a marginally significant interaction between the story types and gender in Figure 4, where both boys and girls found the stories to be relatively low in emotional intensity (mean scores were less than the midpoint across all three stories), however boys showed higher emotional intensity in both the prosocial and conflict stories compared to girls. Perhaps this could support the association of SIP and emotion variables, whereby the boys emotion processing is somewhat related to their developed SIP of response generation, by which previous stored memories of familiar prosocial and conflicting scenarios elicit greater emotional intensity, and verbal related and complex emotions relevant to the scenario. To support this reasoning, Helmsen, Koglin and Petermann (2012), examined the mediating role of SIP between emotion regulation through line drawings

of hypothetical vignettes and questions relating to interpretation (Step 1), response generation (Step 4) and response decision (Step 5) in 193 German preschool children aged three to five years old. Findings revealed that SIP was found to be associated with aspects of emotion, with children demonstrating higher maladaptive emotion regulation, through the generation of their responses.

A result of interest in the current study was that girls showed increased attributed hostility to ambiguous scenarios compared to the stories of conflict, while the boys showed a linear trend across the three story types. Girls additionally showed a curvilinear trend for emotional intensity, whereby it was apparent that the girls judged less emotional intensity in the conflict stories compared to the ambiguous stories. These findings confirm that the girls in the current study displayed a curvilinear trend for elevated attributions of hostility and emotional intensity in ambiguous stories in comparison to the prosocial and conflict stories, and in comparison to the linear trends in the boys' responses. Age and gender was controlled for, which suggests that these variables do not explain the current findings, however a rather speculative reason for these results could be because the girls are confused by the ambiguity of these stories and/or they are more suspicious of the motives behind them. In support of the previous claim, in the story 'Spilled Water', out of the forty-two percent (n = 21) of the sample that reported hostility by saying that they would be 'angry' if someone split their water, as they believed it was spilt 'on purpose', 71% (n=15) of those responses were from the girls. The current study's findings fit with previous research by White, et al. (2013), who suggests that behavioural regulation is associated with reactive aggression but not proactive aggression, which therefore links with the hypothesis that reactive aggression, is more emotionally driven and thus requires a greater level of effortful control.

Limitations and Directions for Future Research

The present study has several limitations that should be mentioned and warrant caution in interpreting the implications of the present study. Firstly, Ziv and Sorongon (2011) modified the original SIPI-P to accommodate the attention span of preschool children, reducing their version to four stories in total. In the current study however, due to the nature of the study aims, two additional stories were added to the already existing four, which gave a total of six stories. The estimated 20 minute interview increased by around 10 to 15 minutes making it approximately 30 to 40 minutes long. For some children it was evident that the interview was too long, as they became restless half way into the interview. In this particular circumstance a sticker was given to the child at the halfway mark to try and keep them motivated for the second half of the interview and another prize. The length of this interview could potentially have been detrimental to the children's responses in the final two stories if they were getting restless and tired.

Another problematic issue for the current study is the lack of variation in the ethnic and socioeconomic demographics of the children's families. The majority of the participants recruited were of New Zealand European decent and from higher socioeconomic status (SES) communities (as indicated by decile ratings). Additionally, it was noted by a few head teachers of the participating kindergartens that the academic language used on the information sheet was beyond some of the parents reading skills. This may have discouraged some parents' willingness to let their child participate if they were unsure what the interview process was trying to measure. To overcome these issues in future studies a larger sample is required with more targeted recruitment from early childhood centres in low income neighbourhoods, and a simpler consenting procedure.

The set order of the stories is also a limitation for the current study, as the three story types should have varied. The current study had the following order: prosocial, inept, inept, prosocial, conflict, conflict. The two conflict stories being at the end of the story could have affected children's responses, and in light of the first limitation, some children could have been tired by the last two stories, and therefore their answers might not have reflected how they would answer had they have been alert. Ideally, the story order should have been counter-balanced. But this would have necessitated making multiple sets of the study materials which would have been quite difficult.

The measure of Emotion Perspective Taking (match and level) did not gain the more complex sort of responses, as desired. The majority of the children within this age group were able to anticipate the experience of primary emotions (e.g. 'happy', 'sad') however struggled to anticipate the experience of self-conscious and more complex emotions (e.g. 'grateful', 'confusion'). This was expected for the participating cohort due to the nature of their young ages, however perhaps future studies can look into a different measure to further extend the knowledge on younger children's emotion perspective taking.

A further limitation of the current study is that the SIP and Emotion variables were not measured against behaviour. Due to the young age of the cohort, and therefore lack of verbal skills, a measurement of their behaviour could have given the current study another point of comparison, when assessing how kindergarten children process SIP and emotion processing.

Within the current study, there were a number of interesting findings that could guide areas of future research within this field. The sample size recruited for the current study was acceptable for a pilot study, however to form valid conclusions and assumptions, a much larger sample size is needed along with a comparison across modest age differences. Unlike the current study, the participating children in future

studies should be the age of 4 years old, or slightly older, because children any younger are still in the early years of cognitive, emotional and social development. The majority of the 3 year olds also lack the necessary vocabulary skills to answer the more complex questions within the SIPI-P. Finally a longitudinal study, replicating the current study is suggested for future research, in order to truly capture young children's developmental changes.

Conclusions

Overall, it can be concluded that the current study achieved its underlying purpose of finding a judicious way to incorporate emotion aspects and prosocial scenarios into an already effective measure of social information processing in young children, while being able to assess the difference between the boys and girls responses through the already designed gender specific version of the SIPI-P.

This expanded version of the SIPI-P incorporates the overlap between social and emotional information processing across three story types that may allow for other regulatory and behavioural measures to be tested.

It was apparent that the majority of the children could respond to most of the emotion processing assessments within the SIPI-P, and the revised coding of hostility through an open-response coding strategy was more effective than the original forced-choice variable. However, some of the children struggled with the variables that required more complex verbal skills. Furthermore, the preschool children generally understood the positive nature of the two new additional prosocial stories; however, the similar themes of generosity in both of these stories violated some of the children's kindergartens rules. Thus, these stories will require further revision in consultation with early childhood centres. To conclude, the present study makes a novel contribution to the challenge of measuring social and emotional information processing in young children. Further revision of this expanded version of the SIPI-P is still required, but the present data provides good evidence that both social and emotional information processing can be combined into a single measure assessing a fuller range of hypothetical social scenarios applicable to young children.

REFERENCES

Arsenio, W. F., Adams, E., & Gold, J. (2009). Social Information Processing, Moral Reasoning, and Emotion Attributions: Relations with Adolescents' Reactive and Proactive Aggression. *Child Development, 80*(6), 1739-1755. doi: 10.1111/j.1467-8624.2009.01365.x

Asher, S. R., Hymel, S., & Renshaw, P. D. (1984). Loneliness in children. *Child Development, 55,* 1457-1464.

Asher, S. R., & Wheeler, V. A. (1985). Children's loneliness: A comparison of rejected and neglected peer status. *Journal of Consulting and Clinical Psychology, 53,* 500-505.

Baker, J. R., & Hudson, J. L. (2014). Friendship quality and social information processing in clinically anxious children. *Child psychiatry and human development, 45*(1), 12-23. doi: 10.1007/s10578-013-0374-x

Batum, P., & Yagmurlu, B. (2007). What counts in externalizing behaviors? The contributions of emotion and behavior regulation. *Current Psychology: Developmental • Learning • Personality • Social, 25*(4), 272-294. doi: 10.1007/BF02915236

Boyce, T. E. (2011). Applying social learning theory. Training Journal, , 31.

Calvete, E., & Orue, I. (2012). Social Information Processing as a Mediator Between Cognitive Schemas and Aggressive Behavior in Adolescents. *Journal of*

Abnormal Child Psychology, 40(1), 105-117. doi: 10.1007/s10802-011-9546-y

Caprara, G. V., Barbaranelli, C., & Pastorelli, C. (2001). Prosocial behavior and aggression in childhood and pre-adolescence. In A. C. Bohart & D. J. Stipek (Eds.), *Constructive & destructive behavior: Implications for family, school, & society*. (pp. 187-203): American Psychological Association.

Carpenter, M., Pennington, B. F., & Rogers, S. J. (2002). Interrelations among social-cognitive skills in young children with autism. *Journal of autism and developmental disorders, 32*(2), 91-106. doi: 10.1023/A:1014836521114

Carreras, M. R., Braza, P., Muñoz, J. M., Braza, F., Azurmendi, A., Pascual-Sagastizabal, E., . . . Sánchez-Martín, J. R. (2014). Aggression and prosocial behaviors in social conflicts mediating the influence of cold social intelligence and affective empathy on children's social preference. Scandinavian Journal of Psychology, 55(4), 371-379. doi:10.1111/sjop.12126

Cassidy, J., & Asher, S. R. (1992). Loneliness and peer relations in young children. *Child Development, 63,* 350-365.

Crick, N. R. (1996). The role of overt aggression, relational aggression, and prosocial behavior in the prediction of children's future social adjustment. *Child development, 67*(5), 2317-2327. doi: 10.2307/1131625

Crick, N. R., & Dodge, K. A. (1994). A Review and Reformulation of Social Information-Processing Mechanisms in Children's Social Adjustment.

Psychological Bulletin, 115(1), 74-101. doi: 10.1037/0033-2909.115.1.74

Darin, J. A., & Sharon, L. F. (2012). Attentional Processes in Children's Overt and Relational Aggression. *Merrill-Palmer Quarterly, 58*(3), 409-436.

de Castro, B. O., Veerman, J. W., Koops, W., Bosch, J. D., & Monshouwer, H. J. (2002). Hostile attribution of intent and aggressive behavior: A meta-analysis. Child Development, 73(3), 916-934. doi:10.1111/1467-8624.00447

de Castro, B. O. (2010). Rage, revenge, and precious pride: Emotions in information processing by children with aggressive behavior problems (pp. 53-74). US: American Psychological Association.

Denham, S. A. (1986). Social cognition, prosocial behavior, and emotion in pre-schoolers: Contextual validation. Child Development, 57, 194–201. doi:10.2307/ 1130651.

Denham, S. A., Blair, K. A., DeMulder, E., Levitas, J., Sawyer, K., Auerbach-Major, S., et al. (2003). Preschool emotional competence: Pathway to social competence. Child Development, 74, 238–256. doi:10.1111/1467-8624.00533.

Denham, S. A., Blair, K. A., Schmidt, M., & DeMulder, E. (2002). Compromised emotional competence: Seeds of violence sown early? American Journal of Orthopsychiatry, 72, 70–82. doi:10.1037/0002-9432.72.1.70.

Denham, S. A., McKinley, M., Couchoud, E. A., & Holt, R. (1990). Emotional and behavioral predictors of preschool peer ratings. Child Development, 61, 1145–1152.doi:10.2307/1130882.

Denham, S.A., Way, E., Kalb, S.C., Warren-Khot, H.K., & Bassett, H.H. (2013). Preschoolers' social information processing and early school success: The challenging situations task. British Journal of Developmental Psychology, 31, 180-197.

Dodge, K. A., Laird, R., Lochman, J. E., Zelli, A., & Conduct Problems Prevention Research, G. (2002). Multidimensional Latent-Construct Analysis of Children's Social Information Processing Patterns: Correlations With Aggressive Behavior Problems. *Psychological Assessment, 14*(1), 60-73. doi: 10.1037/1040-3590.14.1.60

Dodge, K. A., & Newman, J. P. (1981). Biased decision-making processes in ag-aggressive boys. Journal of Abnormal Psychology, 90, 375–379. doi:10.1037/0021-843X.90.4.375

Dodge, K. A., Pettit, G. S., McClaskey, C. L., Brown, M. M., & Gottman, J. M. (1986). Social Competence in Children. *Monographs of the Society for Research in Child Development, 51*(2), i-85.

Dodge, K. A., & Price, J. M. (1994). On the Relation between Social Information Processing and Socially Competent Behavior in Early School-Aged Children. *Child Development, 65*(5), 1385-1397. doi: 10.1111/j.1467-

8624.1994.tb00823.x

Duska, R. F., & Whelan, M. (1975). Moral development: A guide to piaget and kohlberg. New York: Paulist Press.

Eisenberg N, Spinrad TL (2004) Emotion-related regulation: sharpening the definition. Child Dev 75:334–339

Fujiki, M., Brinton, B., & Clarke, D. (2002). Emotion Regulation in Children with Specific Language Impairment. *Language, Speech, and Hearing Services in Schools, 33*(2), 102.

Gifford-Smith, M. E., & Rabiner, D. L. (2004). Social information processing and children's social adjustment. In J. B. Kupersmidt & K. A. Dodge (Eds.), *Children's peer relations: From development to intervention.* (pp. 61-79): American Psychological Association.

Harter, S. (2012). The construction of the self: Developmental and sociocultural foundations. New York: Guilford Press.

Helmsmen, J., Koglin, U., & Petermann, F. (2012). Emotion Regulation and Aggressive Behavior in Preschoolers: The Mediating Role of Social Information Processing. *Child Psychiatry & Human Development, 43*(1), 87-101. doi: 10.1007/s10578-011-0252-3

Horsley, T. A., de Castro, B. O., & Van der Schoot, M. (2010). In the eye of the beholder: eye-tracking assessment of social information processing in

aggressive behavior. *Journal of abnormal child psychology, 38*(5), 587-599. doi: 10.1007/s10802-009-9361-x

Huesmann, L. (1988). An information processing model for the development of aggression. *Aggressive Behavior, 14*(1), 13-24. doi:10.1002/1098-2337(1988)14:1<13::AID-AB2480140104>3.0.CO;2-J

Katsurada, E., & Sugawara, A. I. (1998). The relationship between hostile attributional bias and aggressive behavior in preschoolers. *Early Childhood Research Quarterly, 13*(4), 623-636. doi: 10.1016/S0885-2006(99)80064-7

Keil, V., & Price, J. M. (2009). Social information-processing patterns of maltreated children in two social domains. *Journal of Applied Developmental Psychology, 30*(1), 43-52. doi: 10.1016/j.appdev.2008.10.003

Kupersmidt, J. B., Stelter, R., & Dodge, K. A. (2011). Development and validation of the social information processing application: a Web-based measure of social information processing patterns in elementary school-age boys. *Psychological assessment, 23*(4), 834-847. doi: 10.1037/a0023621

Laible, D., McGinley, M., Carlo, G., Augustine, M., & Murphy, T. (2013, July 29).Laible, D., McGinley, M., Carlo, G., Augustine, M., & Murphy, T. (2013). Does Engaging in Prosocial Behavior Make Children See the World Through Rose-Colored Glasses? *Developmental Psychology. Advance online publication*. doi: 10.1037/a0033905

Lazarus, R. S. (1991). *Emotion and adaptation*. Oxford University Press.

Lemerise, E. A., & Arsenio, W. F. (2000). An Integrated Model of Emotion Processes and Cognition in Social Information Processing. *Child Development, 71*(1), 107-118. doi: 10.1111/1467-8624.00124

Lindebaum, D., & Jordan, P. J. (2012). Positive emotions, negative emotions, or utility of discrete emotions?. *Journal Of Organizational Behavior*, *33*(7), 1027-1030. doi:10.1002/job.1819

Martin, C. L., & Halverson, C. F. (1981). A schematic processing model of sex typing and stereotyping in children. Child Development, 52(4), 1119-1134. doi:10.1111/j.1467-8624.1981.tb03158.x

Mauss, I. B., & Robinson, M. D. (2009). Measures of emotion: A review. *Cognition & Emotion*, *23*(2), 209–237. doi:10.1080/02699930802204677

Mayer J. D., Salovey P., Caruso D. R. (2008). Emotional intelligence: New ability or eclectic traits? *American Psychologist*, 63(6), 503–517. doi:10.1037/0003–066X.63.6.503

McClelland, J.L., Rumelhart, D.E. & Hinton, G.E. (1896). The appeal of parallel distributed processing. In D.E. Rumelhart, J.L.McClelland, and the PDP Research Group (Eds.), *Parallel distributed processing: Explorations in the microstructure of cognition,* (pp 3-44). Cambridge, Mass: MIT Press.

Meece, D., & Mize, J. (2010). Multiple Aspects of Preschool Children's Social Cognition: Relations with Peer Acceptance and Peer Interaction Style. *Early Child Development and Care, 180*(5), 585-604. doi: 10.1080/03004430802181452

Morgan, J.K., Izard, C.E., & King, K.A. (2010). Construct validity of the emotion matching task: Preliminary evidence for convergent and criterion validity of a new emotion knowledge measure for young children. Social Development, 19 (1), 52-70.

Morrison, N. M. V., Burnham, D., & Morrison, B. W. (2015). Cognitive load in Cross- Modal Dual- Task processing. Applied Cognitive Psychology, 29(3), 436-444. doi:10.1002/acp.3122

Nelson, D., A. & Crick, Nicki, R. (1999). Rose-Colored Glasses: Examining the Social Information-Processing of Prosocial Young Adolescents. *The Journal of Early Adolescence, 19*(1), 17-38. doi: 10.1177/0272431699019001002

Nelson, J. A., de Lucca Freitas, L. B., O'Brien, M., Calkins, S. D., Leerkes, E. M., & Marcovitch, S. (2013). Preschool-aged children's understanding of gratitude: Relations with emotion and mental state knowledge. The British Journal of Developmental Psychology, 31(Pt 1), 42.

Nesdale, D., Killen, M., & Duffy, A. (2013). Children's social cognition about proactive aggression: 1. Journal of Experimental Child Psychology, 116(3), 674. doi:10.1016/j.jecp.2013.07.003

New Zealand Ministry of Education. (2015). *Review of Deciles - General Information.* Retrieved from http://www.minedu.govt.nz/NZEducation/EducationPolicies/Schools/SchoolOperations/Resourcing/OperationalFunding/Deciles/ReviewOfDecilesGeneralInformation.aspx

Nummenmaa, L., Peets, K., & Salmivalli, C. (2008). Automatic Activation of Adolescents' Peer-Relational Schemas: Evidence from Priming with Facial Identity. *Child Development, 79*(6), 1659-1675. doi: 10.1111/j.1467-8624.2008.01217.x

Ogelman, H.G. & Seven, S. (2012). The effect social information processing in six-year-old children has on their social competence and peer relationships. Early Child Development and Care, 182(12), 1623-1643.

Ormrod, J.E. (2014) "Educational Psychology: Developing Learners" 8th Edition. Boston: Pearson

Peets, K., Hodges, E. V. E., & Salmivalli, C. (2011). Actualization of Social Cognitions into Aggressive Behavior toward Disliked Targets. *Social Development, 20*(2), 233-250. doi: 10.1111/j.1467-9507.2010.00581.x

Piaget, J. (1954). *Les relations entre l'affectivité et l'intelligence* [*The relations between emotion and intelligence*]. Paris, France: Sorbonne.

Ponitz, C. E., McClelland, M. M., Jewkes, A. M., Connor, C. M., Farris, C. L., & Morrison, F. J. (2008). Touch your toes! Developing a direct measure of behavioral regulation in early childhood. *Early Childhood Research Quarterly, 23*(2), 141-158. doi: 10.1016/j.ecresq.2007.01.004

Rubin, K., & Krasnor, L. (1986). Social-cognitive and social behavioral perspectives

on problem solving. In M. Perlmutter (Ed.), *The Minnesota Symposia on Child Psychology: Cognitive perspectives on children's social and behavioral develpoment Vol. 18* (pp. 1-68). Hillsdale, NJ: Erlbaum.

Saarni, C. (1979). Children's understanding of display rules for expressive behavior. *Developmental Psychology, 15*(4), 424-429. doi:10.1037/0012-1649.15.4.424

Saarni, C. (1999). The development of emotional competence. the guilford series on social and emotional development Guilford Press/Guilford Publications, Inc.

Schult, C. A. (2002). Children's Understanding of the Distinction between Intentions and Desires. *Child Development, 73*(6), 1727-1747. doi: 10.1111/1467-8624.t01-1-00502

Schultz, D., Ambike, A., Logie, S. K., Bohner, K. E., Stapleton, L. M., Vanderwalde, H., . . . Betkowski, J. A. (2010). Assessment of Social Information Processing in early childhood: development and initial validation of the Schultz Test of Emotion Processing-Preliminary Version. *Journal of abnormal child psychology, 38*(5), 601-613. doi: 10.1007/s10802-010-9390-5

Shields, A., & Cicchetti, D. (1998). Reactive aggression among maltreated children: the contributions of attention and emotion dysregulation. *Journal of clinical child psychology, 27*(4), 381-395. doi: 10.1207/s15374424jccp2704_2

Smith, M. (2001). Social and emotional competencies: Contributions to young African- American children's peer acceptance. Early Education and

Development, 12, 49–72.doi:10.1207/s15566935eed1201_4.

Smolensky, P. (1988). On the proper treatment of connectionism.*BehavioralBrainSciences,11,* 1-74.

Sokol, B. W. (2005). Children's conceptions of agency and morality: Making sense of the happy victimizer phenomenon

Unkelbach, C. (2012). Positivity advantages in social information processing. Social and Personality Psychology Compass, 6(1), 83-94. doi:10.1111/j.1751-9004.2011.00407.x

Yagmurlu, B. (2014). Relations Among Sociocognitive Abilities and Prosocial Behavior. *Journal Of Child & Family Studies*, *23*(3), 591-603. doi:10.1007/s10826-013-9726-1

Ziv, Y. (2012). Exposure to violence, social information processing, and problem behavior in preschool children. *Aggressive behavior*, *38*(6), 429-441. doi: 10.1002/ab.21452

Ziv, Y. (2013). Social information processing patterns, social skills, and school readiness in preschool children. *Journal of experimental child psychology*, *114*(2), 306-320. doi: 10.1016/j.jecp.2012.08.009

Ziv, Y., Oppenheim, D., & Sagi-Schwartz, A. (2004). Social information processing in middle childhood: Relations to infant-mother attachment. Attachment and Human Development, 6(3), 327- 348.

Ziv, Y., & Sorongon, A. (2011). Social information processing in preschool children: Relations to sociodemographic risk and problem behavior. *Journal of experimental child psychology, 109*(4), 412-429. doi: 10.1016/j.jecp.2011.02.009

APPENDICES

Appendix A: *Educational Research Human Ethics Committee Approval*

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

HUMAN ETHICS COMMITTEE

Secretary, Lynda Griffioen
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2014/87

20 August 2014

Carly Burgess
Department of Educational Studies & Leadership
UNIVERSITY OF CANTERBURY

Dear Carly

The Human Ethics Committee advises that your research proposal "Development of social and emotion information-processing in early childhood" has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 20 August 2014.

Best wishes for your project.

Yours sincerely

Lindsey MacDonald
Chair
University of Canterbury Human Ethics Committee

Appendix B: ***Participation information forms given to Kindergartens***

May 2014

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Development of Social Information-processing and Emotion Processes in Early Childhood

Information Sheet for Head Teachers

Research Participation Opportunity

_____ early childhood centre is invited to participate in a study about the processes that young children engage in regarding social situations. The study will examine the thoughts and feelings that children express in response to prosocial and ambiguous stories about peer social interactions. The information collected about these processes will be related to information about children's behavioural styles, which will be collected from questionnaires filled in by parents and from playing an imitation game with the children. The study is being conducted by Child and Family Psychology Masters' student Carly Burgess, and supervised by Dr. Myron Friesen and Dr. Veronica O'Toole from the College of Education at the University of Canterbury (please see contact details below).

What does the study involve?

If the early childhood centre allows this study to take place, it will be requested that an information pack be sent to parents of children who are 4 years of age. The information pack will include a letter detailing the aim of the study, use of data, ethical considerations and incentive information. If parents agree to participate in the study, they will be asked to complete two questionnaires (also included in the information pack) regarding their child's emotion regulation and behavioural style. The questionnaires will take about ten minutes each to complete.

Parents will also be asked to give consent for their child to meet with the researcher, Carly Burgess, on early childhood centre grounds. This has been requested as the researchers have sought ethical approval on these grounds, so that children are provided with a safe, familiar environment with access to trusted adults at all times while participating in the study. Parents will be given the option to attend their child's interview if they wish, and if unable to attend during school hours, arrangements will be made with the individual family to conduct the interview at a clinic at the University of Canterbury. If the study is conducted at your early childhood centre, this will require the researcher to be at the centre one to two days a week, for one to two months at a time that is convenient for individual teachers.

Interaction with each child will involve playing a brief five minute imitation game, then asking a series of questions about how each child would think or feel in four stories about bears in peer situations that are similar to young children's daily peer situations (taking about 20-25 minutes). The children will be asked if they would like to be involved in the activity and will be given numerous opportunities to opt out if they change their minds about participating. Participation is voluntary, and families may withdraw from participation with no repercussions. This can be done until analysis of data begins in December 2014. Parents will be informed that their child's participation in the task and other information collected in the study will in no way have any bearing on their child's education.

Who will have access to the information that is collected and what will happen with the information?

Any information collected in this study will be confidential and securely stored. Only the researcher and supervisors will have access to the information as is required. The results from the study are intended to be published as a thesis, and will therefore be accessible via the University of Canterbury library, and there is also a possibility for the results to be further published in an academic journal. However, all data that is published is done so at group level, not individually, and any individual quotes would be edited so that no identifying

information is given. Following publication of the study, data will be kept for a minimum period of five years, and then destroyed. A summary of overall findings at a group level will be sent to parents if requested on the Contact Details Form (included in information pack). No specific details will be given out as the information collected is used only to analyze patterns, and not to make any judgments about a child's individual functioning.

Are there any benefits or risks involved?
Due to the common nature of the social situations depicted in the stories and the style of questions which are tailored to be similar to those encountered in a classroom environment, there are no foreseeable physical or psychological risks. However, if there is any sign that any child is not totally comfortable during the interview, the session will be sensitively terminated and the child returned to the class. In this eventuality the child will still be thanked for their time with a small item, such as stickers or a pencil, and the teacher informed of the reasons for early termination of the session. Any significant details about this will then be passed on to parents.

As thanks for parents' time, they will be sent a $10 grocery voucher. To receive this they will need to fill in the two questionnaires, consent form and contact details form from the information pack. Whether their child chooses to participate or not will NOT affect them receiving the voucher.

The study has also received ethical approval from the University of Canterbury Human Ethics Committee. If you have any questions or concerns about the content of the questionnaires or the procedures involved in the tasks/interview conducted please feel free to contact the researchers via the details listed above, or you may contact the Human Ethics Committee directly at:

The Chair
University of Canterbury Human Ethics Committee
Private Bag 4800
Christchurch
Email: human-ethics@canterbury.ac.nz

Further information about the study or the school's involvement in it?
The early childhood centre is free to contact the researchers via the details below, if there are any questions or concerns about the procedures used in this study.

We appreciate your time in considering this study, and would very much appreciate your assistance. Should the early childhood centre agree to participate, please make contact via email or phone (see contact details below). We will then liaise with the school/early childhood centre to organize dissemination of information packs to parents and arrange appropriate times and places for interviews to be conducted.

Regards,

Carly Burgess (Primary Investigator)
Masters Student, University of Canterbury
Ph: (03) 364 2987 ext. 44235
Email: clb103@uclive.ac.nz

Dr Myron Friesen (Primary Supervisor)
School of Educational Studies and Human Development, University of Canterbury
Ph: (03) 364 2987 ext. 8914
Email: myron.friesen@canterbury.ac.nz

Dr Veronica O'Toole (Secondary Supervisor)
School of Educational Studies and Human Development, University of Canterbury
Ph: (03) 364 2987 ext. 44138
Email: veronica.otoole@canterbury.ac.nz

Appendix C: ***Information Sheet and consent forms or parents/caregivers***

May 2014

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Development of Social Information-processing and Emotion Processes in Early Childhood

Information Sheet for Parents

Research Participation Opportunity
You and your child are invited to participate in a study about the processes that young children engage in regarding social situations. The study will examine the thoughts and feelings that children express in response to prosocial and ambiguous stories about peer social interactions. The information collected about these processes will be related to information about children's behavioural styles, which will be collected from questionnaires filled in by parents and from playing a short game with the researcher. This study is being conducted by Masters' student Carly Burgess, and supervised by Dr. Myron Friesen and Dr. Veronica O'Toole from the College of Education at the University of Canterbury (please see contact details below).

What does the study involve?
If you choose to participate in the study, you will be asked to complete two questionnaires, included in this pack, regarding your son/daughter who is four years of age. The questionnaires will take about ten minutes to complete. You will also be asked to give consent for your child to meet the interviewer, Carly Burgess, on early childhood centre grounds which is a safe, familiar environment, so that she can complete a brief five minute game with your child, then read a series of four short stories about bears that revolve around relationships with peers. During each story, the researcher will ask a series of questions about how your child would think or feel in the situation presented in the story (taking about 20-25 minutes). You have the option to attend your child's interview if you wish. If this is the case, please be sure to check the box indicating this on the consent form and provide phone contact details so we may inform you of the allocated time. If the allocated time does not suit, and you wish to be present for the interview, we will contact you to make arrangements to conduct the interview at the Pukemanu - Dovedale Centre at the University of Canterbury, College of Education campus.

After you provide written consent, at the centreyour child will be asked if they would like to be involved in the activity and will be given numerous opportunities to opt out if they change their minds about participating. Participation is voluntary, and you or your child may withdraw from participation at any time. If you participate, but decide to withdraw your information at a later date, you may contact the researchers and ask for your and your child's data to be removed. This can be done until analysis of data begins in December 2014. Your child's participation in the task and other information collected in the study will in no way have any bearing on their education and is not a part of any educational assessment.

Who will have access to the information that is collected and what will happen with the information?
Any information collected in this study will be confidential and securely stored. Only the researcher and supervisors will have access to the information as is required. The results from the study are intended to be published as a thesis, and will therefore be accessible via the University of Canterbury library, and there is also a possibility for the results to be further published in an academic journal. However, all data that is published is done so at group level, not individually, and any individual quotes would be edited so that no identifying information is given. Following publication of the study, data will be kept for a minimum period of five years, and then destroyed. A summary of the overall findings at a group level will be

sent to parents if requested on the Contact Details Form (included in information pack). No specific details will be given out as the information collected is used only to analyze patterns, and not to make any judgments about a child's individual functioning.

Are there any benefits or risks involved?
Due to the common nature of the social situations depicted in the stories and the style of questions which are tailored to be similar to those encountered in a classroom environment, there are no foreseeable physical or psychological risks. However, if there is any sign that your child is not totally comfortable during the interview, the session will be sensitively terminated and your child returned to the class. In this instance your child will still be thanked for their time with a small item, such as stickers or a pencil, and the teacher informed of the reasons for early termination of the session. Any significant details about this will then be passed on to parents.

As thanks for your time, you will be sent a $10 gift voucher and your child will be able to choose from stickers or a pencil after his/her interview. To receive this you will need to fill in the two questionnaires, consent form and contact details form. Whether your child chooses to participate or not will NOT affect you receiving the voucher.

The study has also received ethical approval from the University of Canterbury Human Ethics Committee. If you have any questions or concerns about the content of the questionnaires or the procedures involved in the tasks/interview conducted with your child please feel free to contact the researchers via the details listed above, or you may contact the Human Ethics Committee directly at:

The Chair
University of Canterbury Human Ethics Committee
Private Bag 4800
Christchurch
Email: human-ethics@canterbury.ac.nz

What if I require further information about the study or my involvement in it?
You are free to contact the researchers via the details below, if you have any questions or concerns, or would like an update on the research findings or a summary of results.

We appreciate your time in considering this study, and very much appreciate your assistance. Should you choose to participate please sign the consent form enclosed, fill in the two questionnaires about your child, and provide contact details so we may send you the gratuity gift vouchers. Please place all forms inside the envelope provided to be returned to the early childhood teacher. We will then arrange a time with the early childhood centre to come and interview your child during school hours.

Regards,
Carly Burgess (Primary Investigator)
Masters Student, University of Canterbury
Ph: (03) 364 2987 ext. 44235
Email: clb103@uclive.ac.nz

Dr Myron Friesen (Primary Supervisor)
School of Educational Studies and Human Development, University of Canterbury
Ph: (03) 364 2987 ext. 8914
Email: myron.friesen@canterbury.ac.nz

Dr Veronica O'Toole (Secondary Supervisor)
School of Educational Studies and Human Development, University of Canterbury
Ph: (03) 364 2987 ext. 44138
Email: veronica.otoole@canterbury.ac.nz

May 2014

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Development of Social Information-processing and Emotion Processes in Early Childhood

Consent Form

Please carefully read the information below, then sign and date in the provided spaces.

By signing this form I acknowledge that I have read and understood the information provided in the Parent Information Letter, particularly that:

- I will fill in two questionnaires about my child's behavioural and emotional styles
- My child will be interviewed for approximately 30 minutes in school time on school grounds
- Participation is voluntary for me and my child. Whether or not I or my child chooses to participate will not affect my relationship with the researchers or the University of Canterbury, or my child's early childhood centre. Participation will not have any bearing on my child's education.
- I have the right to stop my or my child's involvement at any time and request that the information about me/my child be withdrawn from the study. This can be done until analysis of data begins in December 2014.
- My personal information will be confidential, being read only by the researchers, and stored securely in a locked cabinet.

I give permission for my child _____ to be interviewed by the researcher on early childhood centre grounds, and am aware that my child has the opportunity to decline if he/she does not want to participate. I understand that no pressure will be placed on my child to participate, and their participation is their choice. Every care will be taken to ensure my child is comfortable with the procedures.

I would like to be present for my child's interview ☐ Phone: _____-_____

I give permission for the researchers in this study to use my responses from the two questionnaires and the answers from my child's interview as data in the study, and for the data to be used and published, provided that my and my child's personal information is kept confidential.

Name (please print)

_____

Signature

_____

Date

_____

May 2014

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Contact Details Form

Dear Parents and Caregivers,

As a thank you for your participation in this study, you will be sent a $10 grocery voucher. In order to receive this, please ensure that you have:

- Filled in the two questionnaires about your child (who was identified as being in the right age group for the study)
- Signed the consent form, allowing the researchers to ask your child if they would like to participate in the interview
- Filled in your contact details below

Postal address

Please fill in your email contact details below if you would like an electronic copy of the summary of findings from the study:

Email address

☐ Or tick this box if you would prefer us to post the summary of results to your home address provided above.

In the eventuality of a follow up study occurring, would you be interested in participating again?

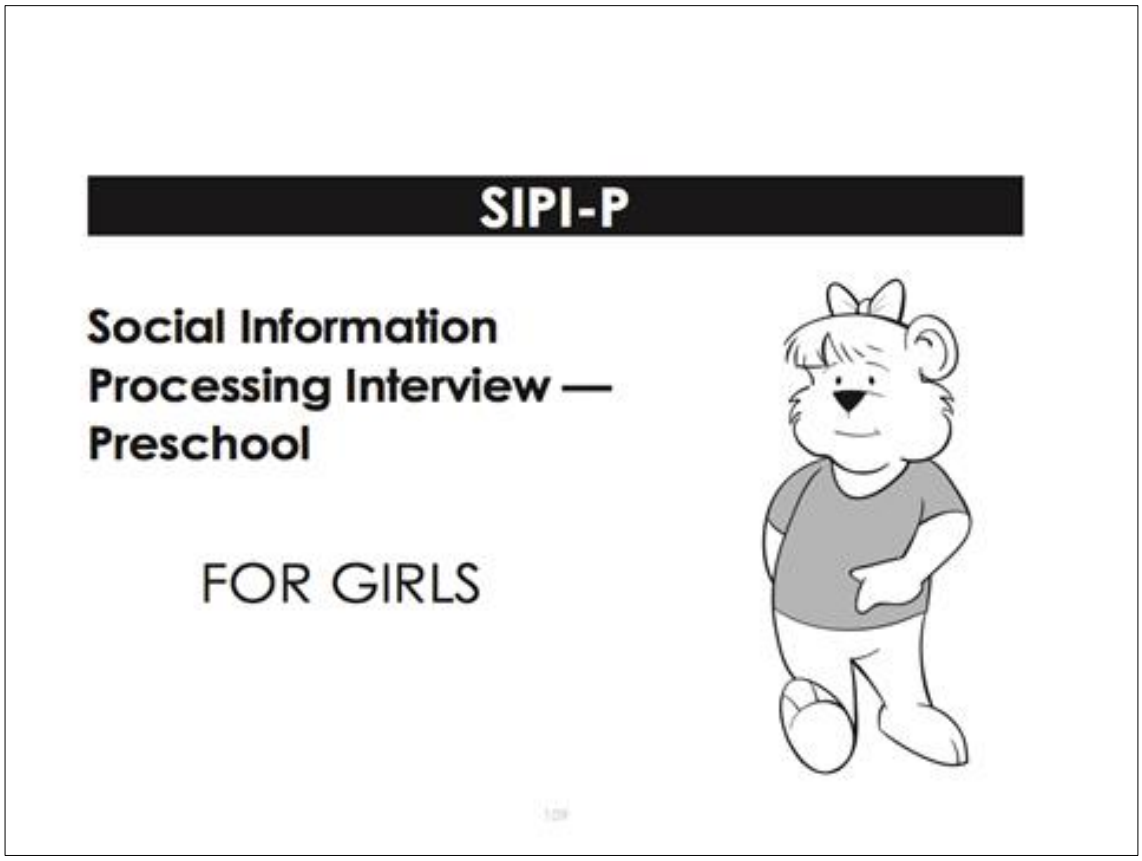
☐ Yes ☐ No

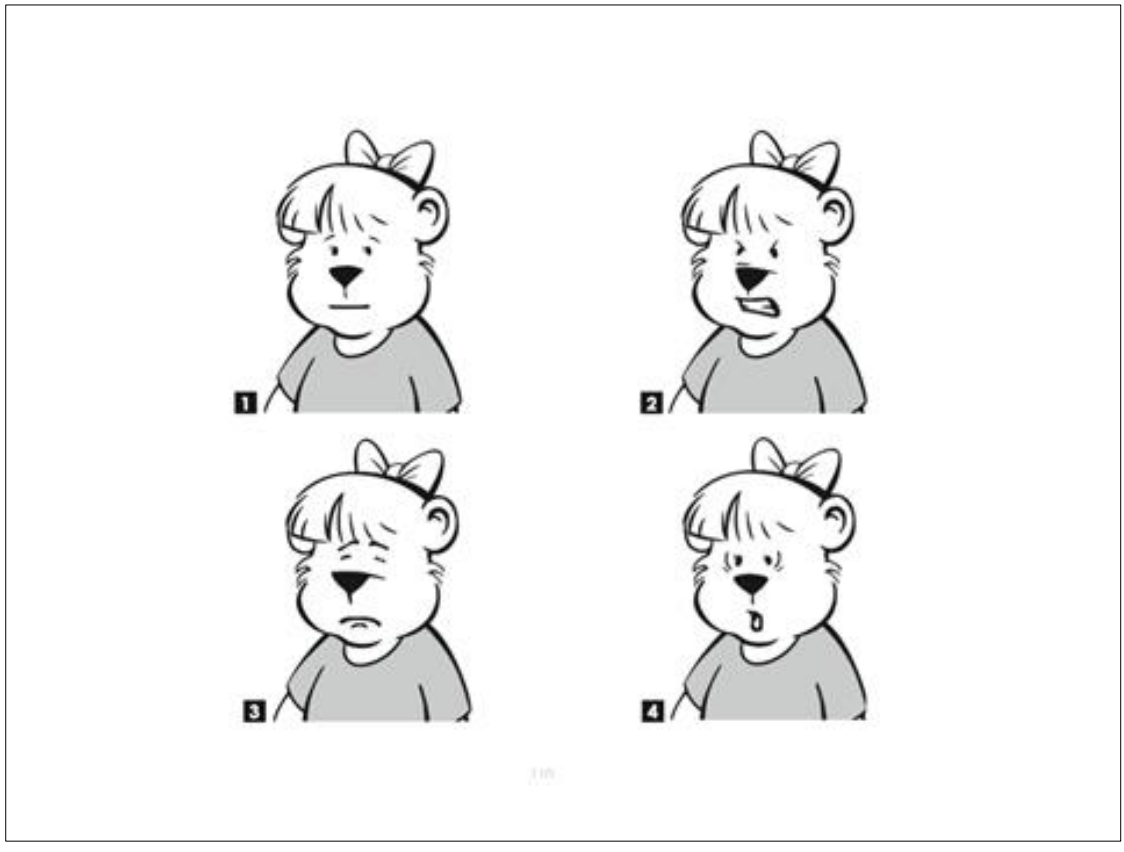
If you answered "yes" above, may we contact you via the email address provided above? (Your email address will NOT be given to any other party and will NOT be used for any other purpose)

☐ Yes ☐ No

Please place the 2 questionnaires, signed consent form and contact details form in the postage paid, addressed envelope provided and post.

Appendix D: ***Revised SIPI-P Interview (Girls version as example)***





CIRCLE ALL THE PICTURES AND SAY: **Look at all the bears on this page.**

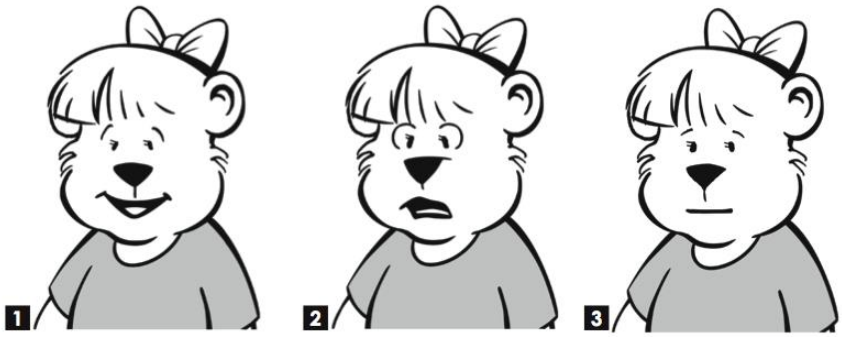
EM1: **Point to the angry bear.** CORRECT: PICTURE 2

EM2: **Point to the surprised bear.** CORRECT: PICTURE 4

EM3: **Point to the sad bear.** CORRECT: PICTURE 3

IF CHILD POINTS TO THE WRONG BEAR, POINT TO THE RIGHT ONE AND SAY:
Usually, people think this is the (angry/surprised/sad) bear.

Let's look at some more bears.



CIRCLE ALL THE PICTURES AND SAY: **Look at all the bears on this page.**

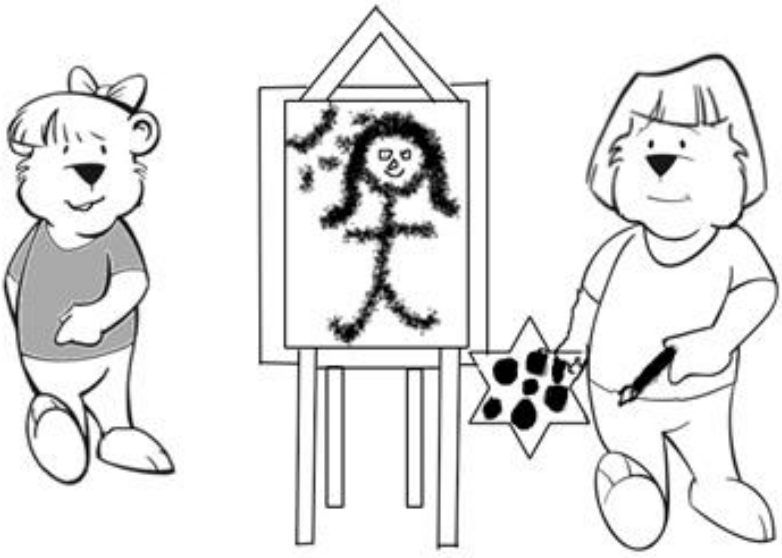
EM4: **Point to the happy bear.** CORRECT: PICTURE 1

EM5: **Point to the bear who looks afraid.** CORRECT: PICTURE 2

IF CHILD POINTS TO THE WRONG BEAR, POINT TO THE RIGHT ONE AND SAY:
Usually, people think this is the (happy/afraid) bear.

Now I am going to tell you a few stories about a bear named Lisa.

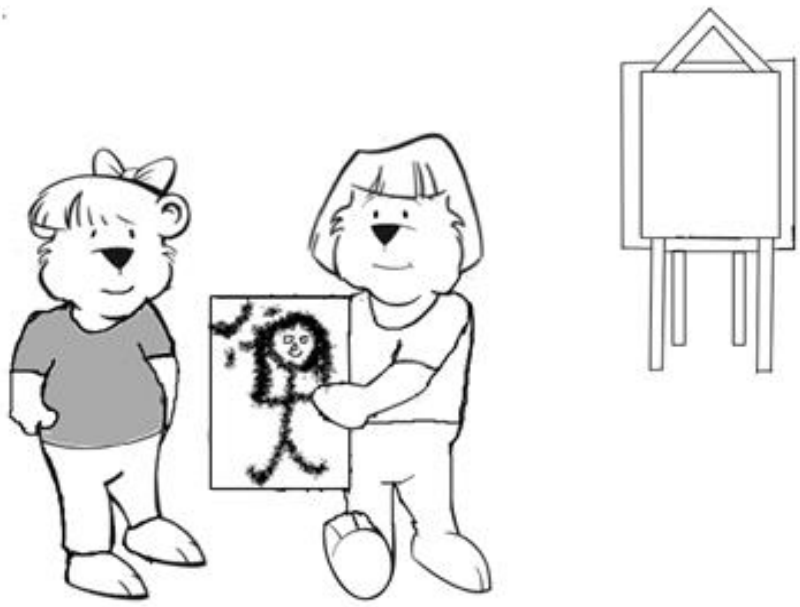
POINT TO LISA. This is Lisa. She's wearing a dark shirt and she's in all of the stories. Im going to ask you some questions about the stories. There are no right or wrong answers. I just want to know what you think. Are you ready?



STORY: **Painting a Picture**

POINT TO LISA. **In this story Lisa is walking over to a child that is painting a picture.**

POINT TO OTHER CHILD. **This is the child that is painting a picture.**



POINT TO OTHER CHILD. **The other child picks up their painting and offers it to Lisa.**

PAUSE BEFORE TURNING PAGE.

A1. **Now, tell me what happened from the beginning of this story to the end.**

PROBE IF ANY OF THE THREE PARTS OF THE STORY ARE MISSING OR INCORRECT.
ASK QUESTIONS II AND III ONLY IF THE CHILD RESPONDS "NO" TO THE FIRST, CORRECT QUESTION.

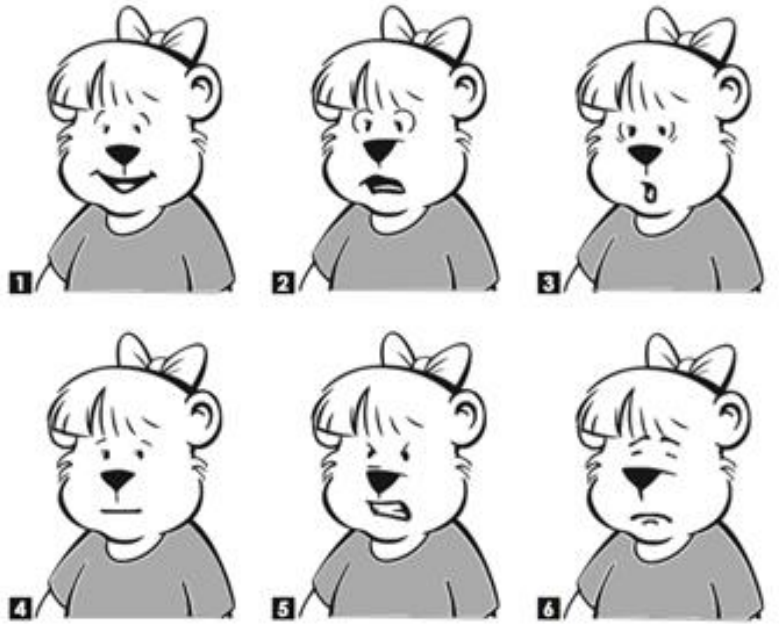
A1a. **At the beginning of the story,**
- I. ***Was Lisa walking over to the child that was painting a picture**
- II. **Was Lisa coloring a picture?**
- III. **Was Lisa playing a video game?**

A1b. **In (the next part of) the story,**
- I. ***Is another child painting a picture?**
- II. **Is another child playing a board game?**
- III. **Is another child playing a video game?**

A1c. **At the end of the story,**

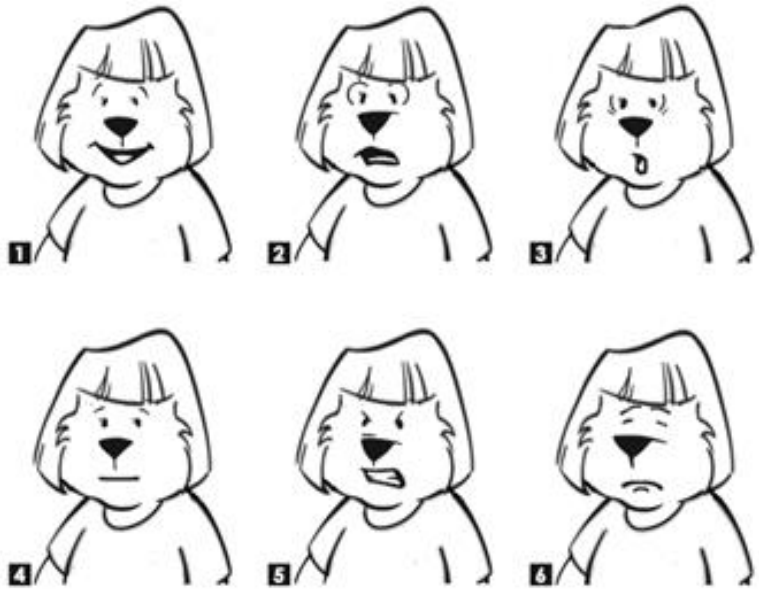
A
- I. ***Does the other child pick up the painting and offer it to Lisa?**
- II. **Does the other child ignore Lisa and carry on painting?**
- III. **Does the other child finish their painting and then walk away?**

*The correct response is "yes".



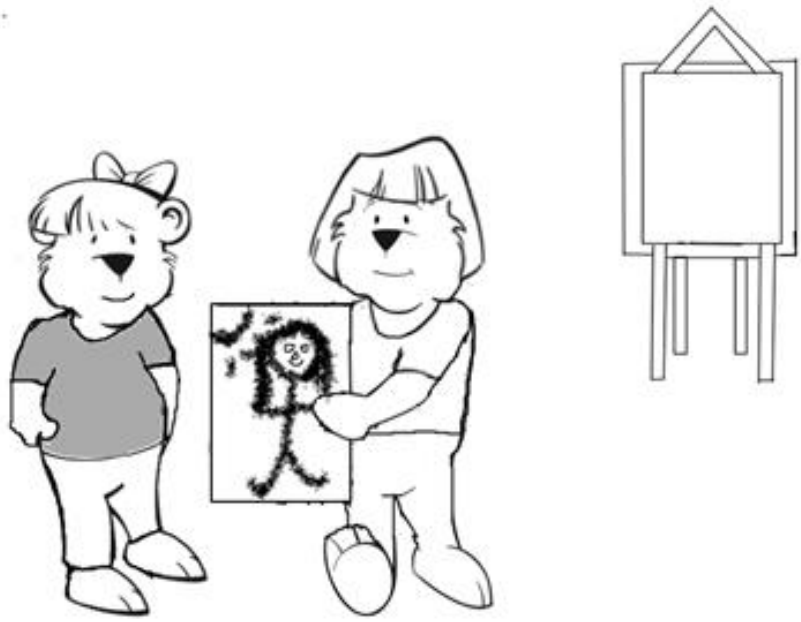
A2a. POINT TO THE FACES AND SAY: **Point to the picture that shows how Lisa feels after the other child offers her their painting.**

Picture 1: **Does Lisa feel happy?**
Picture 2: **Does Lisa feel afraid?**
Picture 3: **Does Lisa feel surprised?**
Picture 4: **Does Lisa not really care?**
Picture 5: **Does Lisa feel angry?**
Picture 6: **Does Lisa feel sad?**



A2b. CIRCLE ALL THE FACES AND SAY: **Point to the picture that shows how the other child feels when she offers Lisa her painting.**

Picture 1: **Does the other girl feel happy?**
Picture 2: **Does the other girl feel afraid?**
Picture 3: **Does the other girl feel surprised?**
Picture 4: **Does the other girl not really care?**
Picture 5: **Does the other girl feel angry?**
Picture 6: **Does the other girl feel sad?**



A3. POINT TO OTHER CHILD AND SAY: **Why do you think the other child gave Lisa their painting?**

IF THE CHILD DOES NOT RESPOND, MOVE TO NEXT QUESTION

A4. POINT TO OTHER CHILDREN AND SAY: **Do you think the other child who gave Lisa their painting is mean or not mean?**

A5. **Pretend that someone gave you their painting? How would you feel?**

Picture 1: **Would you feel happy?**
Picture 2: **Would you feel afraid?**
Picture 3: **Would you feel surprised?**
Picture 4: **Would you not really care?**
Picture 5: **Would you feel angry?**
Picture 6: **Would you feel sad?**

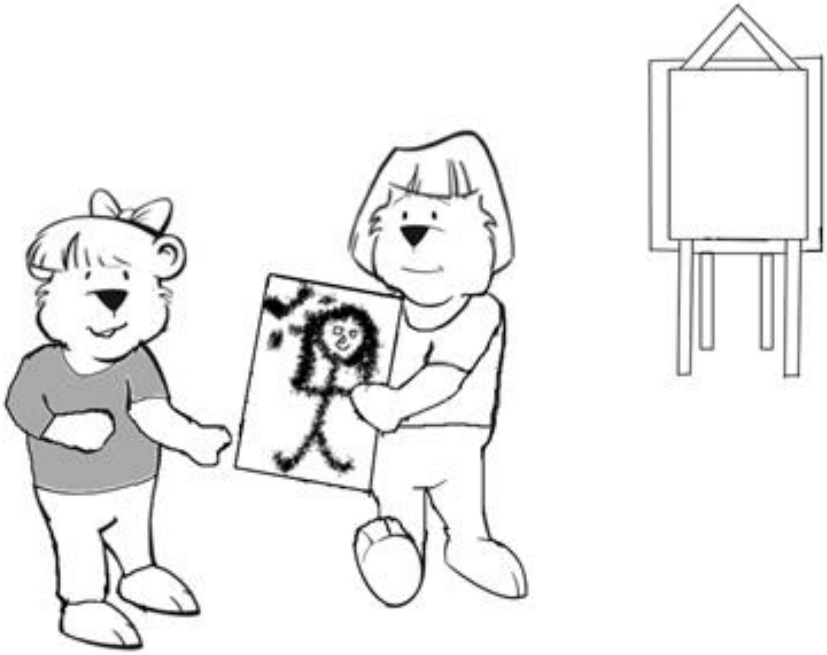
A6. **So you would feel** (REPEAT IDENTIFIED EMOTION). **How** (IDENTIFIED EMOTION) **would you feel?**
Would you feel a little bit (IDENTIFIED EMOTION) **or a lot** (IDENTIFIED EMOTION)**?**

A7. **Why would you feel** (IDENTIFIED EMOTION)**?**

A8. **What would you say or do if someone offered to give you their painting?**

IF CHILD DOES NOT RESPOND, SAY: **What would you say or do if a painting was offered to you from someone in your class?**

Now, let me show you some different things that Lisa could say or do.



POINT TO LISA. **Lisa could accept the painting and say 'thank you'.**

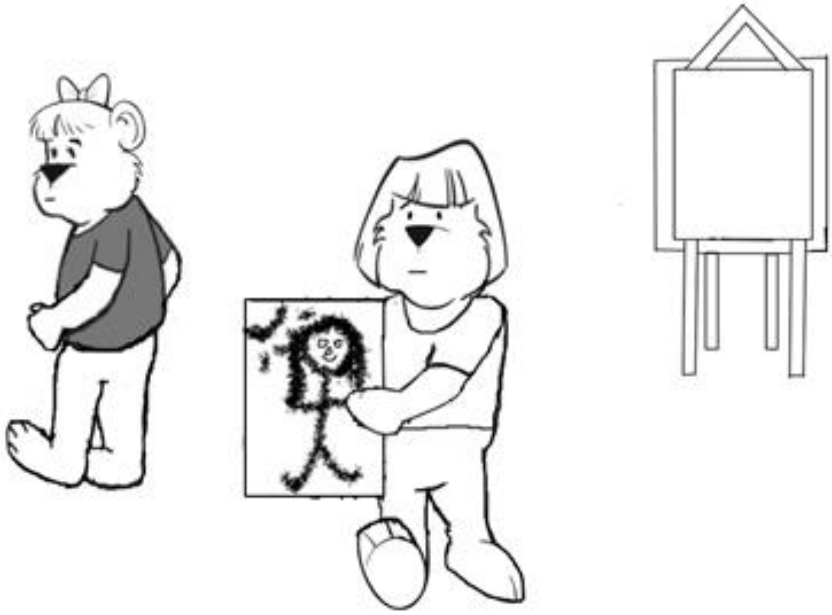
A9. **Is this a good thing or a bad thing for Lisa to do?**

A10. **If Lisa did that, do you think the other child would like her?**

A11. **Do you think the other child would give Lisa a painting another time if she did that?**

A12. POINT TO THE OTHER CHILD. **How would the other child feel if Lisa accepted the painting and said 'thank you'?**

Now, I'll show you something else that Lisa could do.



POINT TO LISA. **Lisa could just walk away and not accept the painting.**

A13. **Is this a good thing or a bad thing for Lisa to do?**

A14. **If Lisa did that, do you think the other child would like her?**

A15. **Do you think the other child would give Lisa a painting another time if she did that?**

A16. POINT TO THE OTHER CHILD. **How would the other child feel if Lisa just walked away and did not accept the painting?**

Now, I'll show you something else that Lisa could do.

POINT TO LISA. **Lisa could take the painting from the child and rip it up.**

A17. **Is this a good thing or a bad thing for Lisa to do?**

A18. **If Lisa did that, do you think the other child would like her?**

A19. **Do you think the other child would give Lisa a painting another time if she did that?**

A20. POINT TO THE OTHER CHILD. **How would the other child feel if Lisa took the painting from the child and ripped it up?**

Now, lets look at another story.

STORY: **Playdough**

In this story, these children are playing with playdough.

POINT TO CHILD SITTING UP. **This child says: "Hey, let'a make a zoo."**

POINT TO CHILD LYING DOWN. **This child says: "Yes, with all kinds of animals. ... You know, Lisa wanted to play, too."**

POINT TO LISA. **Lisa is watching the other children playing.**

POINT TO LISA. **Lisa walks up to the other children and asks them: "Can I play with you?"**

But the other children don't answer and keep playing.

PAUSE BEFORE TURNING PAGE.

B1. **Now, tell me what happened from the beginning of this story to the end.**

PROBE IF ANY OF THE FOUR PARTS OF THE STORY ARE MISSING OR INCORRECT.
ASK QUESTIONS II AND III ONLY IF THE CHILD RESPONDS "No" TO THE FIRST, CORRECT QUESTION.

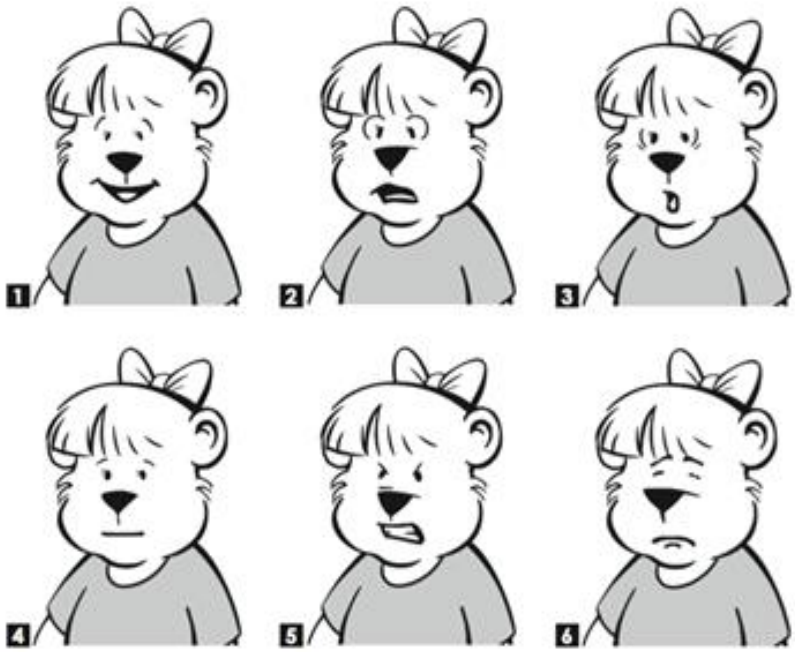
B1a. **At the beginning of the story,**
- I. ***Were the children making zoo animals with play dough?**
- II. **Were the children playing ball outside?**
- III. **Were the children coloring pictures?**

B1b. **In (the next part of) the story,**
- I. ***Did one of the children say that Lisa wanted to play with the play dough too?**
- II. **Did one of the children say that Lisa wanted to play with some other toys?**
- III. **Did one of the children say that Lisa wanted to go outside?**

B1c. **In (the next part of) the story,**
- I. ***Does Lisa walk up to the other children and ask to play with them?**
- II. **Does Lisa walk up to the other children and say "Let's play something else."?**
- III. **Does Lisa walk up to the other children and say "Do you want to go outside and play?"**

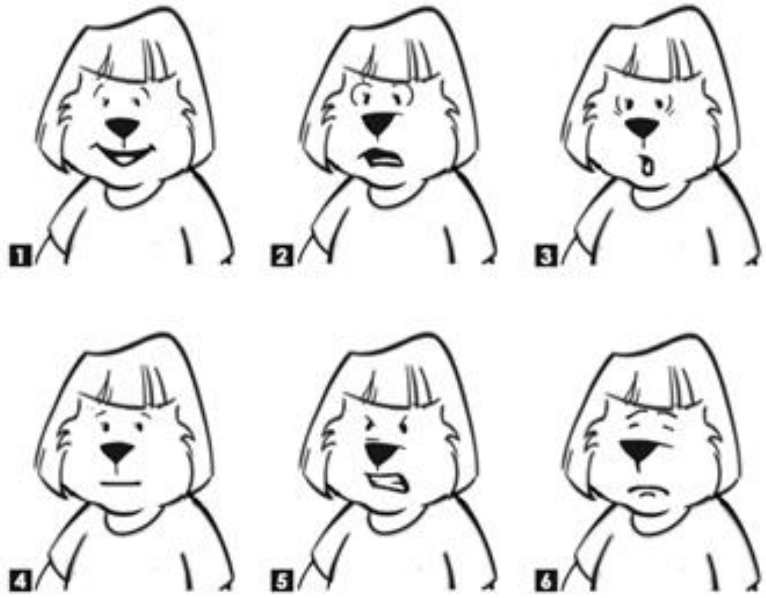
B1d. **At the end of the story,**
- I. ***Do the other children keep playing without answering Lisa?**
- II. **Do the other children put away the play dough without answering Lisa?**
- III. **Do the other children keep playing and say, "Come play with us Lisa."?**

*The correct response is "yes".



B2a. POINT TO THE FACES AND SAY: **Point to the picture that shows how Lisa feels after the other children do not answer her question.**

Picture 1: **Does Lisa feel happy?**
Picture 2: **Does Lisa feel afraid?**
Picture 3: **Does Lisa feel surprised?**
Picture 4: **Does Lisa not really care?**
Picture 5: **Does Lisa feel angry?**
Picture 6: **Does Lisa feel sad?**



B2b. CIRCLE ALL THE FACES AND SAY: **Point to the picture that shows how the other children feel when they don't answer Lisa and keep playing.**

Picture 1: **Do the other children feel happy?**
Picture 2: **Do the other children feel afraid?**
Picture 3: **Do the other children feel surprised?**
Picture 4: **Do the other children not really care?**
Picture 5: **Do the other children feel angry?**
Picture 6: **Do the other children feel sad?**

B3. POINT TO OTHER CHILD AND SAY: **Why do you think the other children don't answer Lisa?**

IF THE CHILD DOES NOT RESPOND, MOVE TO NEXT QUESTION

B4. POINT TO OTHER CHILDREN AND SAY: **Do you think the other children who didn't answer are mean or not mean?**

B5. **Pretend that you ask the girls if you can play and they don't answer and keep playing. How would you feel?**

Picture 1: **Would you feel happy?**
Picture 2: **Would you feel afraid?**
Picture 3: **Would you feel surprised?**
Picture 4: **Would you not really care?**
Picture 5: **Would you feel angry?**
Picture 6: **Would you feel sad?**

B6. **So you would feel** (REPEAT IDENTIFIED EMOTION). **How** (IDENTIFIED EMOTION) **would you feel?**
Would you feel a little bit (IDENTIFIED EMOTION) **or a lot** (IDENTIFIED EMOTION)**?**

B7. **Why would you feel** (IDENTIFIED EMOTION)**?**

B8. **Pretend that you ask the girls if you can play and they don't answer and keep playing. What would you do?**

IF CHILD DOES NOT RESPOND, SAY: **What would you say or do if other girls in your class did this when you asked if you could play?**

Now, let me show you some different things that Lisa could say or do.

POINT TO LISA. **Lisa could stomp on the play dough and say, "You better let me play or I'll hit you!"**

B9. **Is this a good thing or a bad thing for Lisa to do?**

B10. **If Lisa did that, do you think the other children would like her?**

B11. **Do you think the other children would let her play if she did that?**

B12. POINT TO THE OTHER CHILD. **How would the other children feel if Lisa stomped on the play dough and said, "You better let me play or I'll hit you!"?**

Now, I'll show you something else that Lisa could do.

POINT TO LISA. Lisa could start crying and say to the other children: "You don't like me!"

B13. Is this a good thing or a bad thing for Lisa to do?

B14. If Lisa did that, do you think the other children would like her?

B15. Do you think the other children would let her play if she did that?

B16. POINT TO THE OTHER CHILD. How would the other children feel if Lisa cried and said "You don't like me!"?

Now, I'll show you something else that Lisa could do.

POINT TO LISA. **Lisa could tell the other children, "If you let me play with you, I can show you how to make all kinds of animals. I even know how to make a giraffe."**

B17. **Is this a good thing or a bad thing for Lisa to do?**

B18. **If Lisa did that, do you think the other children would like her?**

B19. **Do you think the other children would let her play if she did that?**

B20. POINT TO THE OTHER CHILD. **How would the other children feel if Lisa said "If you let me play with you, I can show you how to make all kinds of animals. I even know how to make a giraffe"?**

Now, let's look at another story.

STORY: **Spilled Water**

POINT TO LISA. **In this story, Lisa is sitting at the table eating her lunch.**

POINT TO OTHER CHILD. **Another child walks by.**

POINT TO OTHER CHILD. **When the other child walks by the table, she spills Lisa's water cup. The other child says "Oops".**

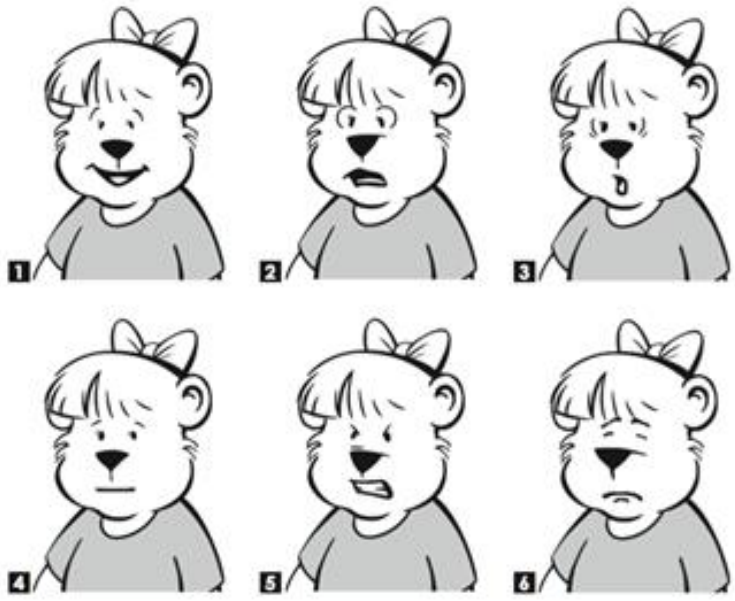
C1. **Now, tell me what happened from the beginning of this story to the end.**

PROBE IF EITHER OF THE TWO PARTS OF THE STORY ARE MISSING OR INCORRECT. ASK QUESTIONS II and III ONLY IF THE CHILD RESPONDS "No" TO THE FIRST, CORRECT QUESTION.

C1a. **At the beginning of the story,**
I. ***Does another child walk by while Lisa is sitting at the table eating her lunch?**
II. **Does a teacher walk by while Lisa is sitting at the table eating her lunch?**
III. **Does a child sit down next to Lisa while Lisa is eating her lunch?**

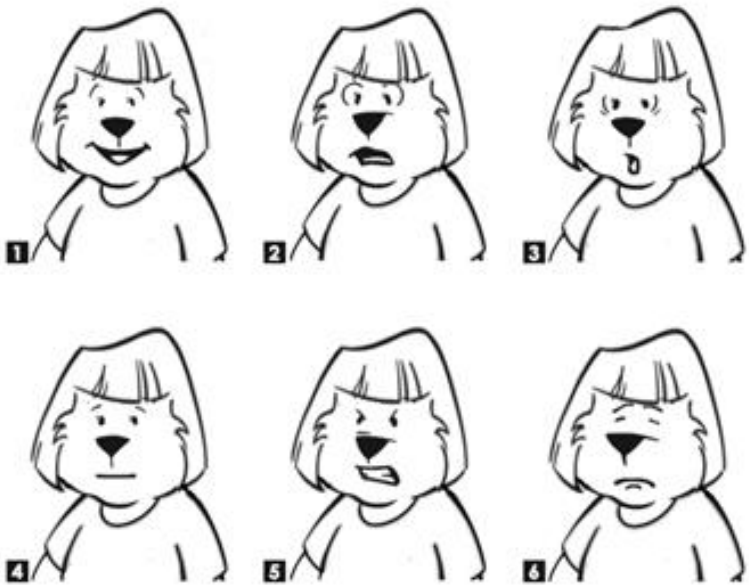
C1b. At the end of the story,
I. ***Does the other child spill Lisa's water and say "Oops"?**
II. **Does a teacher spill Lisa's water and say "Oops"?**
III. **Does the other child almost spill Lisa's water and say "Oops"?**

*The correct response is "yes".



C2a. POINT TO THE FACES AND SAY: **Point to the picture that shows how Lisa feels after the other child spilled her water.**

Picture 1: **Does Lisa feel happy?**
Picture 2: **Does Lisa feel afraid?**
Picture 3: **Does Lisa feel surprised?**
Picture 4: **Does Lisa not really care?**
Picture 5: **Does Lisa feel angry?**
Picture 6: **Does Lisa feel sad?**



C2b. CIRCLE ALL THE FACES AND SAY: **Point to the picture that shows how the other child feels after she spills Lisa's water.**

Picture 1: **Does the other girl feel happy?**
Picture 2: **Does the other girl feel afraid?**
Picture 3: **Does the other girl feel surprised?**
Picture 4: **Does the other girl not really care?**
Picture 5: **Does the other girl feel angry?**
Picture 6: **Does the other girl feel sad?**

C3. POINT TO OTHER CHILD AND SAY: **Why do you think the other child spilt the water?**

IF THE CHILD DOES NOT RESPOND, MOVE TO NEXT QUESTION

C4. POINT TO OTHER CHILD AND SAY: **Do you think the child who spilled the water was mean or not mean?**

C5. **How would you feel if you were eating lunch and someone spilled your water?**

Picture 1: **Would you feel happy?**
Picture 2: **Would you feel afraid?**
Picture 3: **Would you feel surprised?**
Picture 4: **Would you not really care?**
Picture 5: **Would you feel angry?**
Picture 6: **Would you feel sad?**

C6. **So you would feel** (REPEAT IDENTIFIED EMOTION). **How** (IDENTIFIED EMOTION) **would you feel?**
Would you feel a little bit (IDENTIFIED EMOTION) **or a lot** (IDENTIFIED EMOTION)**?**

C7. **Why would you feel** (IDENTIFIED EMOTION)**?**

C8. **What would you say or do if you were eating lunch and someone spilled your water?**

IF THE CHILD DOES NOT RESPOND, SAY: **What would you say or do if this happened to you?**

Now, let me show you some different things that Lisa could say or do.

POINT TO LISA. **Lisa could say to the other child, "You better clean this up and bring me more water or else...".**

C9. **Is this a good thing or a bad thing for Lisa to say?**

C10. **If Lisa said that, do you think the other child would like her?**

C11. **Do you think the other child would help her clean up if she said that?**

C12. POINT TO THE OTHER CHILD. **How would the other child feel if Lisa said "You better clean this up and bring me more water or else..."?**

Now, I'll show you something else that Lisa could do.

POINT TO LISA. **Lisa could put her head on the table, cry real hard, and not say anything.**

C13. **Is this a good thing or a bad thing for Lisa to do?**

C14. **If Lisa did that, do you think the other child would like her?**

C15. **Do you think the other child would help her clean up if she did that?**

C16. POINT TO THE OTHER CHILD. **How would the other child feel if Lisa put her head on the table, cried real hard, and didn't say anything?**

Now, I'll show you something else that Lisa could do.

POINT TO LISA. **Lisa could say, "You weren't very careful, could you help me clean it up?"**

C17. **Is this a good thing or a bad thing for Lisa to say?**

C18. **If Lisa said that, do you think the other child would like her?**

C19. **Do you think the other child would help her clean up if she said that?**

C20. POINT TO THE OTHER CHILD. **How would the other child feel if Lisa said "You weren't very careful, could you help me clean it up"?**

Now, let's look at another story.

STORY: **Lunch time**

POINT TO LISA. **In this story Lisa is walking over to a child that is eating their lunch.**

POINT TO OTHER CHILD. **This is the child that is eating their lunch.**

POINT TO OTHER CHILD. **The other child picks up the banana and offers it to Lisa.**

PAUSE BEFORE TURNING PAGE.

D1. **Now, tell me what happened from the beginning of this story to the end.**

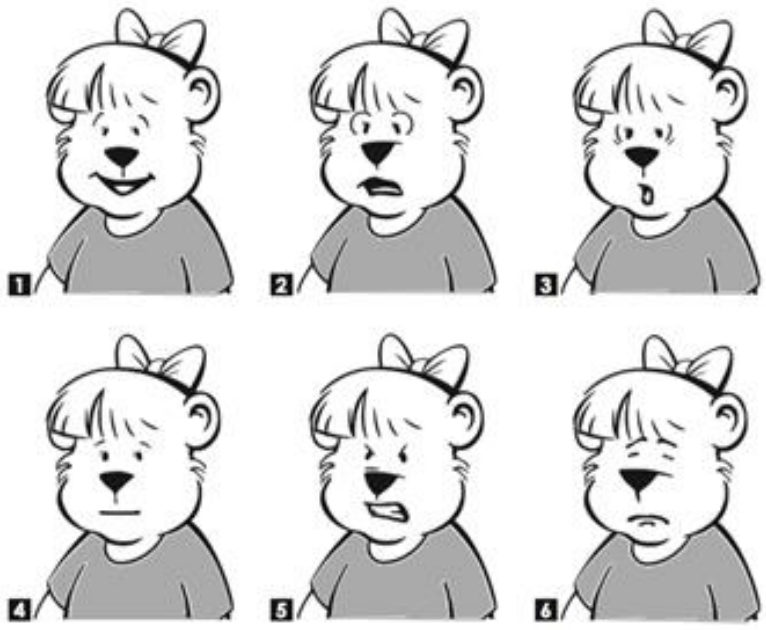
PROBE IF ANY OF THE THREE PARTS OF THE STORY ARE MISSING OR INCORRECT.
ASK QUESTIONS II AND III ONLY IF THE CHILD RESPONDS "NO" TO THE FIRST, CORRECT QUESTION.

D1a. **At the beginning of the story,**
- I. ***Was Lisa walking over to the child that was eating his lunch?**
- II. **Was Lisa eating her lunch?**
- III. **Was Lisa playing a video game?**

D1b. **In (the next part of) the story,**
- I. ***Is another child eating their lunch?**
- II. **Is another child painting a picture?**
- III. **Is another child playing a video game?**

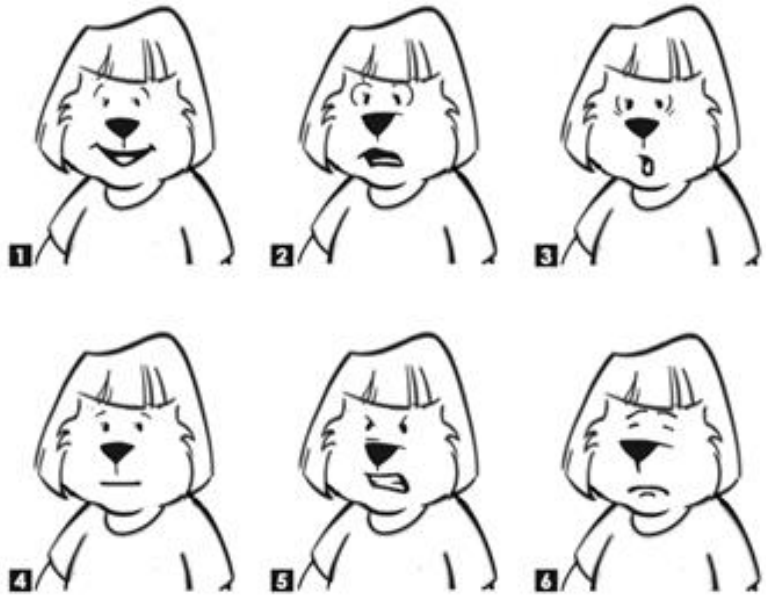
D1c. **At the end of the story,**
- I. ***Does the other child pick up their banana and offer it to Lisa?**
- II. **Does the other child ignore Lisa and carry on eating?**
- III. **Does the other child finish their lunch and then walk away?**

*The correct response is "yes".



D2a. POINT TO THE FACES AND SAY: **Point to the picture that shows how Lisa feels after the other child offers her their banana.**

Picture 1: **Does Lisa feel happy?**
Picture 2: **Does Lisa feel afraid?**
Picture 3: **Does Lisa feel surprised?**
Picture 4: **Does Lisa not really care?**
Picture 5: **Does Lisa feel angry?**
Picture 6: **Does Lisa feel sad?**



D2b. CIRCLE ALL THE FACES AND SAY: **Point to the picture that shows how the other child feels when she offers Lisa her banana.**

Picture 1: **Does the other girl feel happy?**
Picture 2: **Does the other girl feel afraid?**
Picture 3: **Does the other girl feel surprised?**
Picture 4: **Does the other girl not really care?**
Picture 5: **Does the other girl feel angry?**
Picture 6: **Does the other girl feel sad?**

D3. POINT TO OTHER CHILD AND SAY: **Why do you think the other child gave Lisa their banana?**

IF THE CHILD DOES NOT RESPOND, MOVE TO NEXT QUESTION

D4. POINT TO OTHER CHILDREN AND SAY: **Do you think the other child who gave Lisa their banana is mean or not mean?**

D5. **Pretend that someone gave <u>you</u> their banana? How would you feel?**

Picture 1: **Would you feel happy?**
Picture 2: **Would you feel afraid?**
Picture 3: **Would you feel surprised?**
Picture 4: **Would you not really care?**
Picture 5: **Would you feel angry?**
Picture 6: **Would you feel sad?**

D6. **So you would feel** (REPEAT IDENTIFIED EMOTION). **How** (IDENTIFIED EMOTION) **would you feel?**
Would you feel a little bit (IDENTIFIED EMOTION) **or a lot** (IDENTIFIED EMOTION)**?**

D7. **Why would you feel** (IDENTIFIED EMOTION)**?**

D8. **What would you say or do if someone offered to give you their banana?**

IF CHILD DOES NOT RESPOND, SAY: **What would you say or do if a banana was offered to you from someone in your class?**

Now, let me show you some different things that Lisa could say or do.

POINT TO LISA. **Lisa could accept the banana and say 'thank you'.**

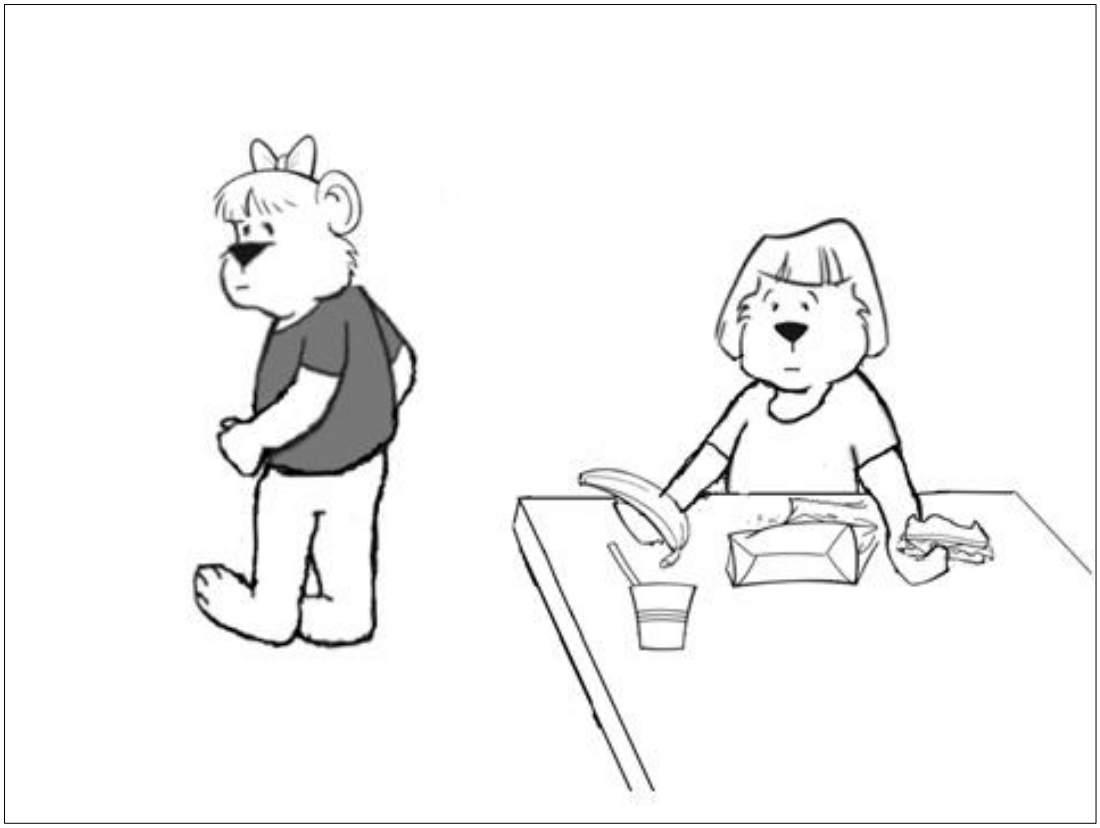
D9. **Is this a good thing or a bad thing for Lisa to do?**

D10. **If Lisa did that, do you think the other child would like her?**

D11. **Do you think the other child would give Lisa some of their lunch another time if she did that?**

D12. POINT TO THE OTHER CHILD. **How would the other child feel if Lisa accepted the banana and said 'thank you'?**

Now, I'll show you something else that Lisa could do.



POINT TO LISA. **Lisa could just walk away and not accept the banana.**

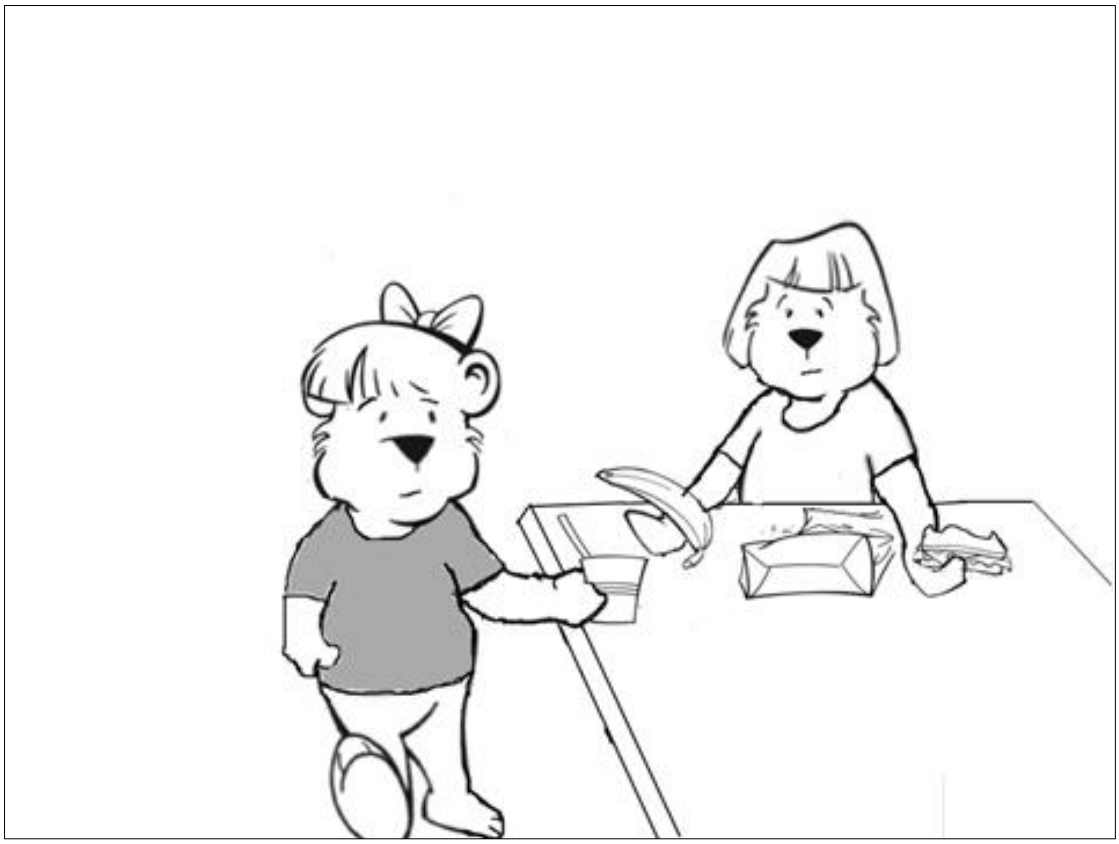
D13. **Is this a good thing or a bad thing for Lisa to do?**

D14. **If Lisa did that, do you think the other child would like her?**

D15. **Do you think the other child would give Lisa some of their lunch another time if she did that?**

D16. POINT TO THE OTHER CHILD. **How would the other child feel if Lisa just walked away and did not accept the banana?**

Now, I'll show you something else that Lisa could do.



POINT TO LISA. **Lisa could take the drink instead without asking.**

D17. **Is this a good thing or a bad thing for Lisa to do?**

D18. **If Lisa did that, do you think the other child would like her?**

D19. **Do you think the other child would give Lisa some of their lunch another time if she did that?**

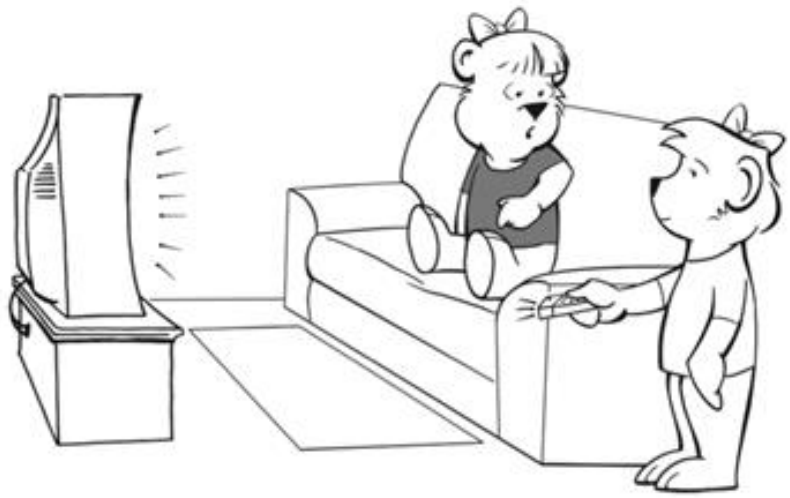
D20. POINT TO THE OTHER CHILD. **How would the other child feel if Lisa took the drink instead without asking?**

Now, let's look at another story.

STORY: **Watching TV**

POINT TO LISA. **In this story Lisa is watching TV.**

POINT TO OTHER CHILD. **Another child comes over to watch TV, too.**



POINT TO OTHER CHILD. **The other child takes the remote control and changes the channel.**

PAUSE BEFORE TURNING PAGE.

E1. **Now, tell me what happened from the beginning of this story to the end.**

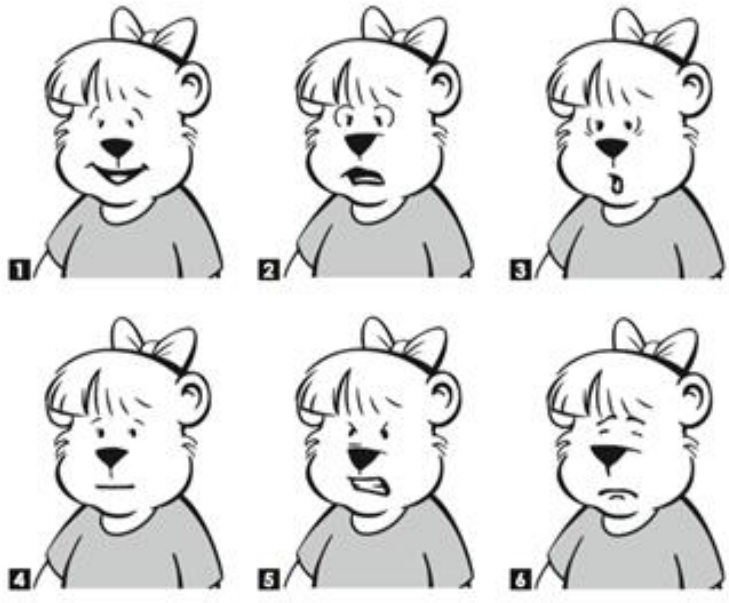
PROBE IF ANY OF THE THREE PARTS OF THE STORY ARE MISSING OR INCORRECT.
ASK QUESTIONS II AND III ONLY IF THE CHILD RESPONDS "NO" TO THE FIRST, CORRECT QUESTION.

E1a. **At the beginning of the story,**
- I. ***Was Lisa watching TV?**
- II. **Was Lisa coloring a picture?**
- III. **Was Lisa playing a video game?**

E1b. **In (the next part of) the story,**
- I. ***Does another child come over to watch TV too?**
- II. **Does another child come over and begin coloring?**
- III. **Does another child come over and begin playing a video game?**

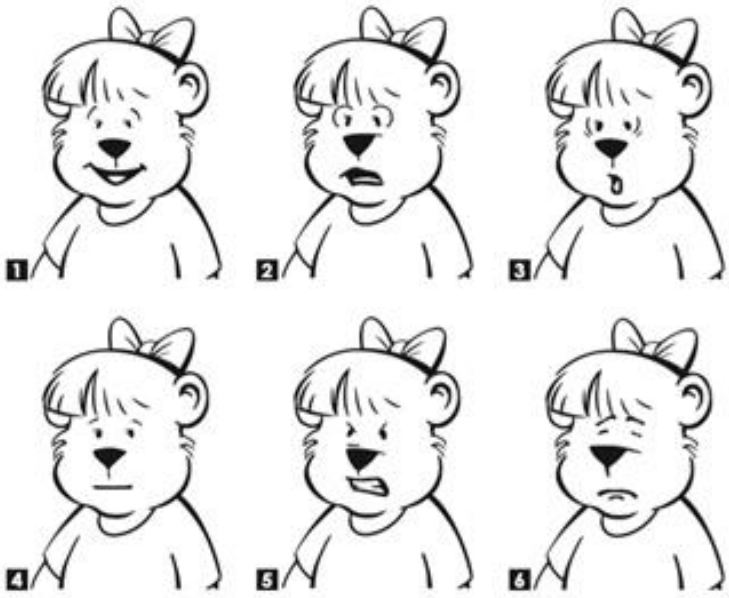
E1c. **At the end of the story,**
- I. ***Does the other child take the remote control and change the channel?**
- II. **Does the other child take the remote control and turn off the TV?**
- III. **Does the other child take the remote control and turn the sound up real high?**

*The correct response is "yes".



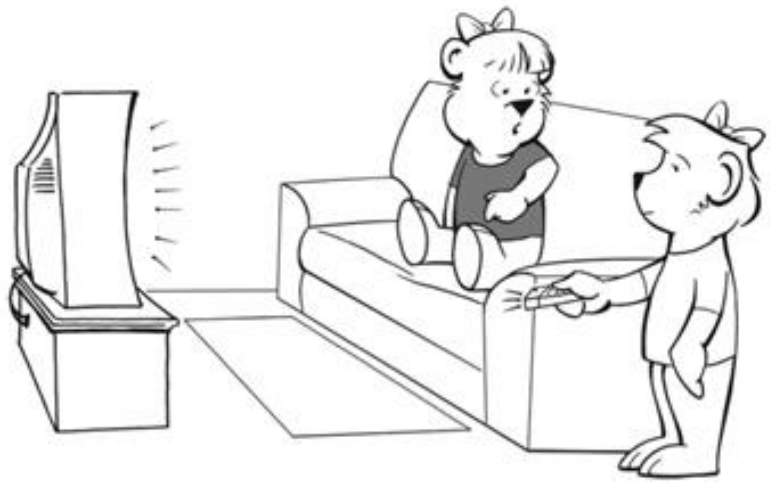
E2a. POINT TO THE FACES AND SAY: **Point to the picture that shows how Lisa feels after the other child takes the remote control and changes the channel.**

Picture 1: **Does Lisa feel happy?**
Picture 2: **Does Lisa feel afraid?**
Picture 3: **Does Lisa feel surprised?**
Picture 4: **Does Lisa not really care?**
Picture 5: **Does Lisa feel angry?**
Picture 6: **Does Lisa feel sad?**



E2b. CIRCLE ALL THE FACES AND SAY: **Point to the picture that shows how the other child feels when she takes the remote control and changes the channel.**

Picture 1: **Does the other girl feel happy?**
Picture 2: **Does the other girl feel afraid?**
Picture 3: **Does the other girl feel surprised?**
Picture 4: **Does the other girl not really care?**
Picture 5: **Does the other girl feel angry?**
Picture 6: **Does the other girl feel sad?**



E3. POINT TO OTHER CHILD AND SAY: **Why do you think the other child took the remote and changed the channel while Lisa was watching the TV?**

IF THE CHILD DOES NOT RESPOND, MOVE TO NEXT QUESTION

E4. POINT TO OTHER CHILD AND SAY: **Do you think the child who took the remote control and changed the channel was mean or not mean?**

E5. **Pretend that you are watching TV and someone takes the remote control and changes the channel. How would you feel?**

Picture 1: **Would you feel happy?**
Picture 2: **Would you feel afraid?**
Picture 3: **Would you feel surprised?**
Picture 4: **Would you not really care?**
Picture 5: **Would you feel angry?**
Picture 6: **Would you feel sad?**

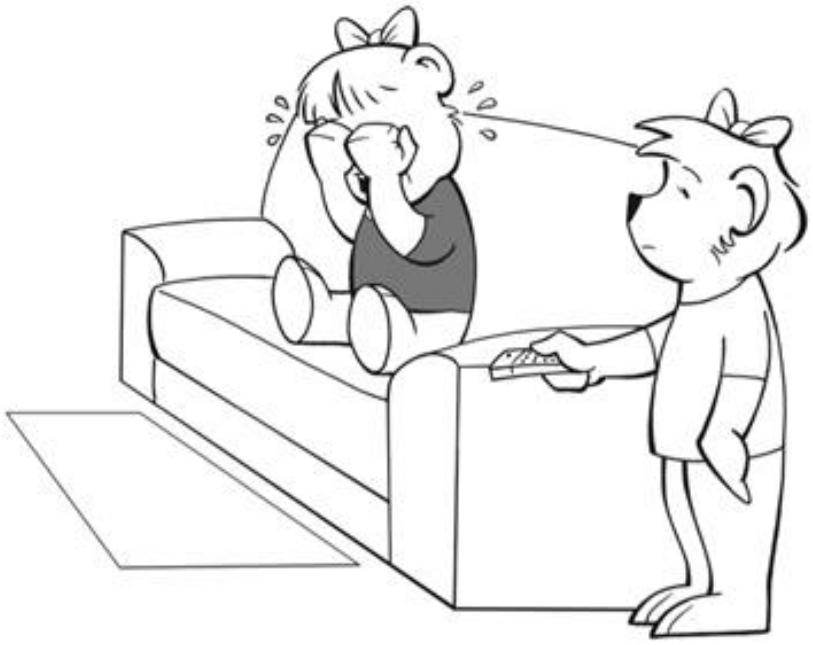
E6. **So you would feel (**REPEAT IDENTIFIED EMOTION**). How (**IDENTIFIED EMOTION**) would you feel?**
Would you feel a little bit (IDENTIFIED EMOTION**) or a lot (**IDENTIFIED EMOTION**)?**

E7. **Why would you feel (**IDENTIFIED EMOTION**)?**

E8. **Pretend that you are watching TV and someone takes the remote control and changes the channel. What would you do?**

IF THE CHILD DOES NOT RESPOND, SAY: **What would you say or do if another child did this while you were watching TV?**

Now, let me show you some different things that Lisa could say or do.



POINT TO LISA. **Lisa could cry and say, "That's not fair."**

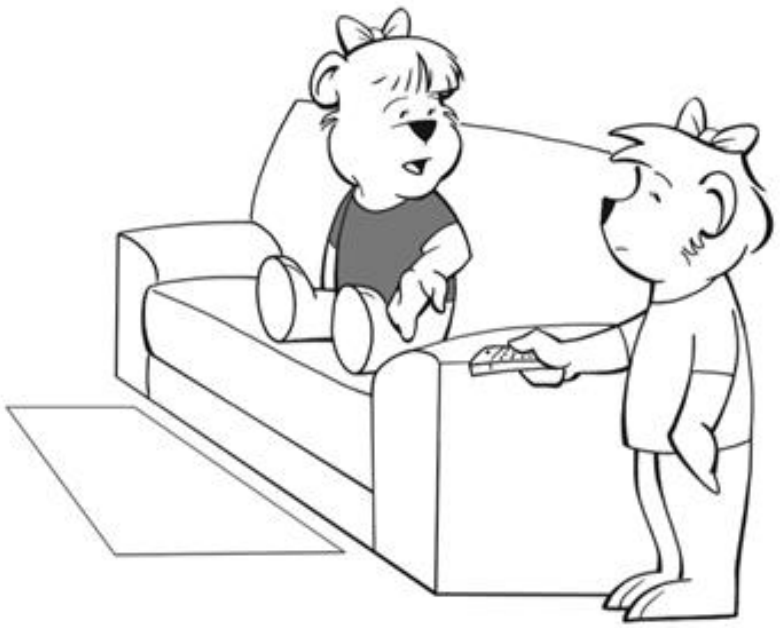
E9. **Is this a good thing or a bad thing for Lisa to do?**

E10. **If Lisa did that, do you think the other child would like her?**

E11. **Do you think the other child would let her watch her show if she did that?**

E12. POINT TO THE OTHER CHILD. **How would the other child feel if Lisa cried and said "That's not fair."?**

Now, I'll show you something else that Lisa could do.



POINT TO LISA. Lisa could say, "I'm watching something now. You can watch your show when I'm done."

E13. Is this a good thing or a bad thing for Lisa to do?

E14. If Lisa did that, do you think the other child would like her?

E15. Do you think the other child would let her watch her show if she did that?

E16. POINT TO THE OTHER CHILD. How would the other child feel if Lisa said "I'm watching something now. You can watch your show when I'm done"?

Now, I'll show you something else that Lisa could do.

POINT TO LISA. **Lisa could say, "Hey! Give it back to me now or I'll hit you!"**

E17. **Is this a good thing or a bad thing for Lisa to do?**

E18. **If Lisa did that, do you think the other child would like her?**

E19. **Do you think the other child would let her watch her show if she did that?**

E20. POINT TO THE OTHER CHILD. **How would the other child feel if Lisa said "Hey! Give it back to me now or I'll hit you!"?**

Now, let's look at one last story.

STORY: **Blocks**

In this story, these children are playing with blocks.

POINT TO CHILD CLOSER TO LISA. **This child says: "These blocks are fun!"**

POINT TO CHILD FARTHEST FROM LISA. **This child says: "Yes. You know, Lisa also wanted to play with me in the block area."**

POINT TO LISA. **Lisa is watching the other children playing.**

POINT TO LISA. **Lisa walks up to one of the children and asks her, "Can I play with you?"**

POINT TO THE CHILD FARTHEST FROM LISA. **This child says: " Sorry. The teacher said only two can play in the block area."**

F1. Now, tell me what happened from the beginning of this story to the end.

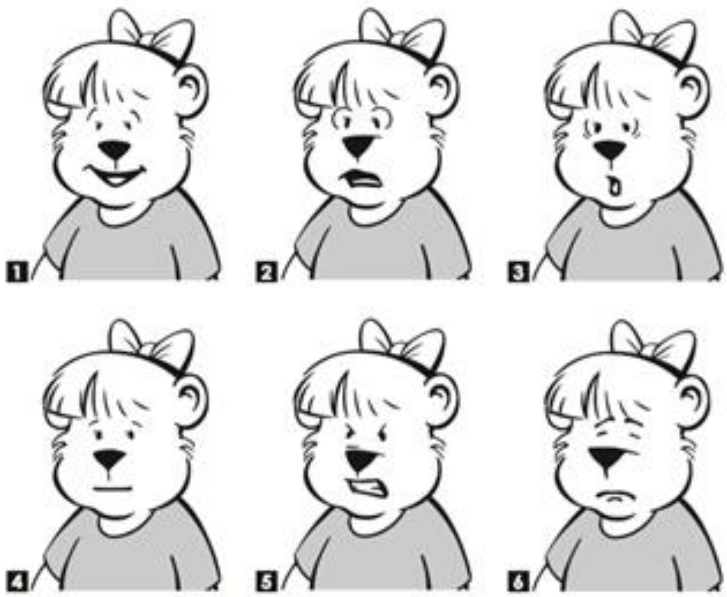
PROBE IF ANY OF THE FOUR PARTS OF THE STORY ARE MISSING OR INCORRECT.
ASK QUESTIONS II and III ONLY IF THE CHILD RESPONDS "No" TO THE FIRST, CORRECT QUESTION.

F1a. At the beginning of the story,
I. *Were the children playing with blocks?
II. Were the children playing ball outside?
III. Were the children coloring pictures?

F1b. In (the next part of) the story,
I. *Did one of the children say that Lisa wanted to play with her in the block area?
II. Did one of the children say that Lisa wanted to play with some other children in the block area?
III. Did one of the children say that Lisa wanted to go outside and play?

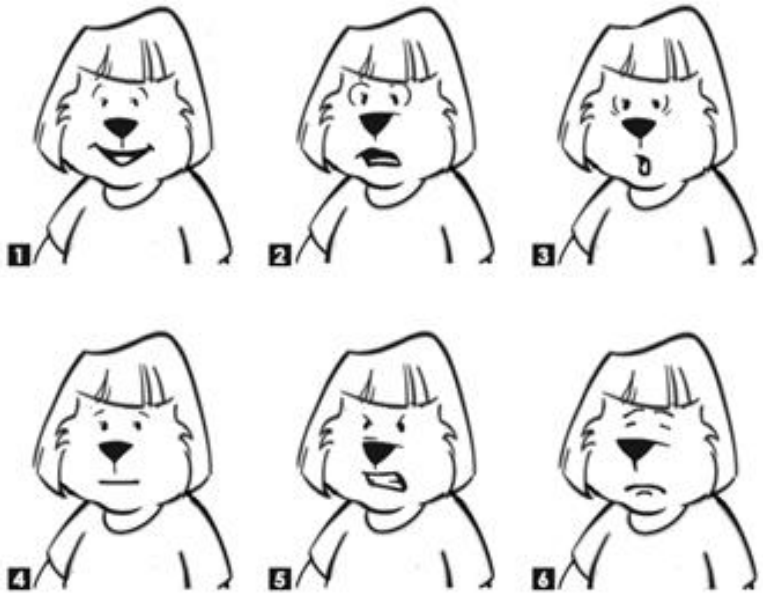
F1c. In (the next part of) the story,
I. *Does Lisa ask the other children if she can play with them?
II. Does Lisa ask the other children if they want to color?
III. Does Lisa ask the other children if they want to go outside?

F1d. At the end of the story,
I. *Does the child tell Lisa "The teacher said only two can play in the block area."?
II. Does the child say to Lisa, "Yes, come play with us."?
III. Does the child say to Lisa "Play time is over."?
*The correct response is "yes".



F2a. POINT TO THE FACES AND SAY: **Point to the picture that shows how Lisa feels after the other child tells her that only two can play in the block area.**

Picture 1: **Does Lisa feel happy?**
Picture 2: **Does Lisa feel afraid?**
Picture 3: **Does Lisa feel surprised?**
Picture 4: **Does Lisa not really care?**
Picture 5: **Does Lisa feel angry?**
Picture 6: **Does Lisa feel sad?**



F2b. CIRCLE ALL THE FACES AND SAY: **Point to the picture that shows how the other child feels after telling Lisa that only two can play in the block area.**

Picture 1: **Does the other girl feel happy?**
Picture 2: **Does the other girl feel afraid?**
Picture 3: **Does the other girl feel surprised?**
Picture 4: **Does the other girl not really care?**
Picture 5: **Does the other girl feel angry?**
Picture 6: **Does the other girl feel sad?**

F3. POINT TO OTHER CHILD AND SAY: **Why do you think the other children would not let Lisa play?**

IF THE CHILD DOES NOT RESPOND, MOVE TO NEXT QUESTION

F4. POINT TO OTHER CHILDREN AND SAY: **Do you think the other children who didn't let Lisa play are mean or not mean?**

F5. **Pretend you asked girls in your class if you could play and they said that only two can play in the block area? How would you feel?**

Picture 1: **Would you feel happy?**
Picture 2: **Would you feel afraid?**
Picture 3: **Would you feel surprised?**
Picture 4: **Would you not really care?**
Picture 5: **Would you feel angry?**
Picture 6: **Would you feel sad?**

F6. **So you would feel** (REPEAT IDENTIFIED EMOTION). **How** (IDENTIFIED EMOTION) **would you feel?**
Would you feel a little bit (IDENTIFIED EMOTION) **or a lot** (IDENTIFIED EMOTION)?

F7. **Why would you feel** (IDENTIFIED EMOTION)?

F8. **What would you say or do if you asked girls in your class if you could play and they said that only two can play in the block area?**

IF CHILD DOES NOT RESPOND, SAY: **What would you say or do if other girls in your class said this when you asked if you could play?**

Now, let me show you some different things that Lisa could say or do.

POINT TO LISA. **Lisa could say, "Then can I play next?"**

F9. **Is this a good thing or a bad thing for Lisa to say?**

F10. **If Lisa said that, do you think the other children would like her?**

F11. **Do you think the other children would let her play if she said that?**

F12. POINT TO THE OTHER CHILD. **How would the other children feel if Lisa said "Then can I play next"?**

Now, I'll show you something else that Lisa could do.

POINT TO LISA. **Lisa could knock apart the blocks and say to the other children: "If I can't play, then you can't play either!"**

F13. **Is this a good thing or a bad thing for Lisa to do?**

F14. **If Lisa did that, do you think the other children would like her?**

F15. **Do you think the other children would let her play if she did that?**

F16. POINT TO THE OTHER CHILD. **How would the other children feel if Lisa knocked apart the blocks and said: "If I can't play, then you can't play either!"?**

Now, I'll show you something else that Lisa could do.

POINT TO LISA. **Lisa could cry and say, "It's not fair".**

F17. **Is this a good thing or a bad thing for Lisa to say?**

F18. **If Lisa said that, do you think the other children would like her?**

F19. **Do you think the other children would let her play if she said that?**

F20. POINT TO THE OTHER CHILD. **How would the other children feel if Lisa cried and said "It's not fair"?**

Now we are all done!

You did a great job and I would like to thank you for helping me!