

USE OF TRAIT INFORMATION IN MORAL JUDGMENTS

Children's Use of Trait Information in Their Intention Ascription and Moral Judgments
of Others

by

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Abstract

Research into young children's moral reasoning typically employs stories that utilize characters with no background information. The current study addressed this limitation by examining 4- and 5-year-old children's use of trait information in their ascriptions of intention and moral judgments of characters who have identical, neutral intentions who produce either a positive or negative outcome. Children in the Trait-Present conditions heard stories in which a character was described with a trait (either *nice* or *mean*) along with three behavioural examples that are consistent with the trait. In order to determine the effect of providing trait information, children in the Trait-Absent condition were presented with the same stories, but without trait information. Results showed that children incorporated trait information into their judgments of others. Specifically, children judged 'nice' characters more leniently than the 'mean' characters. Performance on the main task was also examined in relation to Theory of Mind understanding.

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Introduction

Beginning in early childhood, children evaluate morally relevant situations in order to make decisions concerning social behaviour. In order to make mature, adult-like, moral judgments, children must integrate information about someone's intentions motivating an action, as well as the consequences of that action (Piaget, 1932/1965; Turiel, 2006; Zelazo, Helwig, & Lau, 1996). Initially, children place focus on the outcome of a situation, without considering the intention that motivated the action (Farnill, 1974; Shultz & Wright, 1986). As children develop, they begin to incorporate the actor's intentions, with children demonstrating the *beginning* of this outcome-to-intention based shift in their moral judgments as early as 3 years of age (Nobes, Pngiotaki, & Pawson, 2009). Children who take intention information into consideration make more tolerant moral judgments of others (Wainryb & Ford, 1998), which in turn has implications on children's social competence (Wainryb & Brehl, 2006). Therefore, understanding children's consideration of intentions in their evaluations of others is a valuable area of study.

A large portion of research investigating children's developing moral reasoning has focused on children's understanding of intention (e.g., Armsby, 1971; Cushman et al., 2013; Killen et al., 2011; Nelson 1980). However, mature moral judgments are far more complex than only incorporating the consideration of an actor's intentions and the outcome of their actions. Adults use multiple cues: such as the actor's traits, situational factors, and intention, to form global explanations and judgements of others' behaviour (Hughes & Trafimow, 2011; Malle, 1999, 2004, 2008; Trafimow, 2009; Trafimow et al., 2012). Adult's *intention* ratings are even influenced by the knowledge of a character's

personality traits (Hughes & Trafimow, 2011, 2015). Yet, the traditional moral paradigms which are used to measure children's moral reasoning are often void of these rich contextual cues. Most research with young children involves stories featuring characters that appear with no personality information, or any real 'backstory' of any kind. This stands in stark contrast to reality, in which we regularly make moral judgments about individuals for whom we have some knowledge in terms of their traits.

The term 'trait' is used in a number of different ways in the psychological literature. Such as, specific personality criteria (i.e., "the big five"; see Zillig, Hemenover, & Dienstbier, 2002), as well as physical traits (see Lockhart, Chang, & Story, 2002). However, for the purpose of this paper, the term 'trait' will be limited to characteristics that are psychological in nature and are indicative of actors' personalities. Though this term can be used to refer to both relatively simple (e.g., nice and mean) and relatively complex (e.g., manipulative, conniving) traits, the current research employed simple trait information given that the age group of interest was quite young (i.e., 4- & 5-year-olds).

Overwhelmingly, researchers have investigated children's moral judgments by utilizing scenarios involving characters with no contextual background information. These characters are typically presented as having an intention (e.g., positive or negative), perform some action, with that action resulting in some outcome (e.g., positive or negative). However, they are not given any further information about the character, such as that character's personality or past behaviour. For example, they might hear,

"This is Sally and here is a box of yummy cookies. Sally and her Dad made the cookies for Sally's class at school. Sally picks up the box. She really wants to share the cookies with her friends. Just then her fingers slip and she drops the

box of cookies on the floor and look, eight cookies fell out and got ruined. No one can eat them.” (Andrews et al., 2015).

After children answer story comprehension questions, they are asked to make intention judgments (e.g., “Did Sally mean to ruin the cookies?”), as well as moral evaluations of that character (e.g., “Think about this story. Would you give Sally a smiling face or a frowning face?”). Typically, children hear several stories in which the intentions and outcomes vary across stories, with questions presented after each individual scenario. Researchers then compare the moral ratings given to each character across stories to draw inferences about how children weigh intention and outcome information in their moral judgments (e.g., Cushman et al., 2013; Jones & Thompson, 2001; Nelson, 1980). This method has allowed researchers to gain valuable insight into when children begin to switch from outcome-based to intent-based moral judgments and how children use this information in their judgments of others. For example, from them, we know that children initially place greater emphasis on the outcome of an event than the intention of the actor (Shultz & Wright, 1986), that children as young as 3 have demonstrated the ability to judge an actor based on their intentions (Nobes et al., 2009), and that as young children progress through early childhood, they rely more heavily on intention information when making moral judgments (Cushman et al., 2013).

It is important to note that these scenarios do not include the contextual cues that are often available when making moral judgments in a real-life social situation. When children make moral judgments in their everyday social lives, they are often privy to information about the individual that they are evaluating. It is plausible that, similar to adults, children’s judgements are influenced by their knowledge of the actor. For example, a child may be more lenient towards a child who broke a toy, if that first child

knows that the transgressor is usually 'nice' than when the transgressor is usually 'mean'. It is not known if this is the case, as to the best of my knowledge, no research exists examining children's use of personality trait information when making moral judgments. However, in other research, children have demonstrated that they are sensitive to trait information, and are even able to use this information to predict characters' future behaviours (e.g., Heyman & Gelman, 1998, 1999). Three- to 5-year old children have also demonstrated higher rates of condoning aggressive behaviour towards characters who produced a negative outcome and were described as 'mean', than characters who produced the same negative outcome but were given the trait label of 'nice' (Giles & Gelman, 2005). Thus, children may be capable of using other information, such as trait information, that is not captured in the traditional paradigms used to measure and understand children's moral reasoning. Therefore, I proposed extending our understanding of young children's developing moral reasoning by including character trait information, specifically 'nice' and 'mean', into scenarios which otherwise resemble prevalent moral paradigms. This allowed for the examination of whether children, like adults, are influenced by trait information when making their moral judgments, as well as whether this information influences children's intention ascriptions. It was hypothesized that children would incorporate trait information when making moral judgments about others, but that the effect would vary for trait (e.g., nice vs. mean) across outcomes (e.g., positive vs. negative).

Examining children's moral judgments using scenarios that included trait information about the protagonists more closely mirror (albeit, only partially) the information children have when making moral judgments in their social lives. This

information contributes to a more complete understanding of not only children's moral reasoning, but also their ability to use trait information in a psychologically meaningful way. The age group of interest was 4- and 5-year-old children because children across this age range have demonstrated some understanding, and consideration, of intention information in their moral judgments (e.g., Baird & Astington, 2004), as well as the ability to use personality trait information when making psychological inferences about another (e.g., Heyman & Gelman, 2000). Therefore, studying this age allows for an early detection of children's use of trait information in their moral evaluations.

Before a detailed description of the planned research, the most relevant research will be reviewed. Research examining children's consideration of intentions and outcomes will be discussed. Next, children's ability to use trait information will be examined, followed by a review of how children's emerging Theory of Mind may influence their intention ascriptions and their use of trait information. Due to the complexity of the main stories task, contributing cognitive factors will also be briefly reviewed (i.e., working memory and general language ability). Finally, the current study, along with hypotheses, analyses, and discussion will be presented.

Children's Considerations of Intentions and Outcomes

Since Piaget's (1932/1965) seminal work, a large body of research has demonstrated a critical developmental shift from outcome-to-intent based moral judgments in older preschool children. Originally, it was believed that until about 8 or 9 years of age, children were only able to take outcome information into consideration when making moral judgments of others (Piaget, 1932/1965). For instance, within Piaget's work, children were presented a story in which one child accidentally created a

large ink stain, whereas another created a small ink stain purposefully. Young children considered the large *unintended* ink stain to be morally worse than the small *intentional* ink stain, whereas older children concluded the opposite. This was taken as evidence of a shift from outcome based moral judgments to intent based moral judgments in middle childhood.

Subsequent research has fine-tuned Piaget's original methodologies to allow for a more refined version of his predicted developmental pattern of children's morality (Armsby, 1971; Farnill, 1974; Karniol, 1978; King, 1971; Nelson, 1980). For example, Armsby (1971) used modified Piaget story pairs that clearly differentiated accidental from purposeful behaviour. In addition, children received written copies of the stories to aid in reducing children's short-term memory load. He found that the majority of children, including 6-year-olds, were able to incorporate the actors' intention into their moral evaluations when given the modified stories. Armsby claimed that Piaget, and those who used his original methodologies, did not have similar findings for two reasons. Specifically, the original stories lack of differentiation between accidental and purposeful transgressors, as well as the long and complex nature of the stories. Armsby concluded that children make moral judgments based on intention significantly earlier than previously demonstrated. Furthering this line of research, Nelson (1980) reduced extraneous memory demands by adding explicit pictorial representations of a character's motive (i.e., intention) to the stories children heard. He found that children as young as 3 years old were able to consider a character's intention when making a moral judgment about said character. He concluded that the modality in which story information is presented significantly influences young children's ability to incorporate intention

information into their moral judgments of a character. Thus, it is clear that memory demands affect children's performance within moral reasoning studies. Contemporary research has demonstrated that under optimized conditions, namely those that reduce the cognitive processing necessary to answer experimenters' questions (e.g., salient descriptions of character's mental states, pictures to accompany verbal stories), preschoolers as young as 3 and 5 years old are able to judge a character based on that character's intention (Cushman, Sheketoff, Wharton, & Carey, 2013; Nobes et al., 2009).

Other research has also demonstrated that children's use of intentions in their judgments of others begins in early childhood but young children weigh outcome information more heavily than intention information. For example, Baird and Astington (2004) investigated 4-, 5-, and 7- year-olds' ability to use motive information in their moral evaluation of identical actions. They found that 5- and 7-year-olds were more likely than 4-year-olds to evaluate identical actions differently depending upon the character's motives. With that said, 4-year-olds were still capable of using intention information, but used this information to a lesser extent than the older children.

While there is evidence that children are often aware of, and sensitive to, an agent's intentions, a large body of research has provided evidence that young children's moral judgments are *primarily* influenced by outcome (Cushman et al., 2013; Gummerum & Chu, 2014; Helwig, Zelazo & Wilson, 2001; Richardson, Jampol & Woodward, 2011; Walden, 1982). Helwig et al. (2001) have provided strong evidence for the view that children's moral judgments are predominantly outcome-based. Children (3-, 5-, and 7- year-olds) and adults were presented with congruent and incongruent stories in which an actor had either a positive or negative intention that led

to either a positive or negative emotional consequence for a secondary character (a typical paradigm in this area). Congruent stories consisted of matched intention and outcome (e.g., positive intention leads to positive outcome), whereas, incongruent stories contained either an accidental harm (positive intention matched with negative outcome) or an attempted harm (negative intention matched with a positive or neutral outcome). For example, one of the vignettes involved a boy, with no background/trait information, who wanted to make his friend happy by giving him a puppy (positive intention), but accidentally and unknowingly gave his friend a (non-poisonous) tarantula, and frightened his friend (i.e., an incongruent story).

The authors also investigated whether children would judge harm less severely when the main character exhibited a ‘noncanonical’ preferences (e.g., the boy is scared when he received a puppy). After each story, participants were asked an acceptability question, “Is it okay for Larry to give Lewis a tarantula?” (p.71), and a punishment question, “Should Larry get in trouble?” (p. 71). Helwig et al., (2001) reported that nearly 70% of the children based their acceptability judgments exclusively on outcome (i.e., whether the character was made happy or sad), and no children based their acceptability judgments solely on intention. Children also rated accidental harm as more punishable than attempted harm, evidenced by a strong influence of outcome on punishment judgments. Surprisingly, adults in this study also demonstrated a heavy reliance on outcome information in their acceptability judgments and, like the children, judged accidental harm worse than attempted harms. However, adults based their punishment judgments exclusively on intention, or in combination with outcome. The authors concluded that all participants judged inflicting harm as unacceptable, even when

that person had a noncanonical preference, and that young children primarily use outcome information when ascribing punishment ratings.

Taken together, these findings indicate that while young children are capable of using intention information, their judgments are primarily outcome-based. Perhaps the most surprising finding within the study was the suggestion that even adults base their acceptability ratings of an action primarily on outcome and not intention. It is possible that these findings are not due to a disregard of the agent's intentions, but a methodological factor that led participants, including adults, to focus on outcome. Specifically, it may be that the phrasing of the moral judgment questions, which are outcome focused (i.e., "Is it okay for Larry to give Lewis a tarantula?", p. 71) draws the participants' attention to the outcome (Nobes, Panagiotaki, & Bartholomew, 2016). If this is the case, studies that use similar questions may be underestimating children's consideration of intention (e.g., Fu, Xiao, Killen & Lee, 2014; Killen et al., 2011; Zelazo, Helwig, & Lau, 1996).

Very recently, Nobes, et al. (2016) replicated both Helwig et al.'s (2001) and Zelazo et al.'s (1996) incongruent intention and outcome stories (i.e., accidental and attempted harms) to investigate whether small question changes would increase both children's and adults' use of intention information when making character evaluations. More specifically, the authors noted that the acceptability question typically used in this area (e.g., "Is it okay for Kevin to give Rob a puppy?", Nobes et al., 2016, p. 202) could be easily interpreted as being about the outcome of the action, and not a question that requires consideration of the character's intention. Thus, it may be that participants interpreted the acceptability question as asking about the *outcome* of the character's

actions, regardless of the character's motives. The authors also claimed that the punishment question, "Should [*name*] get in trouble? A little trouble or a lot of trouble?" (p. 202), were skewed towards an outcome focus because of their close proximity to the acceptability questions (typically asked directly afterward). In order to test their claims, they gave participants both the original and reworded acceptability question, "Is [*name*] good, bad, or just OK? How good/bad? Is s/he really really good/bad or just a little good/bad or just okay?" (p. 202). The authors believed that by making the acceptability question agent-focused, participants' attention would be drawn to the agent's intentions, and not the outcome.

Nobes et al. (2016) found that when participants were asked the rephrased acceptability question (i.e., "is [*name*] good, bad, or just OK?", p. 202) acceptability judgments were based more on intention than on outcome and that both older children's and adults' judgments were based almost entirely on the character's intention. The youngest children (4-year-olds) based their acceptability ratings on either intention or outcome approximately equally. That is, about half of the 4-year-olds used intention information while the other half relied on outcome information. This provides further support that young children can take intention information into consideration when making moral judgments, but that they utilize outcome information to a greater extent than adults.

The researchers found that for all age groups, punishment ratings were strongly consistent with acceptability ratings. Namely, those who used intention information in their acceptability judgments also used intention information in their punishment judgments. It appears that the previously employed acceptability questions in the Helwig

et al. (2001) and Zelazo et al. (1996) were outcome-focused, making children and adults focus on the action and give almost exclusively outcome-based evaluations. When acceptability questions are more agent-focused (as in Baird & Astington, 2004; Nobes et al., 2016), both children and adults consider intention when making their evaluations. Thus, the authors concluded that there was no evidence to support the claim that young child's judgments are *primarily* outcome based (see: Bearison & Isaacs, 1975; Nobes, et al., 2009; Vaish, Carpenter, & Tomasello, 2010). It should be noted that within the moral development literature there is no set standard on question phrasing for acceptability (i.e., moral judgment) questions. Hence, Nobes et al., (2016) study examined only a small subset of question phrasing (i.e., outcome focused vs. agent-focused) used in the developmental literature. So, while their concerns about questions are warranted, it is not known to what extent they apply to the literature more broadly (no other comparisons were made).

In an effort to account for the developmental shift from outcome- to intention-based moral judgments, Cushman et al. (2013) have proposed a two-process model. They claim that adults have two independent process models; one depends on causal factors for harmful outcomes and another that depends on mental state information of the person who caused the harm. The two processors compete with one another and can generate moral conflict. For instance, conflict is created when a neutral intention leads to a negative outcome (i.e., an accidental transgression) or when a negative intention leads to a neutral outcome (i.e., an attempted harm). The authors propose that in adults, the assessments of appropriate punishments are dictated by the process model that considers outcome, whereas, moral judgments are produced in the process system that relies on

mental states. In other words, adults' moral judgments are the result of considering the intention (i.e., mental states) of the actor, while punishment is based on considerations of the outcome.

Children on the other hand, they argue, only have one processor and this processor cannot incorporate causal and mental state factors simultaneously when making moral judgments, leading children to rely heavily on outcome information as this information is processed first. Since these processes are not yet differentiated, children deem outcomes that are punishable (i.e., those with negative outcomes) as automatically morally wrong. The authors predict that as children begin to rely more heavily on intention to make moral judgments, the single processor begins to differentiate between what is punishable and what is morally wrong. As this differentiation between moral wrongness and punishment assignment occurs, what is punishable is influenced, at least partially, from what is morally wrong. Therefore, the authors contend that intent-based judgments of moral wrong doings constrain children's punishment ascriptions. The authors refer to this as the 'constraint hypothesis'.

Cushman et al. (2013) tested this hypothesis by presenting 4- to 8-year-olds with two stories. One story involved an accidental harm (positive intention matched with a negative outcome). The second story involved an attempted harm (negative intention matched with a positive outcome). After hearing each story, children were asked for their moral evaluation of the character as well as whether the character should be punished. Both story order and question order were counterbalanced. The authors tested four story themes across participants, but for reasons not explained within the article, each child heard two stories from the *same* theme. For example, a child would hear a

story in which a girl *accidentally* spills paint on the floor as well as a story of a girl who *attempts* to spill paint on the floor but fails to do so. After each story, children answered two comprehension questions and two test questions (i.e., “Should [the character] be punished?” and “Is [the character] a bad, naughty [boy/girl]?”), p. 10). Somewhat unsurprisingly, the authors found story order effects that were difficult to interpret and therefore decided to proceed by only analysing the first story each child heard.

The authors found that across the age range tested, an outcome-to-intent based moral judgment shift was present for accidental harm but not for attempted harm. It was also shown that all children aged 5 and older had punishment ratings that were more dependent on outcome, whereas moral judgments were more reliant on mental state information. It appeared that as children begin to incorporate intention information into their moral judgments, they use outcome information for the assignment of punishment. The authors interpreted these findings as support for the two-process model. Cushman et al. (2013) also argued that they found support for their constraint hypothesis by running a mediation analysis. This analysis revealed that moral judgments mediated children’s punishment ratings yet, punishment did not mediate moral judgments. The authors also found that participants who heard the accidental situation and were asked to give a moral judgment before a punishment ascription were less likely to assign punishment to the actor. The authors took this as evidence that the developmental shift from outcome to intent based moral judgments constrains children’s punishment ratings of accidental transgressors.

Although Cushman et al. (2013) found support for their proposed model; there are several limitations that should be considered. Children were only presented with one

story for each of the two condition types. Due to order effects, the researchers only examined one version per participant, which limits the informativity of the findings. Furthermore, the authors state that children who are 5 or older, as well as adults, weigh outcome more heavily in punishment ascriptions than in moral ascriptions, but adults were not tested.

This claim has not been supported in more recent literature using child moral paradigms, with both adults and children. For example, Nobes et al. (2016) found that participants who used intention information in their moral judgments also used intention for their punishment ratings, regardless of outcome. However, there are a few significant differences between the two studies that may explain these discrepancies. First, Nobes et al. (2016) did not counterbalance their moral and punishment evaluation questions (moral judgment questions were always asked before punishment question), which may explain why participants used the same strategy for both moral judgments and punishment ascriptions. Additionally, Cushman et al. (2013) created discrepancy scores (i.e., the sum of both the naughty score minus punishable attempted harm and judged punishable minus naughty score for accidental harm), finding a 26% answer discrepancy between the 5-year-olds. Whereas Nobes et al. (2016) looked at answer discrepancies *within* each participant, finding that a significant majority of participants (4-year-olds to 8-year-olds and adults) used a matching strategy in their moral judgment and punishment ascriptions. Therefore, it is unclear whether punishment scores are more outcome-based than moral judgment scores and whether the order in which participants are given moral judgment and punishment questions influences their evaluations.

In sum, research-to-date has revealed that under the right conditions, children as young as 3 years of age are able to take intention information into account when making moral judgments. As children progress through early childhood they begin to rely more heavily on intentions when making moral judgments while putting less weight on outcome information (Baird & Astington, 2004; Cushman et al, 2013; Helwig et al.,1995; Nelson-le Gall, 1985; Shultz et al., 1986). However, these findings are based on traditional moral paradigms, which typically involve characters with no background information. When children make moral judgments of others in these types of studies, they are almost always done in the absence of any other information, such as personality traits. In real life, however, children often know something about those they are evaluating. Currently, it is not known how (or if) children incorporate trait information into their moral evaluations of an actor. Investigating this issue is the goal of this thesis. Therefore, research investigating children's use of trait information will be described in the following section.

Children's Use of Trait Information

Traits are stable, internal, psychological characteristics that provide context and insight into others' behaviour (Yuill, 1993). These traits include, but are not limited to, being shy, outgoing, kind, or selfish. Being sensitive to character traits is important, as an understanding of stable characteristics enables people to make trait relevant behavioural predictions and explanations (e.g., Erdley & Dweck, 1993; Heyman & Gelman, 1998). Therefore, the ability to understand that individuals possess their own stable traits and that these mental states predispose an individual to act in a specific manner is an important milestone in children's social-cognitive development (e.g.,

Rholes, Newman, & Ruble, 1990; Rubles & Dweck, 1995). In order to understand that an individual possesses psychological traits, a child must comprehend that individuals are in control of their own behaviour, that they possess their own internal thoughts (e.g., intentions) and that these personality traits are stable and consistent over time and across situations (Alvarez, Ruble, & Bolger, 2001).

Adults routinely form trait judgments, but it was believed that this sophisticated link between observed behaviour and an enduring trait was not formed until about 7 or 8 years of age (see Flavell, Miller, & Miller, 1993; Miller & Aloise, 1989; Wellman, 1990). This conclusion was based on studies in which children were asked to freely describe a story character. In the majority of these studies, children under the age of 8 years seldom used personality traits in their descriptions of others (Barenboim, 1981; Livesley & Bromley, 1973; Peevers & Secord, 1973). However, it is entirely possible that free, open-ended description tasks were difficult due to their cognitive requirements and not children's lack of trait awareness. These tasks required young children to have advanced verbal skills, as they would have to possess the vocabulary to describe personality traits. The task also taxed children's working memory, as children needed to be able to hold the instructions of the task in mind as well as traits that were already stated. Children were also required to inhibit descriptors that are not trait based and to ignore the saliency of the actors' physical appearance. Therefore, it is understandable that younger children were not successful on these tasks.

Due to the limitations of the free description tasks, subsequent research began to focus on assessing whether children demonstrated an understanding that traits are stable attributes that lead individuals to act in predictable ways, a key component to trait

understanding (Berndt & Heller, 1985; Ferguson, Van Roozendaal, & Rule, 1986; Rholes & Ruble, 1984; Rotenberg, 1980). These studies employed a ‘prediction paradigm’, which presented children with an actor engaging in a trait relevant behaviour. Children were then given a prediction task, which asked them to predict that actor’s behaviour in another trait relevant context. For example, in a study by Rholes and Ruble (1984), 5- to 6-year-olds and 9- to 10-year-olds were shown a video in which a child actor (‘Jill’) either engaged in a positive trait (i.e., generosity or bravery) or a negative trait (i.e., stinginess or fearfulness). Children were then asked a label question, such as whether the actor seemed ‘nice and kind’ (for the generosity trait). Children were required to give a dichotomous answer of ‘yes’ or ‘no’. Participants were then told three pairs of stories, where one story depicted trait-consistent behaviour. For example, for the generosity scenario, they would hear, “One day Jill was playing outside when Sally asked Jill for help with the yard work she had to do. Jill went over and spent all her play time raking leaves.” (p. 552). Another story depicted a trait-inconsistent behaviour (i.e., not helping to rake the leaves), and the final story depicted a trait-irrelevant behaviour, which involved the main character performing actions that were unrelated to the behaviour that had been observed in the original scenario. After hearing the stories, children were asked to choose which story best represented the character from the earlier video. The authors found that even though children in both groups made appropriate label choices, only the older children chose trait-consistent future behaviour. Therefore, they concluded that young children do not exhibit a key component of trait understanding, that is, that past behaviour predicts future behaviour.

Although Rholes and Ruble (1984) found support for their hypothesis that young children do not possess trait understanding, limitations of the study should be considered. As previously stated, the authors showed children a video with a character performing a trait-relevant behaviour. For example, in the generous trait condition a child is shown sharing their lunch with another child. However, in the vignettes read to children the trait-consistent behaviour is not closely matched to the original behaviour. For instance, in the 'generous trait' condition, the child is described as helping someone else to clean his or her yard. It may not be that children did not understand that the character possesses a trait that is consistent across situations, but that the trait, which they believed to be consistent, was 'sharing' and not the broader personality trait of 'generosity'. Thus, young children may not have been able to extrapolate that a person who shares food would also be a person who helps someone clean. It is therefore plausible that young children could demonstrate an understanding that trait behaviour is consistent, but only if the trait behaviours were more closely matched. Further, it is worth pointing out that it may be that the younger children in this study were capable of selecting trait-consistent future behaviours, but that they could not do so for the traits employed (which were not simple traits). It should also be noted that children were only given one example of a given trait behaviour, but then asked to predict across several stories of that character performing different actions. Hearing the character perform several other behaviours may have confused younger children as to which traits the character possessed. Also, children may need more than one behavioural exemplar to make trait predictions. Hence, it is plausible that the methodology hindered young children's performance, due to the complexity of the task, which required them to consider three stories simultaneously in

order to select the correct one, and therefore underestimated their trait understanding abilities.

Boseovski and Lee (2006) addressed some of these issues by demonstrating that frequency of target behaviour does impact young children's ability to make trait-consistent behavioural predictions. Children aged 3- to 6- years were read stories in which a character performed a trait-consistent behaviour (e.g., sharing), either once or five times. Children were asked to predict how the character would behave the following day in a similar situation; followed by a question of whether they thought the character was "nice, mean, or not nice or mean" (p. 503). The authors found that 5- and 6- year olds were more likely to make trait-consistent behavioural predictions after hearing multiple instances than were children who heard only one behavioural example. Further, they found that all children were above chance in assigning consistent trait labels (i.e., 'nice' or 'mean') after hearing multiple behavioural examples. The authors noted that children were more reluctant to say that a character would continue to behave negatively compared to a character who behaved positively, which the authors believed was due to children's positivity bias (e.g., Newman, 1991). They concluded that 5- and 6-year olds appear to require multiple pieces of information to predict future behaviour, and thus seem to appreciate the character's behaviour as a reflection of a stable personality trait.

Some researchers have argued that children's inconsistent performance on trait reasoning tasks are due to their use of superficial strategies, such as behaviour matching (Astington, 1991; Rholes & Ruble, 1984), rather than a deeper understanding of enduring features (Flavell, 1977; Livesley & Bromely, 1973; Rotenberg, 1982). Accordingly, they

view children as using overt behaviour and outcome information to form expectations about individuals, but they do not have an understanding that these people have general psychological patterns that differ from others. Therefore, they argue, children's trait-consistent predictions merely reflect their shallow understanding of individual behaviour (Barenboim, 1985; Bennett, 1985, 1986; Ruble & Dweck, 1995; Yuill 1992).

Nevertheless, other researchers have suggested that young children are capable of more mature trait understanding, but only certain methodologies allow for young children to demonstrate this ability.

Heyman and Gelman (1998) devised what they described as a more stringent test of children's ability to make meaningful trait inferences. This was accomplished by including characters who performed identical overt behaviours, which resulted in identical outcomes, that were accompanied by differing, but explicitly stated, intention information. They believed that this prevented participants from being able to rely on superficial behaviour matching strategies when making trait-consistent predictions. Employing this new methodology, the authors presented participants (kindergartners, second graders, fifth graders, and adults) with scenarios in which protagonists performed an action that led to a secondary character being either happy or upset. In the stories, the main character's motives were manipulated so that they either acted with pro-social, antisocial, or neutral/incidental intentions that involved a goal that had nothing to do with how a secondary character may emotionally react. For example, in one story, the protagonist is playing with a hose and splashes the secondary character with water, and the secondary character is pleased or displeased upon getting wet. In the pro-social motive version of the story, the protagonist did this because they believed that the

secondary character wanted to cool off. In the antisocial version the protagonist believed that the secondary character would be upset at getting wet. In the incidental version participants were told that the protagonist did this because they wanted to have fun shooting water all around (i.e., no intention directed toward the secondary character). After children heard the story, they were asked to judge whether the character was ‘nice’ or ‘mean’, whether the protagonist would help, would share, or would want another character’s art project ruined. The authors reasoned that if participants were only able to make appropriate trait inferences in previous research based on whether the event was positive or negative, responses should correspond to outcome. However, if children have a psychological understanding of traits, motive information should be more influential in determining children’s responses. Their findings were consistent with the latter explanation. That is, children in all age groups were sensitive to trait information and used it to a greater extent than outcome information. For example, children responded that a protagonist with pro-social motives would be more willing to share than would a protagonist who acted with antisocial motives. The authors concluded that children are capable of more mature trait understanding than previously demonstrated.

Heyman and Gelman (1998) provided valuable insight into young children’s trait understanding but it is important to note that they did not investigate children’s use of trait information in their moral reasoning. Although the current study utilized similar methodology employed by Heyman and Gelman (1998), there are several fundamental differences. First, the current study’s main goal was to investigate whether children were influenced by trait information, which was given to the children (i.e., they were not asked to infer it), in their intention, moral, and punishment ascriptions. Whereas, Heyman and

Gelman (1998) investigated whether children would infer trait labels and future behaviour from trait relevant motive information. Secondly, the current study examined how children use trait information to evaluate present behaviour, not to predict future behaviour. Heyman and Gelman (1998) showed that young children do possess a meaningful understanding of psychological traits, but little is known about how young children use this information in their moral evaluations and punishment ascriptions. The current study aimed to investigate this gap within the present literature.

Continuing their previous work, Heyman and Gelman (1999) theorized that it was the nature of inferences children were required to make in the original prediction paradigms (i.e., behaviour-to-behaviour inferences) that hindered young children's performance. The authors proposed that young children would be able to successfully use trait label information (if the trait was given and not inferred from behaviour) in their predictors of others' future behaviour. To test this claim, they presented 4-year-old children with a character who was described as either 'nice' or 'mean', who produced either a negative or positive emotional response in a secondary character. The stories used within this study were similar to the ones used in Heyman and Gelman (1998), above. After hearing the story, children were asked whether the character had wanted to make the secondary character happy or upset (motive question), whether that character knew the outcome might occur (foreseeability question), and whether the character had intentionally produced that specific emotional response in the secondary character (emotional response question). The authors found that 4-year-olds used trait information to make a wide range of inferences. Specifically, children expected 'nice' characters to have more pro-social motives, to foresee positive outcomes but not negative ones, and to

be happier about a positive outcome than ‘mean’ characters. The authors concluded that their results demonstrated that 4-year-olds have some psychologically meaningful understanding of traits. Thus, expecting young children to use trait information in moral reasoning tasks is reasonable, given the current research on children’s trait understanding.

Following up from Heyman and Gelman’s (1999) work, Lui, Gelman and Wellman (2007) offered a theory to explain why the prediction paradigm’s task demands may be masking younger children’s abilities. They argue that in trait ascription tasks, the process required to predict future trait-relevant behaviours can be divided into two parts: first, children must be able to infer a trait from past behaviour and secondly, children must predict a future behaviour on the basis of a trait. Lui et al. (2007) demonstrated that although children aged 4 were unable to combine both processes (i.e., draw behaviour-to-behaviour inferences), they successfully made trait consistent predictions in each individual part of the process (i.e., behaviour to trait label inferences, and trait label to behavioural inferences), but they just could not put them together. The authors concluded that past research using prediction paradigm tasks do not truly reveal young children’s trait understanding, but instead indicate that children have an information-processing difficulty (i.e., have less cognitive capacity to process both components together). Thus, their work further supports Heyman and Gelman’s (1998, 1999, 2000) as well as Heyman (2009) claim that young children do have an understanding of psychological traits and are able to use this information in meaningful ways (e.g., behavioural prediction).

To date, no published study (to my knowledge) has directly examined the influence of trait information in young children's moral evaluations. However, Giles and Heyman (2005), though not directly investigating children's moral judgments, provided support for the expectation that young children can integrate trait information into their moral judgments and punishment assessments of a transgressor. The authors were interested in whether young children's knowledge of an actor as 'mean' would increase children's endorsement of aggression against that character. Four and 5-year-old children heard one of four different scenarios, which all began with a trait label or relevant trait information followed by the character 'spilling your milk', where the actor's intentions are ambiguous. The character was given a trait label ('nice' or 'mean') or described as "happy when bad things happen to other kids" or "sad when bad things happen to other people" (p. 500). For example, children heard, "Nicole is a nice kid. Nicole spilled your milk." (p. 500) or "Sam is sad when bad things happen to other people. Sam spilled your milk." (p. 500). The emotion information was added to ensure participants' responses were not a result of children using a simplistic strategy of mapping positive words with positive outcomes. After hearing the scenario, children were asked whether they endorsed hitting that character. More specifically, they heard, "Some kids would hit [the story character]. Would you hit [the story character]?" (p. 501). They were then asked for their endorsement of hitting the character by a third party, "Would you want someone big and strong to hit [the story character] if the teacher wasn't looking?" (p. 501), as well as whether they believed hitting was a good idea. Their findings showed that children were more likely to endorse the use of aggression against children who were labeled as 'mean', as well as children who demonstrated

pleasure from others' misfortune (i.e., "happy when bad things happen", p. 500). The authors concluded that preschool aged children use trait information, both trait labels and the character's emotional reactions to other people's hardships, when evaluating the appropriate use of aggression. This further supports the theory that children use traits in a psychologically meaningful manner and are not using a simple behavioural matching or outcome valence strategy.

Although not labeled as such within Giles and Heyman (2005) study, children made both a moral judgment of the character (whether their action was 'bad') as well as a judgment that could be considered to be about punishment (whether the child should be hit). Their study demonstrated that children do take trait information into account when making these evaluative judgments. Since the focus of the study was not to examine children's moral evaluations but their endorsement of aggression, the structure of the stories presented to children differs from typical moral paradigms in a few fundamental ways. First, the intention of the characters within the Giles and Heyman (2005) study were ambiguous. In typical moral paradigms, the main character's intentions are presented in a clear manner. For example, within the proposed study the intention of the main character is always neutral and the outcome of their action is accidental. It is uncertain from the Giles and Heyman (2005) study if children would incorporate trait information into their moral evaluations if intention information were embedded within the stories. Secondly, the outcomes of the scenarios within the study were consistently negative. Therefore, it is unclear as to whether children would use trait information when the action of the character leads to a positive outcome. Finally, Giles and Heyman (2005) investigated children's endorsement of hitting, not whether children believe the

character should be punished. Even though the endorsement of hitting question can be interpreted as children believing the character should be punished, the study did not directly look at the relation between trait information and punishment ascription.

Although Giles and Heyman's (2005) results support the notion that children do incorporate trait information into their evaluations, its methodological deviations from typical moral paradigms undermines the strength of this conclusion. The current study aimed to answer the above questions, as well as whether children's evaluation and understanding of the acting character's intentions are influenced by trait information.

Based on the research to date, it is clear that children's trait reasoning undergoes substantial development during the elementary school years (Rholes & Ruble, 1984; Ruble & Dweck, 1995; Yuill, 1992). Young children's ability to conceptualize traits as a psychological characteristic of an individual, and not just an instance of behaviour, is consistent with evidence that children's reasoning about individuals is centered around psychological reasoning. For instance, Lillard and Flavell (1990) discovered that children as young as 3 years old prefer mentalistic descriptions of actions rather than behavioural ones. Children also acquire an understanding of mental states early in life. By the time children reach 5 years old, most understand that people have their own desires and beliefs (Wellman, Cross, & Watson, 2001). The ability to consider one's own and other's mental states have been widely investigated and are broadly known as Theory of Mind (e.g., Premack & Woodroff, 1978; Wimmer & Perner, 1983; ToM).

As has been discussed, mature moral reasoning requires the ability to take into account the mental states, specifically intention, of the individual being evaluated. For example, it is expected that someone would be more upset with a child who intentionally

spilled paint on the floor than a child who had done so unintentionally. Yet, adults are also influenced by the traits they judge others to have. For instance, if the child who unintentionally spills paint over the floor is characteristically hyperactive, the adult may be less lenient towards this child than a child who is characteristically calm. This is because adults routinely form trait-based judgments in order to explain and predict other's behaviour (Erdley & Dweck, 1993; Yuill, 1993). Therefore, adults base their judgments not only on intention (e.g., the paint was spilled by accident) but also the traits in which the actor possesses (e.g., the child is normally rambunctious and was most likely not being careful). The ability to consider both intentions and trait information in a meaningful way requires a robust understanding that individuals possess their own unique mental states and that their behaviours are often a reflection of these mental states. The ability to consider others' mental states has been extensively investigated by researchers focused on Theory of Mind development (see Wellman, Cross, & Watson, 2001 for a meta-analysis). Children's ability to understand that others have internal mental states (Theory of Mind reasoning) and how this influences their moral judgments will be discussed in the proceeding section.

Theory of Mind in Children's Trait Understanding and Moral Reasoning

In order to make mature evaluate judgments children must possess a strong understanding of internal psychological states. More specifically, children are able to make more adult like moral evaluations once the child understands that a person's actions are better understood on the basis of that person's beliefs/representations of the world, as opposed to the child's understanding, or of reality. To make moral judgments based on not only outcome, but also the intention of the actor, children must be able to

consider and understand that others have their own mental states (e.g., beliefs, desires, and intentions). Children begin to demonstrate mental state reasoning around 4 and 5 years of age (Wellman et al., 2001). While ToM is a very broad construct, researchers note that children reach a significant developmental milestone when they can predict, or interpret, another's behaviour on the basis of that person's mental representation (e.g., belief) of the world. The main measures used to test for this ability are false-belief tasks.

False-belief tasks are used to provide a measure of children's ability to consider the mental state or beliefs (either their own or another's) by demonstrating that ability in situations in which someone's beliefs are in conflict with reality (e.g., Wimmer & Perner, 1983). Therefore, false-belief understanding is a relevant skill for the current research, as it will highlight whether children's mental state understanding is related to their use of intention and trait information when making judgments of a character's actions. As such, a secondary goal of the current study was to gain insight into how children's developing ToM is related to their intention ratings, as well as their use of trait information, in their moral reasoning.

Two types of false-belief tasks were utilized in the current study to evaluate ToM understanding: first- and second-order false belief tasks. ToM tasks are often used in conjunction with moral reasoning and typically false-belief tasks are utilized (e.g., Andrews, 2015; Baird & Astington; Fu et al., 2014). In a standard first-order false-belief task, a child is told about a character who places an object in one location (e.g., a toy box) and then leaves the room. While the character is absent, a second character moves the object to another location (e.g., under the bed), after this action is completed, the first character returns. Children are then asked where the first character will look for the

object. The child's answer to this question indicates whether the child is predicting the character's behaviour based on the character's beliefs (i.e., mental state) or reality (i.e., non-mental). If children answer the first location (i.e., toy box), this is interpreted as evidence that the child understands that the character will behave in accordance with their (false) belief. Children who answer with the second location (i.e., under the bed) are interpreted as the child expecting the character to act in accordance with reality, and therefore the child is not considering the character's mental representations. Typically, children are able to succeed on this task around the age of 5 (Wellman et al., 2001).

The second type of ToM skill to be included in the proposed study is a more advanced belief understanding ability, as measured by second-order false-belief tasks. These tasks measure children's ability to consider someone's beliefs about another's belief (e.g., "what does Melissa think George thinks?"). This specific task is relevant, as being able to consider not only another person's beliefs and intentions, but also what someone believes another person is thinking and feeling reveals a more mature moral reasoning ability. Specifically, within the main stories task, children will be asked whether the protagonist meant to make a secondary character happy or sad. To do this, children will not only have to consider the protagonist's intentions, but also whether the protagonist believed that the secondary character would be made happy/sad by the outcome. Thus, children's second-order false-belief understanding is relevant to the current study. Children's mastery of second-order false-belief tasks ranges from ages 5- to 6, thereby making both false-belief tasks age-appropriate for the participant age group (e.g., Sullivan, Zaticski & Tager-Flushberg, 1994; Wellman et al., 2001).

The ability to take others' mental states into account plays an important role in children's moral reasoning abilities (see Baird & Astington, 2004; Fu, Killen, Xiao, & Lee, 2014; Lane, Wellman, Olson, LaBounty, & Kerr, 2010), as this understanding allows children to evaluate similar actions differently dependent upon the actor's intentions (Yuill, 1984). This has been demonstrated to play a role in children's use of trait information (Gao & Yang, 2007). Mental state understanding may serve as a foundation for children's continually refinement of their understanding of individuals, including their ability to understand that others have stable trait characteristics (see Heyman, 2009). Thus, the study examined the role of first- and second-order false-belief understanding when evaluating children's moral reasoning. However, children's ToM abilities are not the only skill which may influence children's performance on the current tasks, therefore, other cognitive skills were considered in conjunction with ToM reasoning.

Contributing Cognitive Skills

Due to the nature of the stories task as well as the false-belief tasks, children's performance may be influenced by other cognitive skills, such as working memory and receptive language skills. Both the moral reasoning stories and false-belief tasks are highly verbal and require children to hold information in mind (e.g., instructions, stories, questions etc.). Thus, measures of working memory and receptive language skills were administered and used as control variables in the analyses. I will briefly review these skills here.

Working Memory. Working memory is the ability to hold and manipulate information in the mind (e.g., Garon et al., 2008). The current study looked specifically at phonological working memory, which allows individuals to store and rehearse verbal information (Baddely, 1986). This aspect of working memory is of particular relevance, as participants were required to hold verbal information (e.g., story details, instructions, etc.) in mind. Specifically, children had to hold and manipulate story and character information in order to correctly comprehend the stories and answer questions. It is important to control for verbal working memory as it may act as a confounding variable. Therefore, children received the backward digit span task.

The backward digit span task (Davis & Pratt, 1996) is a commonly used task for measuring phonological working memory in young children (e.g., Alloway, Gathercole, Willis, & Adams, 2004). In this task children listened to a string of numbers, starting with strings of 2. The child must then repeat the numbers, but in backwards order. The length of the number string increased by one per set, with two trials within each set. This task required children to store and manipulate the information prior to recall, thus taxing the child's working memory (Bull, Espy, & Wiebe, 2008). This task has been successfully used with 4 and 5-year-olds in previous research (e.g., Alloway, 2007; Gathercole, Brown, & Pickering, 2003).

General Receptive Language Skills. Since the tasks within the study are highly verbal, it is important to control for general language ability. Children received the PPVT-III (Dunn & Dunn, 1997), which is a standardized measure of receptive vocabulary. Thus, receptive vocabulary was controlled for in the analyses.

Present Study

The main goal of the current study was to explore the way in which children incorporate trait information into their evaluation of a character's intentions, as well as their moral evaluations and punishment ascriptions of that character. Providing trait information in a moral paradigm aids in the advancement of understanding how traits influence children's moral decisions, while more closely mirroring the information children often have access to in their everyday social lives. To investigate whether trait information, and the valence of the trait, impacted children's evaluation of others, children's judgments in two Trait-Present conditions (Nice Trait-Present and Mean Trait-Present) were compared to how children judge a character when they were presented in a Trait-Absent condition. These conditions were varied between subjects. The Trait-Present conditions involved children hearing stories in which story protagonists were introduced as either 'nice' or 'mean', and children heard a list of three behaviours that the character engages in which exemplify that trait, drawn from developmental trait research (the same list was used for a given trait, across stories; see Boseovski, Chiu, & Marcovitch, 2013; Boseovski & Lee, 2006). That character then went on to perform a neutral action, with a neutral intention, which resulted in an *unforeseen* positive, or negative, emotional outcome for a secondary character (the outcome is always accidental).

The third condition, the Trait-Absent condition, involved children hearing the *same* stories as those in the Trait-Present conditions but with the exclusion of any trait information. Instead, children were introduced to the character as having certain eye and hair colour (to match for story length and detail). The stories in this condition were

much like those employed in more standard moral reasoning studies, and served as a comparison to the Trait-Present conditions. Since the stories in all conditions were identical (except for the presence of a trait), differences in children's ratings (moral judgment, punishment and intention) across conditions could be reasonably assumed to be due to the influence of trait information. After hearing each story, children in all conditions answered comprehension questions to make sure they have tracked the relevant story details. They were then asked to indicate whether the character's actions were intentional ("on purpose or by accident"), to morally evaluate the character ("was [*character*] being good?" and "was [*character*] being bad?")¹, and whether the character should be punished ("should [*character*] get in trouble?"). The identification of intention, moral judgment ratings, and punishment assignment was calculated for each story and used in the analyses.

Trait information was manipulated between subjects, while outcome (positive vs. negative) was manipulated within subjects. Between-subject differences between children's ratings of a 'nice', 'mean', or 'trait-absent' characters allowed me to determine whether children used trait information, and whether its use differed depending upon the valence of the trait and outcome information. For example, children's judgements may not be affected (relative to the Trait-Absent Condition) by the additional information of a 'nice' trait label because of children's general positivity bias (e.g., Newman, 1991). However, they may be highly influenced by the presence of a 'mean' trait (e.g., Giles & Heyman, 2005). Examining how these judgments were affected across positive and

¹ A detailed reasoning for the particular phrasing of the moral judgment question will be discussed in the methods section.

negative outcomes contributes to a more complete picture of how children utilize trait information in morally relevant situations.

In addition to child participants, adult participants were also recruited and were tested on the main stories task. The inclusion of adult participants was to ensure that all six stories utilized in the main stories task, as well as the intention, moral judgment, and punishment questions were interpreted as expected. Given that all story characters' intentions were neutral, it was projected that adult participants would rate all story characters fairly neutrally, with little to no punishment.

The second goal of this study was to gain insight into how children's developing ToM is related to their intention ascriptions, as well as their use of trait information in their moral reasoning. Children received both first- and second-order false belief tasks in order to examine how children's understanding of others' mental states relate to children's use of trait information in their judgments of intention, moral evaluations, and punishment.

Hypotheses

1. The first set of hypotheses was that child participants would incorporate character trait information in their moral evaluation and punishment ascriptions. This would be demonstrated by significant differences in judgment ratings between the Trait-Present conditions and the Trait-Absent conditions for a given outcome valence (negative vs. positive). Differences were predicted given that past research has demonstrated that young children take trait information into consideration when making predictions about an actor's future behaviour (e.g., Heyman & Gelman, 1998, 1999) as well as in their endorsements of the use of physical aggression against a transgressor (Giles & Heyman,

2005). Moral judgment scores and punishment scores were expected to be consistent with one another for each trait by outcome combination; consistent with previous research (Andrews, 2015; Andrews et al., 2015; Nobes et al., 2016). The specific hypotheses were as follows:

- a. It was hypothesized that children would rate a ‘mean’ character significantly more negatively and ascribe more punishment than they would a ‘nice’ character when both characters produced a positive outcome.
- b. Next, it was hypothesized that children would rate a ‘mean’ character significantly more negatively and ascribe more punishment than they would a ‘nice’ character when both characters produced a negative outcome
- c. Next, it was hypothesized that children would rate a ‘trait-absent’ character significantly more positively and ascribe less punishment than they would a ‘mean’ character, when both characters produce a positive outcome.
- d. Further, it was hypothesized that children would rate a ‘trait-absent’ character significantly more positively and ascribe less punishment than they would a ‘mean’ character, when both characters produce a negative outcome.
- e. Also, it was hypothesized that children would not rate a ‘trait-absent’ character and a ‘nice’ character significantly differently from one another in their moral judgments or punishment ascriptions when the outcome was positive.
- f. Lastly, it was hypothesized that children would rate a ‘trait-absent’ character significantly more negatively and ascribe more punishment than they would a ‘nice’ character, when both characters produced a negative outcome.

2. The second set of hypotheses was that children's ascriptions of intention would be influenced by whether a character was given the trait of 'nice' or 'mean'. Specifically, when character trait information is congruent with outcome ('nice' and 'positive', or 'mean' and 'negative'), children will deem that action as intentional. It is predicted that children, like adults, will be influenced by the presence of trait information in their intention ascriptions (Hughes & Trafimow, 2015).

- a. It was hypothesized that 'mean' characters would be scored as acting intentionally a significantly higher proportion of the time when the outcome is negative when compared to a positive outcome.
- b. Also, it was hypothesized that 'nice' characters would be scored as acting intentionally significantly more when the outcome is positive when compared to a negative outcome.

3. The third set of hypotheses was that false-belief understanding would be related to children's performance in both the Trait-Present and Trait-Absent conditions. Research has demonstrated that having a better false-belief understanding is related to more mature moral reasoning, as it demonstrates the ability to consider others' intentions (Wellman et al., 2001). Therefore, children who perform well on the false-belief tasks would have higher accuracy in their intention questions, as well as moral judgment and punishment ratings that are less severe (since intentions are neutral within all stories).

- a. It was hypothesized that false-belief scores would be significantly, positively correlated with accuracy on intention questions, controlling for working memory and receptive language abilities.

- b. Next, it was hypothesized false-belief scores would be significantly, negatively correlated with moral judgment ratings, controlling for working memory and receptive language abilities.
- c. Finally, it was hypothesized that false-belief scores would be significantly, negatively correlated with punishment scores, controlling for working memory and receptive language abilities.

Method

Participants

The participants for this study were a total of 62 four-year-old and 5 year-old children; however 1 child was excluded for failing to correctly answer at least one story comprehension question, after three attempts. The remaining sample consisted of 61 children between 48 and 71 months of age ($M = 57$, $SD = 7.64$). Of the child participant sample, 49.2% were male. One group of 30 adults (43.3% male) were recruited to participate to provide an adult comparison. Children were recruited from daycares and schools in the Ottawa area. Informed consent was obtained from the director of the daycare or school principal, as well as from the parents or legal guardian of the children who participated in the study (see appendices A, B, D, & E). Children were asked for verbal assent before participating and were informed that they may withdraw from testing at any time. Experimenters were sensitive to the child's comfort levels and discontinued testing if the child appeared uncomfortable. Testing took place in a quiet space within the daycare, such as a corner in the classroom or in a hallway. After children finished their testing session they received a sticker of their choosing (with the

teacher's approval). After all the completion of all testing sessions, the teachers were given enough stickers for all children in the class, regardless of their participation. Children were randomly assigned to either the Nice Trait-Present (20), Mean Trait-Present condition (20) or Trait-Absent Condition (21), with roughly equal numbers of boys and girls in each condition. Adult participants were recruited through SONA system at Carleton University as well as through word of mouth. Informed consent was obtained from each participant (see Appendix F).

Procedure

Children were tested one-on-one with a researcher in a quiet space in the daycare. Children participated in two testing sessions that lasted for 15-20 minutes. All tasks were presented in a fixed order for all three conditions: familiarization trial, stories task, first-order false belief (2 tasks), stories task, second-order false belief (2 tasks), stories task, backward word span task, stories task, and a receptive vocabulary measure (PPVT)². The orders of tasks were fixed to keep sessions consistent in order to investigate individual differences (see Carlson & Moses, 2001).

Familiarization Trial. All participants, regardless of condition, were first presented with two familiarization stories (with illustrative photos). This allowed children to become familiar with the moral judgment and punishment questions that were used in the main stories task. Further, they determined whether participants were able to appropriately evaluate a character that performed a 'good' or 'bad' action in a straightforward scenario, and that they were able to answer questions both in the positive and negative. Additionally, the familiarization trial was used to ensure that children were

² Children also received another measure that was not a part of this thesis.

able to comprehend story details at the level required to successfully complete the proceeding stories task.

The familiarization trial consisted of simple scenarios in which a character performed a stereotypically ‘good’ or ‘bad’ action (Andrews, 2015; See Appendix H). For instance, in the ‘good action’ familiarization story, children heard, “This is Harper and this is Morgan. Harper is drawing a picture with her crayons. Then she sees that Morgan doesn’t have anything to colour with so Harper decides to share her crayons with Morgan. Now Morgan can draw a picture.” Children were then asked a series of questions: comprehension questions, (“Were they eating a snack? Did Harper share her crayons with Morgan?”); moral judgment questions (“Think about Harper. Was Harper being good? Was Harper being bad?”, if ‘yes’, this is followed with, “How good/bad? A little or a lot?”); and punishment questions (“Think about Harper. Should Harper get in trouble?” If ‘yes’, this is followed with, “How much? A little or a lot?”). If participants responded incorrectly on the comprehension questions, feedback was given and relevant story details were repeated. Regardless of the child’s answer, testing continued.

Stories Task. In all conditions, children received a total of six stories. Across the six stories, three stories had a positive outcome and three stories had a negative outcome. Stories were presented to children individually, separated by the remaining tasks, and spread across two testing sessions. In the Trait-Present conditions, characters were introduced by name, described by a trait (nice or mean), and a list of 3 of their behaviours that exemplify that trait. The behavioural trait examples utilized for this study were from existing trait literature in which children successfully recognized the given behaviour as ‘nice’ or ‘mean’ (see: Boseovski et al., 2006; Gneep & Chilamkurti,

1988; Landrum, Pflaum, & Mills, 2016; Liu, Felman, & Wellman, 2007; Yull & Pearson, 1998). All behavioural trait examples were constant across stories with the same trait (i.e., all 'nice' characters are described as having done the same nice things). In the Trait-Absent condition, characters were introduced by their name, along with two physical descriptions (i.e., hair colour and eye colour) as well as if the character has a sister or a brother. This allowed for a closer story structure match to the Trait-Present conditions, as characters in the Trait-Absent condition were not described with any trait-relevant information. After the main character's introduction, that character is described as doing a neutral action which inadvertently brought about an outcome, that leads to either a positive (i.e., make a secondary character happy) or negative (i.e., make a secondary character sad) emotional outcome for a secondary character. Each child received all six story-themes (regardless of trait condition); with the order presentation for positive and negative outcomes counterbalanced between participants. The orders in which the stories were presented also varied, with two different orders counterbalanced across participants (see Appendix Q). That way, story themes were not confounded with condition (mean, nice, or trait-absent), or with outcome.

In all stories, the characters had matched neutral intentions, with the outcome being accidental and equally foreseeable. Research has shown that the concepts of negligence and the foreseeability of the outcome are factors that may influence children's moral reasoning, with actions that are seen as negligent or foreseeable being deemed morally worse (e.g., Gall, 1985; Nobes et al., 2009). Therefore, characters across each story theme were matched in terms of foreseeability as well as negligence (i.e., matched foreseeability and similar negligent actions).

The story structure was the same for all conditions. Each story consisted of seven sections, each accompanied by a photo of dolls enacting the scene (see Appendix M for sample photos). First, the main characters were introduced by name, and some information was provided (either personality trait or physical information). They were then described as engaging in a neutral action (e.g., “Karli is playing with a hose in her backyard”). Then a secondary character was introduced, along with a description of what he/she is doing (e.g., “This is Sam. Sam is playing in her backyard.”). Next, it is made clear that the outcome is not foreseeable, as this is important to make clear that the outcome, whether positive or not, was not intended (e.g. “Karli does not see Sam.”). This was followed by the main character’s actions. The characters’ actions all resulted in something happening to the secondary character, or the secondary character’s belongings (e.g., “Look, some of the water went over the fence and splashed Sam.”). This was then described as have a positive (e.g., “Sam is happy, she was hot and the water cooled her off.”) or negative (e.g., “Sam is sad, now she has to get dry clothes.”) emotional effect on the secondary character. An example of each trait type (i.e., mean, nice, or trait-absent), are presented in Table 1.

After each story, children were asked comprehension questions, to identify the character’s intention, to make moral evaluations of the primary character, and to indicate how much trouble the character should be in for their behaviour. The comprehension questions ensured that the child understood the relevant story details. If the child answered any of the comprehension questions incorrectly, the relevant story details were repeated and the questions were asked again. This was repeated up to three times. If the child failed to answer the comprehension questions correctly after three times, testing

continued, but responses for that story were not entered for analysis. The intention, moral judgment, and punishment questions were grouped into ‘blocks’ (see Table 1), with the intention block always being asked first, followed by either the moral judgment block, or the punishment block (the order of these blocks were counterbalanced across participants).

The intention question block consisted of three questions. The first intention question (2a) was about the character’s initial intentional action (e.g., “Think about Karli. Did Karli splash the water in her backyard on purpose or by accident?”). The second intention question (2b) asked about the unintentional outcome (e.g., “Did Karli get water on Sam on purpose or by accident?”), the final intention question (2c) asked about the secondary character’s emotional reaction (e.g., “Did Karli make Sam happy [sad] on purpose or by accident?”). Within the intention question block, the phrasing of the question ‘on purpose or by accident’ was counterbalanced across participants.

Children received a score of 1 for each intention question they were able to correctly answer regarding the main character’s actions for a score range of 0-1, per question. These scores were then summed across the three stories for each type (i.e., positive outcome vs. negative outcome), for a score range of 0-3. Question 2a is referred to as ‘intention-Qa’, which pertains to the intended physical outcome. Question 2b is referred to as ‘intention-Qb’, and pertains to the unintended physical outcome. Question 2c is referred to as ‘intention-Qc’ and regards the secondary character’s emotional response (i.e., the outcome). These intention scores were used in the analyses.

The moral judgment question block consisted of two questions. The child was asked to rate whether the main story character was ‘being good’ (3a) (e.g., Think about

Karli, was Karli being good?”, if answered in the affirmative, it is followed with, “How good? A little or a lot?”) as well as whether the character was ‘being bad’ (3b) (e.g., Think about Karli, was Karli being bad?”, if answered in the affirmative, it is followed with, “How bad? A little or a lot?”). This specific phrasing was chosen in light of findings from Nobes et al. (2016). Although, Nobes et al. (2016) suggested using moral judgment questions that are strictly agent focused (for example, “Is Karli bad or good?”), their specific phrasing may promote memory recall of the trait given to the character at the beginning of the stories in the Trait-Present conditions (which Nobes et al. did not have in their study). Therefore, the phrasing ‘being good’ or ‘being bad’ was used in an attempt to draw attention to the agent in that particular situation and not the enduring characteristic of being ‘good’ or ‘bad’. Within the moral judgment question block, whether children are first asked if the character was ‘being good’ or ‘being bad’ was counterbalanced.

For the moral judgment questions, questions 3a and 3b were converted into numeric scores. Question 3a (i.e., “was [*name*] being good?”) ranged from 0 to 2, with 0 being ‘not good’ and 2 being ‘a lot good’. Question 3b (i.e., “was [*name*] being bad?”), ranged from -2 to 0, with ‘not bad’ being scored as a 0 and ‘a lot bad’ being scored as -2. They were then combined to produce the moral judgment score. Moral judgment ratings ranged from -2 to +2 (per story) with more negative numbers corresponding to more ‘being bad’ judgments. The moral judgment questions were scored in such a way to allow for the possibility of a neutral answer as well as a more sensitive measure of how ‘bad’ or ‘good’ children perceive the character’s actions to be. The moral judgment composite score was calculated for each story by adding the ‘being good’ score (0 to 2)

to the ‘being bad’ score (-2 to 0). This resulted in a score ranging from -2 through 2 (five-point range). The scores for stories with matched outcomes were summed, for a total score ranging from -6 to 6. These scores were used in the analyses.

The punishment question block consisted of one question, which asked whether the main character should get in trouble (e.g., “Should Karli get in trouble?” [if yes], How much trouble, a little or a lot?”). Examples of the story questions are presented in Table 1 (see Appendix M for example story photos).

Children’s answers to question 4 were converted into a numeric score. Punishment ratings ranged from 0 - 2 (per story), with ‘no punishment’ being scored as 0 and ‘a lot of punishment’ being scored as a 2. Similar to the moral judgment score, the scores for matched outcome stories were summed, for a total score ranging from 0 to 6. These scores were used in the analyses.

Other Cognitive Measures

For the reasons discussed above, children received Theory of Mind measures (first- and second-order false belief), a working memory measure (backward digit), as well as a receptive vocabulary task (PPVT-III).

First-order False Belief. Children were given two first-order false belief tasks (see Appendix N). The first false-belief task (a change of location task) is an adaptation (Vendetti, 2015) from Wimmer and Perner (1983). Children were told a story in which two characters were both aware of the initial location of an object. One character then moved the object to a new location without the knowledge of the second character. The second character then had a mistaken belief about the location of the object.

Table 1

Stories Task Examples with Questions

Components	Water Hose Story: Trait Present Nice	Water Hose Story: Trait Present Mean	Water Hose Story: Trait Absent
Trait Condition	This is Karli. Karli is nice. She shares her toys, helps to clean up messes and shares snacks with her friends. Karli is nice.	This is Karli. Karli is mean. She doesn't share her toys, she calls her friends mean names and takes other children's snacks. Karli is mean.	This is Karli. She has brown hair, brown eyes and a little brother. This is Karli.
Memory Check	Is Karli nice or mean?	Is Karli nice or mean?	Does Karli have a brother or sister?
Introduction of Main Character in Story Context	Karli is playing with a hose in her backyard.	Karli is playing with a hose in her backyard.	Karli is playing with a hose in her backyard.
Introduction of Secondary Character	This is Sam. Sam is playing in her backyard.	This is Sam. Sam is playing in her backyard.	This is Sam. Sam is playing in her backyard.
Foreseeability	Karli does not see Sam.	Karli does not see Sam.	Karli does not see Sam.
Action	Karli is using the hose to splash water all over her backyard.	Karli is using the hose to splash water all over her backyard	Karli is using the hose to splash water all over her backyard.
Outcome of Action	Look, some of the water went over the fence and splashed Sam.	Look, some of the water went over the fence and splashed Sam.	Look, some of the water went over the fence and splashed Sam.
Positive Emotional Outcome	Sam is happy, she was hot and the water cooled her off.	Sam is happy, she was hot and the water cooled her off.	Sam is happy, she was hot and the water cooled her off.
Negative Emotional Outcome	Sam is sad, now she has to get dry clothes.	Sam is sad, now she has to get dry clothes.	Sam is sad, now she has to get dry clothes.

<p>Comprehension Question</p>	<p>1a) Think about Karli. Did Karli see Sam? 1b) Think about Sam. Did Sam get splashed with water? 1c) Was Sam happy or sad about getting splashed with water?</p>	<p>1a) Think about Karli. Did Karli see Sam? 1b) Think about Sam. Did Sam get splashed with water? 1c) Was Sam happy or sad about getting splashed with water?</p>	<p>1a) Think about Karli. Did Karli see Sam? 1b) Think about Sam. Did Sam get splashed with water? 1c) Was Sam happy or sad about getting splashed with water?</p>
<p>Intention Question [Intention Block]</p>	<p>2a) Think about Karli. Did Karli splash the water in her backyard on purpose or by accident? 2b) Did Karli get water on Sam on purpose or by accident? 2c) Did Karli make Sam happy [sad] on purpose or by accident?</p>	<p>2a) Think about Karli. Did Karli splash the water in her backyard on purpose or by accident? 2b) Did Karli get water on Sam on purpose or by accident? 2c) Did Karli make Sam happy [sad] on purpose or by accident?</p>	<p>2a) Think about Karli. Did Karli splash the water in her backyard on purpose or by accident? 2b) Did Karli get water on Sam on purpose or by accident? 2c) Did Karli make Sam happy [sad] on purpose or by accident?</p>
<p>Moral Judgment Question [Moral Judgment Block]</p>	<p>3a) Was Karli being good? If Yes: How good? A little or a lot? 3b) Is Karli being bad? If Yes: How bad? A little or a lot?</p>	<p>3a) Was Karli being good? If Yes: How good? A little or a lot? 3b) Is Karli being bad? If Yes: How bad? A little or a lot?</p>	<p>3a) Was Karli being good? If Yes: How good? A little or a lot? 3b) Is Karli being bad? If Yes: How bad? A little or a lot?</p>
<p>Punishment Question [Punishment Block]</p>	<p>4a) Should Karli get in trouble? If yes: How much trouble? A little or a lot?</p>	<p>4a) Should Karli get in trouble? If yes: How much trouble? A little or a lot?</p>	<p>4a) Should Karli get in trouble? If yes: How much trouble? A little or a lot?</p>

For example, “Jill was playing with a ball. When she was done playing with it, she put it in the white box and then she went outside, while Jill was outside, her friend Peter came along. Peter found the ball in the white box and he played with it for a while. When he was done, he put it in the polka dot box and then he went home for lunch.” Children were then asked a memory question about the ball’s initial location (“Where did Jill put the ball?”), and a reality question about where the ball is presently located (“Where is the ball now?”). Then the child was asked about the character with a false-belief, “Jill wants her ball. Where will Jill first look for her ball?”. If all three questions were answered correctly, children received a score of 1 for this task; otherwise they received a score of 0.

The next first-order false-belief task children received was the unexpected contents task, which was adapted (Vendetti, 2015) from Gopnik and Astington (1988). In this task children were presented with a cardboard Crayola box and were asked what they believed was inside (“What’s in here?”). The researcher then opened the box to reveal to the child that there is a toy pig (an unexpected item) in the box instead of crayons. The researcher comments, “Yeah! A pig! That’s interesting isn’t it? I just put it in this box to keep it safe. Well, let’s put him back in to the box now...”. The researcher then placed the pig back inside the box, making sure to close the lid. The child is then asked, “What’s in the box?” (*reality* question) and “What did you think was in the box, before we opened it?” (false belief-self). Finally, the child is asked, “Tomorrow, we are going to a different daycare, and we’re going to play this game with a little boy/girl named Jimmy/Betty there. What will s/he think is inside the box before s/he opens it?” (false belief-other). Children received a score of 1 for each false belief question

answered correctly, but only if they answered the reality question correctly. The scores across the tasks are summed for a total first-order false belief score ranging from 0-3.

This score was used in the analyses.

Second-order False Belief. Children also received two second-order false-belief tasks (See Appendix O ; Loke, 2010; Sullivan et al., 1994; Vendetti, 2015). In the first task, children heard a story about two characters. Both characters within the story were aware of the location of an object and were aware that it had been moved from one place to another. However, one character had a false belief about the other character's knowledge regarding the location of the object. For example, "Molly and Andrew are doing their homework in the kitchen. Molly made some cookies for them to share. Andrew wants to eat the cookies now, but Molly doesn't want to. Molly needs to ask her dad a question about her homework. She puts the plate of cookies in the fridge and leaves the room. While Molly is gone, Andrew gets the plate of cookies and eats one of them. Then he puts the plate of cookies in the cupboard. Molly is finished asking her dad a question and she comes back. She sees Andrew putting the plate of cookies in the cupboard. Molly watches Andrew, but Andrew does not see Molly." Next, children were asked a memory question about the object's initial location, as well as a reality question about where the object actually was. They were then asked, "Does Molly know where the cookies are now?", and the second-order false belief question, "Where does Andrew think Molly will look for the cookies?". If children correctly answered the memory and reality questions as well as both belief questions, they received a score of 1. If children answered any of the questions incorrectly, they received a score of 0. The subsequent second-order false belief task followed an identical structure with different

objects and character names (see Appendix O). The scoring structure was also the same, and performance on the two second-order tasks was summed, resulting in scores from 0-2. This score was used in the analyses.

Working Memory Tasks. Children received the backward digit span as a measure of phonological working memory (see Appendix P).

Backward digit span task. This task was based on Davis and Pratt (1996). In this task, children heard a series of digits that were paced approximately one second apart. Children were then asked to repeat the digits but in backwards order. Children were given two test trials with corrective feedback before test trials began. Beginning with two digits, children were given two trials for each set. The trials then increased by one digit, by set, for a maximum of six digits and a total of five sets. The task was discontinued when children answered incorrectly on both trials or finished all five sets. Children receive a score of 1 for each number correctly answered, for a total score out of 40.

Peabody Picture Vocabulary Test – Third Edition (PPVT-III; Dunn & Dunn, 1997). The PPVT-III is a standardized measure of receptive vocabulary and was administered as instructed by the testing manual. In this task children were presented with four pictures on a single page and had to indicate which picture best fit the word that the experimenter said. Each new word corresponded to a new page of pictures. Before testing began, children received multiple practice trials and received feedback as needed. Regardless of the child's performance on the practice trails, testing continued, beginning where the manual deemed age appropriate. If children did not successfully reach 'basal' (i.e., series of 8 consecutive correct answers), children were tested on words

that are considered below the age norm until ‘basal’ was reached. Words were organized into blocks of twelve and as the child completed a block the subsequent block increased in difficulty. If the child errs eight or more times in a single block the task was stopped. Children’s scores were based on the number of accurate items.

Results

Prior to conducting the main analyses to examine performance on the main stories task, preliminary examination of the data was conducted in order to ensure that participants in three conditions (i.e., Mean-Trait, Nice-Trait, and Trait-Absent) were matched on all common measures. Twenty children were in the Mean-Trait Condition, 20 were in the Nice-Trait Condition, and 21 children were in the Trait-Absent Condition (roughly the control condition; see Appendix R for descriptive table). The three groups of participants did not differ significantly on any of the shared measures, nor on age or gender (see Table 2).

Additionally, 30 adults were recruited (10 per condition) to provide an adult comparison on the main stories task. This was to ensure that the stories task questions were eliciting the expected responses. Adults were expected to be accurate on all intention questions, with neutral moral judgments, and little to no punishment assignment for all conditions. Adult performance mean scores on the main stories task, as well as child performance scores, can be found in Table 3.

The data was also examined to ensure that assumptions were met for the analyses conducted. In terms of the mixed-design MANOVA, the assumption of

Table 2

MANOVA Comparing Conditions on Common Variables

Variable	Mean Trait		Nice Trait		Trait Absent		<i>F</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Age (in months)	58.35	6.97	57.53	8.59	54.90	7.314	1.14	.326
Gender	0.65	0.49	0.58	0.51	0.33	0.48	2.34	.106
1 st Ord. False Belief (0-3)	2.00	0.97	2.05	1.08	1.76	0.94	0.49	.615
2 nd Ord. False Belief (0-2)	0.20	0.52	0.16	0.50	0.24	0.54	0.12	.889
Backward Digit (0 - 40)	4.70	4.69	3.37	4.76	3.05	5.48	0.62	.542
PPVT	75.25	22.55	73.63	18.00	70.29	18.84	0.33	.719

Note: Mean-Trait *n* = 20, Nice-Trait *n* = 20, Trait-Absent *n* = 21

multivariate normality is satisfied if sample sizes are roughly equal, or if there is a minimum of 20 degrees of freedom for the between-participant error term when two-tailed tests are used (Tabachnick & Fidell, 2007, p. 373). The sample sizes on all variables were close to equal (approximately 20 children per condition), therefore, this assumption was met. A Levene's test of homogeneity of variance was utilized to inspect the homogeneity of covariance within each dependent variable. The analyses revealed that the variance within certain dependent variables were significantly different, meaning that the variance between variables is unlikely to have occurred based on random sampling. The null hypothesis of equal variance was rejected in the following variables: moral judgment scores for positive outcome, $F(2, 58) = 13.07, p < .001$; moral judgment scores for negative outcome, $F(2, 58) = 4.52, p = .015$; punishment scores with positive outcomes, $F(2, 58) = 11.29, p < .001$; punishment scores with negative outcomes, $F(2, 58) = 7.68, p = .001$; intention-Qb with positive outcomes, $F(2, 58) = 19.28, p < .001$; and intention-Qc with positive outcome, $F(2, 58) = 17.60, p < .001$. Since the univariate

tests were significant, the assumption of homogeneity of covariance was violated. Therefore, Hotelling's T^2 statistic was used to report the results, as it is robust to homogeneity of covariance violations (Field, 2009).

Additionally, preliminary inspection of the data for order effects was conducted using a mixed design MANOVA, which included five dependent variables (the three intention questions, the moral judgment question, and the punishment question). Independent variables included outcome (positive vs. negative) as a within-subjects variable, and four between-subjects variables that pertained to the order of stories/questions. The four orders included: (1) whether participants heard the moral judgment question before or after the punishment question; (2) whether the participants were asked if the character was 'being good' before or after being asked if the character was 'being bad'; (3) whether the intention question phrasing used 'on purpose' or 'by accident' first; and (4) finally, the order in which the participant received the stories (there were two possible orders; see Appendix Q). The analyses revealed that there were no significant main order effects, nor any significant interactions (all $ps > .13$). Therefore, the orders were not considered in the remaining analyses.

In order to examine the relation between false belief understanding and children's performance on the main stories task, partial correlations were employed. Therefore, the assumptions for partial correlations were also analyzed. Skew and kurtosis values were not within the recommended +/- 2 range (Tabachnick & Fidell, 2006). Therefore, the data was analyzed using square root transformations, which reduces both skew and kurtosis (Field, 2009).

Table 3

Means and Standard Deviations for Adult and Child Participants by Trait Condition on Intention Accuracy, Moral Judgment and Punishment.

Dependent Variable	Trait Condition					
	Mean-Trait		Nice-Trait		Trait-Absent	
	Child	Adult	Child	Adult	Child	Adult
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Intention-Qa Positive (0-3)	0.15(0.37)	2.60(0.52)	1.15(1.27)	2.50(1.08)	0.06(0.87)	2.30(0.09)
Intention-Qa Negative (0-3)	1.25(1.33)	2.50(0.97)	0.95(1.23)	2.50(0.97)	0.81(1.17)	2.50(1.08)
Intention-Qb Positive (0-3)	2.70(0.73)	3.00(0.00)	2.30(1.03)	3.00(0.00)	2.38(0.92)	2.90(0.32)
Intention-Qb Negative (0-3)	1.85(1.31)	3.00(0.00)	2.25(1.12)	3.00(0.00)	2.33(1.06)	3.00(0.00)
Intention-Qc Positive (0-3)	2.85(0.50)	3.00(0.00)	1.95(1.32)	3.00(0.00)	2.19(1.17)	3.00(0.00)
Intention-Qc Negative (0-3)	1.75(1.37)	3.00(0.00)	2.00(1.26)	3.00(0.00)	2.19(1.07)	3.00(0.00)
Moral Judgment Positive (-6 to 6)	0.60(3.47)	2.80(2.25)	4.95(1.64)	4.10(1.97)	1.57(4.91)	4.20(2.70)
Moral Judgment Negative (-6 to 6)	-4.30(2.56)	1.30(1.50)	1.25(3.91)	2.60(2.50)	0.38(4.60)	3.80(1.69)
Punishment Positive (0-6)	0.95(1.57)	0.40(0.97)	0.30(0.98)	0.00(0.00)	1.38(2.54)	0.20(0.63)
Punishment Negative (0-6)	3.45(2.72)	0.60(0.84)	0.65(1.46)	0.00(0.00)	1.86(2.57)	1.00(1.41)

Main Analyses

In order to investigate whether child participants incorporated trait information into their intention ascriptions, moral judgments, and punishment evaluations, a mixed-design MANOVA was conducted. Five dependent variables were included in the analyses: accuracy scores on the ‘intention-Qa’, ‘intention-Qb’ and ‘intention-Qc’, as well as children’s moral judgment scores and punishment scores. Outcome (positive versus negative) was included as a within-subject variable.

The first set of hypotheses was that children would incorporate trait information into their moral evaluations and punishment ascriptions. It was expected that this would be demonstrated by significant differences in judgment scores across Trait conditions, with children assigning more negative moral judgments, and greater punishment, to ‘mean’ characters relative to the ‘nice’ and trait-absent ones. Further, it was predicted that these judgments would also be influenced by the valence of the outcome (i.e., whether it was a positive or a negative outcome). The analysis revealed that this hypothesis was supported. Using Hotelling’s T^2 statistic, there was a significant effect of Trait condition, $T = .62$, $F(10, 106) = 3.29$, $p = .001$. There was also a significant effect of Outcome, $T = .91$, $F(5, 54) = 9.78$, $p = .001$. These main effects were qualified by a significant interaction between Trait condition and Outcome, $T = .57$, $F(10, 106) = 2.95$, $p = .003$.

To investigate this significant interaction, univariate analyses of variance (ANOVAs) were run for each dependent variable, with Trait condition and Outcome included as independent variables. There was a significant interaction between Trait condition and Outcome for the moral judgment rating, $F(2, 58) = 4.45$, $p = .016$, as well

as for punishment rating, $F(2, 58) = 8.38, p = .001$. Recall that specific predictions were made in terms of a Trait condition by Outcome interaction. Namely, it was hypothesized that children would judge a 'mean' character more negatively in both their moral judgment and punishment scores than they would for a 'nice' or 'trait-absent' character, in both positive and negative outcomes. It was also hypothesized that both moral and punishment judgments for a 'trait-absent' character would be more negative than those for a 'nice' character when both characters produced a negative outcome, but that these ratings would not differ when the outcome was positive. To investigate whether these hypotheses were supported, as well as the significant interactions between Trait and Outcome, independent sample t-tests were utilized.

In support of the hypothesis, there was a significant difference for moral judgments between Mean-Trait and Nice-Trait conditions, for both the positive, $t(27) = 5.07, p < .001$ and negative outcomes, $t(38) = 5.32, p < .001$, with children giving 'nice' characters more positive moral judgments than 'mean' characters. In contrast with the hypothesis, when comparing Mean-Trait and Trait-Absent conditions, moral judgment scores did not differ when the outcome was positive, $t(39) = 0.73, p = .471$. However, in support of the hypothesis, Mean-Trait and Trait-Absent conditions differed significantly when there was a negative outcome, $t(31.58) = 4.05, p < .001$, with children rating 'mean' characters more negatively. In direct contrast to the hypothesis, when comparing Nice-Trait and Trait-Absent conditions, moral judgment scores differed when the outcome was positive, $t(24.58) = -2.98, p = .006$, with children rating 'nice' characters more positively, but there was no significant difference when the outcome was negative, $t(39) = -0.65, p = .519$.

To explore the significant interactions between Trait and Outcome for assigned punishment, independent sample t-tests were once again utilized. In contrast to the hypothesis, when comparing Mean-Trait and Nice-Trait conditions, there was no significant difference in punishment assignment when the outcome was positive, $t(31.80) = -0.65, p = .126$. However, in support of the hypothesis, there was a significant difference in punishment ascriptions for negative outcomes, $t(29.09) = -4.05, p < .001$, with children assigning ‘mean’ characters more punishment than ‘nice’ characters. Interestingly, and in contrast with the hypothesis, when comparing the Mean-Trait and Trait-Absent conditions, there were no significant difference in punishment for either the positive, $t(33.61) = 0.66, p = .520$, or the negative, $t(39) = -1.93, p = .061$, outcomes. When comparing Nice-Trait and Trait-Absent conditions, there were no significant differences in punishment for positive outcome, $t(26.07) = 1.81, p = .081$, nor negative outcome, $t(31.96) = 1.86, p = .072$. Therefore, the hypotheses were only partially supported.

The second set of hypotheses predicted that children’s intention ascriptions would be influenced by trait information. Specifically, it was hypothesized that when character trait information is congruent with outcome (e.g., a ‘nice’ character’s action resulting in a positive outcome), children will be more likely to deem that action as intentional. The hypotheses were partially supported. Utilizing the MANOVA described above, there was a significant interaction between Trait condition and Outcome for intention-Qa (e.g., “Did Karli splash the water in her backyard on purpose or by accident?”), $F(1, 58) = 7.84, p = .001$, intention-Qb (e.g., “Did Karli get water on Sam on purpose or by accident?”), $F(1, 58) = 3.27, p = .045$, as well as intention-Qc (e.g., “Did Karli make Sam happy on

purpose or by accident?"), $F(1, 58) = 6.43, p = .003$. To follow up these significant interactions, independent sample t-tests were run comparing responses for each type of intention question (for both positive and negative outcome) across trait conditions.

In support of the second hypothesis, when comparing Mean-Trait and Nice-Trait conditions there was a significant difference in intention-Qa (i.e., whether children indicated that the main character produced their original action by accident or on purpose), when the outcome was positive, $t(22.15) = 3.39, p = .003$, with children more likely to say that 'mean' characters' initial actions were intentional, than they were to say that 'nice' characters' initial actions were intentional. However, there was no significant difference between intention-Qa answers when the outcome was negative, $t(38) = -0.74, p = .465$. In contrast with the hypothesis, when comparing Mean-Trait and Trait-Absent conditions there were no significant differences in intention-Qa for both positive, $t(27.15) = 2.04, p = 0.51$, and negative, $t(39) = -1.127, p = .266$, outcomes. When comparing Nice-Trait and Trait-Absent conditions on intention-Qa, there were no significant difference for both positive, $t(33.47) = -1.67, p = .099$, and negative, $t(39) = -0.38, p = .710$, outcomes. Therefore the hypothesis was only marginally supported.

When comparing the Mean-Trait condition and Nice-Trait condition on intention-Qb responses (i.e., whether children rated the main character as producing the unintended physical outcome by accident or on purpose), there were no significant differences for positive, $t(38) = -1.41, p = .165$, or negative, $t(38) = 1.04, p = .305$, outcomes. There were no significant differences between Mean-Trait and Trait-Absent conditions on intention-Qb when the outcome was positive, $t(39) = -1.23, p = .228$, nor when the outcome was negative, $t(39) = 1.30, p = .201$. Additionally, when comparing Nice-Trait

and Trait-Absent conditions, there were no significant difference in children's intention-Qb responses for either positive, $t(39) = 0.27, p = .792$, or negative outcomes, $t(39) = 0.24, p = .808$.

In line with the hypothesis, when comparing Mean-Trait and Nice-Trait conditions on intention-Qc (i.e., whether children rated the main character as producing the emotional outcome for the secondary character by accident or on purpose), there was a significant difference when the outcome was positive, $t(24.15) = -2.87, p = .009$. That is, children were more accurate in stating that the 'mean' character made the secondary character happy by accident. There was no significant difference between Mean-Trait and Nice-Trait conditions when the outcome was negative, $t(38) = 0.60, p = .551$. When comparing Mean-Trait and Trait-Absent conditions on intention-Qc, there was a significant difference when the outcome was positive, $t(27.10) = -2.38, p = .025$. However, there was no significant difference between Mean-Trait and Trait-Absent conditions on intention-Qc when the outcome was negative, $t(36.07) = 1.14, p = .262$. There were no significant differences between Nice-Trait and Trait-Absent intention-Qc responses for either positive, $t(39) = 0.62, p = .539$, or negative outcomes, $t(39) = 0.52, p = .605$. Therefore, the hypothesis was only partially supported. Overall, children correctly identified the character as bringing about the outcome accidentally 72% of the time. Means and standard deviations for intention questions can be found in Table 3.

Recall that the third set of hypotheses predicted that false belief understanding (first- and second-order) would be positively related to children's performance on intention accuracy (i.e., children who scored higher on false belief would be more accurate on the intention questions), as well as to moral judgment (i.e., children with

higher false belief scores would assign more positive moral judgments, as they recognize that the outcome was not intentional), and negatively related to punishment ratings (i.e., children with higher false belief scores would assign less punishment).

Trait conditions were investigated separately due to the significant effect of trait condition in the previous analyses. To address the hypotheses, partial correlations were calculated between false belief scores and each of the dependent variables, for each trait condition, with PPVT, age (in months), and working memory (Backward Digit Span Task) statistically controlled in the analyses. It should be noted that due to the small sample size of the conditions, the results of the partial correlations should be interpreted with caution. The small sample sizes (approximately 20 per condition) reduce the correlations' reliability, as each correlation was substantially under the recommended sample size of 50 (VanVoorhis & Morgan, 2007). Therefore, all results from the partial correlations should be considered provisional.

In terms of significant findings related to the hypotheses, in the Mean-Trait condition, there was a significant positive correlation between second-order false belief and moral judgments scores when the outcome was positive, $pr(15) = .568$, $p = .017$, as well as when the outcome was negative, $pr(15) = .494$, $p = .044$, meaning that children with higher second-order false belief scores judged 'mean' characters more leniently. In the Nice-Trait condition, there was a negative correlation between first-order false belief and punishment ratings for positive outcomes $pr(14) = -.578$, $p = .019$, demonstrating that children with higher false-belief scores gave lower punishment ratings. All other partial correlations were non-significant. Therefore, the third set of hypotheses was very minimally supported.

Additionally, Fisher's z-transformations for the correlation coefficients were also calculated to examine whether the partial correlations between the three conditions significantly differed from each other (Howell, 2011). There were no significant differences between the three conditions on any of the examined correlations.

Additional Analyses

After analyzing the data for the proposed hypotheses, two additional research questions arose. The first was whether the dependent intention variables were significantly related to children's moral judgment and punishment ratings, and whether these relations varied by Trait condition and Outcome. A Benjamini-Hochberg (B-H) correction was applied to the alpha level of the additional analyses in order to account for the family-wise error associated with running additional tests (78 additional tests were run), and the adjusted alpha level was 0.014.

For each trait condition, the individual partial correlations from the previous analyses were utilized. When examining participants in the Mean-Trait condition, children who correctly answered the second intention question (e.g., they said 'by accident' when asked, "Did Karli get water on Sam on purpose or by accident?") gave 'mean' characters more positive moral judgments, $pr(15) = .546, p = .027$, as well as lower punishment scores, $pr(15) = -.489, p = .047$, when the outcome was negative. Additionally, children who correctly identified the 'mean' character as unintentionally making the secondary character sad when the outcome was negative, (e.g., they said 'by accident' when asked, "Did Karli make Sam sad on purpose or by accident?") suggested less punishment, $pr(15) = -.482, p = .05$. However, these significant results did not hold after applying the B-H correction (alpha = 0.014). Neither the Nice-Trait nor the Trait-

Absent conditions had significant correlations between intention accuracy and children's moral judgment and punishment ratings.

The second question was whether children's intention, moral judgment and punishment scores varied by age. A MANOVA with the same dependent variables as described above (see p. 54) was utilized, but this time age (comparing 4-year-olds to 5-year-olds) was included as an additional independent variable. As before, there was a significant effect of Trait condition (using Hotelling's T^2) $T = .61$, $F(10, 100) = 3.08$, $p = .002$, Outcome, $T = .87$, $F(5, 51) = 8.90$, $p < .001$ and a Trait by Outcome interaction, $T = .53$, $F(10, 100) = 2.64$, $p = .007$. There was, however, a significant effect of age, $T = .32$, $F(5, 51) = 3.29$, $p = .012$. There were no significant Age by Outcome or Age by Trait interactions, as well as no significant higher order interactions (see Table 4). To further investigate the effect of age, ANOVAs were run for each dependent variable. There was a significant effect of age on 'intention-Qa', $F(1, 55) = 7.36$, $p = .009$, with 5-year-old children ($M = .398$) being *less* accurate than the 4-year-olds ($M = 1.06$). There was also a significant effect of 'intention-Qb', $F(1, 55) = 10.85$, $p = .002$, with 5-year-old children ($M = 2.73$) having higher accuracy than the 4-year-olds ($M = 2.02$). There were no other significant effects of age on the dependent variables (see Table 5).

Table 4

Mixed-Design MANOVA with Age and Trait Condition as Independent Variables

	Hotelling's T^2	F	df_1	df_2	p
Between Subjects					
Trait Condition	.617	3.08	10	100	.002
Age	.323	3.29	5	51	.012
Trait X Age	.116	0.58	10	100	.825
Within Subjects					
Outcome	.873	8.89	5	51	.000
Outcome X Trait	.528	2.64	10	100	.007
Outcome X Age	.156	1.60	5	51	.180
Outcome X Trait X Age	.193	0.97	10	100	.479

Note. $N=61$

Table 5

ANOVAs with Age as an Independent Variable

Source	df	SS	MS	F	p
Intention-Qa	1	12.48	12.48	7.36	.009
Intention-Qb	1	14.26	14.26	10.86	.002
Intention-Qc	1	5.43	5.43	2.77	.102
Moral Judgment	1	27.95	27.95	1.45	.234
Punishment	1	19.30	19.30	2.76	.103

Note: $N = 61$

Discussion

The main goal of the present study was to examine the ways in which 4- to 5-year-old children incorporate trait information into their intention ascriptions, moral judgments, and punishment assignments of others. To investigate whether trait information affected children's evaluations of others, judgments in two Trait-present conditions (Mean-Trait and Nice-Trait), as well as one Trait-Absent condition, were compared. Children heard a total of six stories in which the main character performed an intended neutral action, which resulted in an unforeseen outcome, which was either positive or negative (three stories per outcome). Since the stories in all three conditions were identical (barring the presence of trait information), it can be reasonably argued that significant differences in responses between the conditions were due to the influence of trait information. In addition to comparing children's performance across Trait conditions, another aim of the current study was to examine the relation between first- and second-order false belief understanding and children's intention accuracy. Adult performance on the main task and the hypotheses and the relevant results will be discussed, followed by a discussion of some additional analyses. Within each section, the Mean-Trait condition in relation to the Nice-Trait condition will be discussed first, followed by the Mean-Trait condition in relation to the Trait-Absent condition. Lastly, differences between the Nice-Trait condition and the Trait-Absent condition will be reviewed.

The Influence of Trait Information on Children's Moral Evaluations and Punishment Assignments

Adult performance on the moral judgment and punishment questions demonstrated that the main stories were being interpreted as expected (the purpose of collecting adult data was to test to make sure this was the case). Overall, adults' moral judgments of the story characters hovered around neutral for each condition.

Additionally, adults assigned little to no punishment for each story character for each condition (see Table 3). These findings were expected, as the main characters always produced the emotional outcome unintentionally, and the adults used that information to guide their judgments.

The first set of hypotheses, namely that children's moral evaluations would be influenced by the presence of character trait information, were generally supported by the results. These differences were predicted given that past research has demonstrated that young children can take trait information into consideration when making predictions about an actor's future behaviour (e.g., Heyman & Gelman, 1998, 1999), as well as in their endorsements of the use of physical aggression against a transgressor (Giles & Heyman, 2005). Children in the current study tended to give 'mean' characters more negative moral judgments than they did the 'nice' characters, even when the characters' actions lead to a favourable outcome (i.e., the secondary character was happy). More specifically, on a scale from -6 to 6, when the outcome was positive children tended to rate 'mean' characters fairly neutrally (mean = 0.60), whereas children rated 'nice' characters as being fairly good (mean = 4.95). A similar pattern was found when the outcome was negative, with children judging 'mean' characters as being quite mean

(mean = -4.30), but ‘nice’ characters as being a little good (mean = 1.25). Thus, children seem to be incorporating trait information into their moral evaluations of the main character.

It was also hypothesized that the outcome of the story would influence children’s moral judgments. This was predicted as previous research has found that young children focus heavily on outcome information when making moral judgments of others (e.g., Cushman et al., 2013; Richardson, Jampol & Woodward, 2011). Unsurprisingly, this hypothesis was supported, as children showed a consideration for the outcome of the characters’ actions. Children judged all characters more positively when the outcome was positive (i.e., the secondary character was happy) as compared to when the outcome was negative (i.e., the secondary character was sad).

Interestingly, children appeared to not only be considering outcome and trait information separately, but also simultaneously, with these two kinds of information interacting with one another to make negative judgments for ‘mean’ characters and positive evaluations for ‘nice’ characters more extreme (a 9.25 point difference, on a 12-point scale). Recall, that specific predictions were made in terms of how children would evaluate a character based on trait information, as well as the valence of the outcome. It was predicted that children would morally rate ‘mean’ characters more negatively than they would ‘nice’ characters, for both positive and negative outcomes. This hypothesis was supported and is consistent with earlier research, which demonstrated that children tend to rate characters described as ‘mean’ more negatively (Giles & Heyman, 2005), while inferring positive attributes from characters described as ‘nice’ (Heyman & Gelman, 1999).

A plausible explanation for this bias against ‘mean’ characters is that children are displaying the ‘pitchfork effect’, which is when an individual uses one negative characteristic to make negative global inferences about another (see Vaish, Grossman, & Woodward, 2008 for review). For example, Koenig and Jaswal (2011) found that 3- to 4-year-old children make negative global evaluations about a speaker’s intellectual competence after that individual demonstrates a lack of knowledge in a specific subject. Although research on this effect is limited within the child literature, this psychological phenomenon has been well documented in adults, with adults consistently using negative information to make global evaluations about others (see Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). Adults have also demonstrated that their perceptions of others are coloured by negative trait labels. For example, Foster, Yesseldyke and Reese (1975) had teachers watch a video of a child displaying ‘normal’ behaviours. One group of teachers was informed that the child had typical behaviour (control), whereas the other group was informed that the child was emotionally disturbed. After viewing the videotape of the same ‘normal’ child, teachers who were told the child was emotionally disturbed had more negative perceptions of the child’s behaviour. These biases were held even though the child displayed typical behaviours that conflicted with the negative label. Therefore, it is not unreasonable to believe that children are demonstrating similar biases towards the ‘mean’ characters that adults demonstrate when they are presented with negative trait labels.

This negativity bias may lead children to view the character’s original action as being negative (when in reality, the original action was neutral). For example, in one of the presented stories, the main character is using a hose to splash water all over her

backyard. Although this action is relatively benign, children in the Mean-Trait condition may have interpreted this action as 'bad' because the character is using the hose unsupervised. The simple presence of trait information may change the way in which children interpret the characters' original neutral actions. Therefore, when the characters produce a positive outcome, they are not given high moral ratings because their original action was perceived as 'bad'. Relatedly, children may rate the 'mean' characters negatively here because they are 'just bad kids' and should not get credit for 'randomly' doing something that ends well. Fittingly, when the outcome is negative, 'mean' characters are assigned fairly extreme negative moral judgments because their 'bad' original behaviour produced an unfavourable outcome. Additionally, in an attempt to justify why the action is perceived as 'bad', children may interpret the negative outcome as foreseeable or due to the characters' negligence.

Research has shown that the concepts of negligence and the foreseeability of an outcome are factors that may influence children's moral reasoning, with actions that are seen as negligent or foreseeable being deemed morally worse (e.g., Gall, 1985; Nobes et al., 2009). For example, children may believe that the 'mean' character should have been more careful while splashing the water or that getting an individual wet was foreseeable. The trait label of 'mean' may distort children's perception of the character's original action so that the action is no longer neutral but negligent, with foreseeable negative outcomes, and therefore morally worse. Future work could investigate this interpretation by comparing children's ratings of 'nice' and 'mean' characters when reporting foreseeable and unforeseeable outcomes.

Children are not only susceptible to the ‘pitchfork effect’, but also to a positivity bias often referred to as the ‘halo effect’ (e.g., Nabors & Keyes, 1995; Nowicki, 2006). Similar to the ‘pitchfork effect’, the ‘halo effect’ refers to individuals using one positive characteristic to make global inferences about others. More precisely, this effect describes a tendency to assign more positive attributes towards individuals who possess other desirable traits. When an individual possesses one positive characteristic, people are inclined to ascribe other positive qualities to that individual when there is limited information available (Nisbett & DeCamp Wilson, 1977). This effect has been demonstrated reliably in adults (e.g., Dion, Berscheid & Walster, 1972; Nisbett & DeCamp Wilson, 1977) as well as in children (e.g., Cain, Heyman, & Walker, 1997; Stipek & Daniels, 1990). For instance, Stipek and Daniels (1990) found that kindergarten-aged children expected children given the label of ‘nice’ to share more and be ‘nice’ in the future. These ‘nice’ children were also expected to perform well on academic tasks and generally described as being smart. It is possible that this positive global evaluation of the current study’s character as being ‘nice’ lead children to evaluate the character’s original actions more favourably. For example, children may have believed that a ‘nice’ character splashing the water hose in her own backyard was being ‘good’ because she was playing independently. Therefore, when the character produces an unintended negative outcome, children are more forgiving of this outcome, because the original action was interpreted positively. Additionally, when the primary character makes the secondary character happy, children assign such positive moral judgments because the ‘good’ behaviour produced an equally favourable outcome. Since the original action is perceived more positively, children do not explore the reasons why the

action may be considered negligent (as they do for the ‘mean’ character). Therefore, children are more lenient in their moral evaluations when the outcome is negative, because they perceive the original action as being ‘good’.

Together, the ‘pitchfork’ and ‘halo’ effects help to make sense of children’s moral judgments, and the interaction between outcome and trait information. The biases these labels create appear to change the way children perceive the character’s intentional action. These biases are further exacerbated by the presence of an outcome that is consistent with the character’s trait label, making children’s judgments more extreme.

The notion that children’s perceptions of someone’s original actions are influenced by the presence of a trait label is further supported by the pattern of findings when no trait information is present. In that condition (Trait-Absent), children’s moral judgment scores were close to neutral. Recall that it was also hypothesized that ‘mean’ characters would be rated more negatively in both positive and negative outcomes. Yet, in contrast to the original hypothesis, children’s moral judgment ratings between ‘mean’ and ‘trait-absent’ characters did not differ significantly when the outcome was positive. It was also predicted that ‘nice’ characters would be rated more positively than ‘trait-absent’ characters when the outcome was negative. This was originally hypothesized because it was expected that the label of ‘nice’ would act as a protective factor against the negative outcome that these characters produced. However, this prediction was not supported and the opposite was found, with ‘nice’ and ‘trait-absent’ characters’ moral judgments differing only when their actions produced a *positive* outcome.

It may be, that without the presence of trait information, children’s interpretation of the intentional action is closer to neutral. Since the original action is neutral, children

appear to be basing their judgments mostly on outcome. When the outcome is positive the character is not rated as being ‘a lot good’ because the character’s original actions were fairly benign. Relatedly, when the ‘trait-absent’ character produces a negative outcome, the character is not rated as being ‘a lot bad’. Thus, if the original action is seen as neither positive nor negative, it follows that children’s moral evaluations would hover around neutral.

In summary, it is possible that the differences in moral judgment ratings between the conditions are due to how trait information influences children’s perceptions of the characters’ original actions, as well as the valence of the outcome. If children perceive the intentional actions as either being ‘good’ or ‘bad’, their judgments of the characters’ actions will be influenced by this interpretation. Therefore, when trait and outcome ‘match’ (e.g., a ‘mean’ character produced a negative outcome) the perception of the intentional action as being either ‘good’ or ‘bad’ seems to ‘push’ children into more extreme moral judgments. Thus, it appears that children are considering both outcome and trait information when making moral evaluations of a character.

An alternative explanation for the differences in children’s moral judgments may be from children interpreting the moral judgment question (i.e., *is name* being good? *Is name* being bad?) as asking about the character’s trait label (i.e., good equals nice and bad equals mean) instead of as asking about the character’s actions. This is a reasonable possibility, as previous research has speculated that children use matching strategies when asked to use or predict an individual’s trait label (e.g., Barenboim, 1985; Bennett, 1985, 1986; Ruble & Dweck, 1995; Yuill 1992). If children were indeed employing this strategy, it would be reasonable to assume that ‘mean’ characters should be consistently

evaluated negatively, even when the character produced a positive outcome. However, this was not the case, as children assigned ‘mean’ characters fairly neutral moral judgments when the outcome was positive. Additionally, if children were interpreting the moral judgment question this way, ‘mean’ characters should have more negative moral evaluations when compared to ‘trait-absent’ characters, when the characters produced a positive outcome (as children on the Trait-Absent condition did not have a trait label to ‘match’ with the moral judgment question). Yet, children’s moral judgment ratings between ‘mean’ and ‘trait-absent’ characters did not differ significantly when the outcome was positive. This pattern provides support for the claim that children are using trait labels in a more sophisticated manner than simply matching ‘mean’ and ‘nice’ to ‘bad’ and ‘good’ for the moral judgment question. The notion that children are doing more than label matching is further supported by how children assigned punishment.

It was originally hypothesized that punishment assignment would be influenced by the presence of trait information (i.e., hypotheses set one). Similar to moral judgments, it was predicted that children would assign greater punishment to ‘mean’ characters, with significantly less punishment for both ‘nice’ and ‘trait-absent’ characters. Moral judgment scores and punishment scores were expected to be consistent with one another (for each trait by outcome combination), which would be in line with previous research (Andrews, 2015; Andrews et al., 2015; Nobes, et al., 2016). In contrast to the hypothesis, punishment scores did not differ significantly between Mean-Trait and Nice-Trait conditions when the outcome was positive; with children assigning both characters relatively little punishment (0.95/6 and 0.30/6, respectively). This is not unreasonable, because it would not make sense to punish someone for making another

individual happy. So, when the outcome is positive, children do not consider trait information. However, in support of the original hypothesis, a difference in punishment scores was found between Mean-Trait and Nice-Trait conditions when the outcome was negative. That is, children assigned greater amounts of punishment to ‘mean’ characters than to ‘nice’ characters when both produced a negative outcome. Thus, it appears, that when the outcome is negative, children do consider other information, in this case, whether the character was ‘mean’ or ‘nice’.

So, once again, there appears to be evidence for both the ‘pitchfork effect’ and the ‘halo effect’. The way trait information influences children’s perception of the characters’ intentional action (e.g., splashing water) may account for why there is a significant difference between how children assigned punishment to ‘mean’ and ‘nice’ characters. As discussed above, children may perceive the intentional action of a ‘mean’ character as being ‘bad’, therefore, when the character produces a negative outcome that character is assigned high punishment. On the other hand, the ‘nice’ character’s intentional action is perceived as ‘good’; therefore, when that character produces a negative outcome, children assign very little, if any punishment. However, children are not simply judging ‘mean’ characters as deserving ‘a lot’ of punishment and ‘nice’ characters as deserving of none. This suggests that although children are influenced by trait information, it does not take precedence over outcome information.

Although these hypotheses were only partially supported, this pattern of findings is consistent with previous work. For example, Giles and Heyman (2005) demonstrated that 3- to 5-year-old children exhibit higher rates of condoning physical aggression towards characters who produced a negative outcome who were described as ‘mean’

when compared to characters who were described as ‘nice’. Although condoning physical aggression is not the same as stating the amount of ‘trouble’ a character should be in, both touch upon children’s understanding that some negative consequences are warranted for the ‘mean’ character who committed some sort of transgression.

Therefore, the current finding of children assigning greater punishment to ‘mean’ characters when the outcome is negative, is consistent with previous findings. However, Giles and Heyman (2005) did not examine how children would react to ‘mean’ characters when the outcome was positive. In the current study, it appears that perhaps children were considering outcome information first (positive vs. negative), and then if it were the kind of outcome that may warrant punishment (i.e., negative), they *then* turned their attention to the valence of the actor’s personality trait. If this is the case, it suggests children prioritized outcome over trait when assigning punishment.

Recall that it was also hypothesized that children would assign greater amounts of punishment to ‘mean’ characters when compared to ‘trait-absent’ characters in both positive and negative outcomes. Additionally, it was hypothesized that children would assign less punishment to ‘nice’ characters when compared to ‘trait-absent’ characters when the outcome was negative. These hypotheses were not supported. Although children’s punishment scores differed by outcome (negative outcome produced higher punishment scores), children did not assign more punishment to ‘mean’ characters when compared to ‘trait-absent’ characters, nor more punishment to ‘trait-absent’ characters when compared to ‘nice’ characters. A possible explanation for the lack of significant differences between the conditions is that the ‘trait-absent’ characters are not ‘protected’ by the ‘halo effect’, nor are they condemned by the ‘pitchfork effect’. When the outcome

is positive, all characters received punishment ratings that hovered around neutral. This makes intuitive sense; again, there is no reason to punish a character for producing a positive outcome. However, when the outcome is negative, children in the Trait-Absent condition could only consider outcome, as they were not provided with trait information. This is not inconsistent with the interpretation above, as it could be argued that children consider outcome first, and if it is positive, end there. However, if it is negative, they would look for additional details to consider, and in the case of the ‘trait-absent’ character, there is no further information (positive or negative) to influence their judgment. This generated punishment scores that were also relatively neutral. Given that the Trait-Absent punishment scores fall between both the Mean-Trait and Nice-Trait scores, as well as the small sample size of the current study, it is not surprising that significant differences were not found. A larger sample may be able to detect more subtle differences in the punishment scores across the conditions.

It is clear then that children’s moral judgments as well as their punishment ascriptions appear to be somewhat influenced by information about the actors’ personality traits (at least at the broad of level of ‘nice’ and ‘mean’). A reasonable explanation is that the presence of trait information affects the way children perceive the character’s initial action. This, in turn, influences the way children judge the character after they produce a favourable or unfavourable outcome. Nonetheless, to make mature moral judgments children must consider more than just the outcome; they must consider the intention of the actors as well. Therefore, the influence of trait information on intention accuracy will be discussed in the following section.

The Influence of Trait Information on Children's Intention Accuracy

Before discussing the results of trait information on children's intention accuracy, it should be noted that the intention-Qa question appeared to be interpreted differently than expected. The original purpose of this intention question was to determine whether children would accurately identify the characters' initial action (e.g., using the water hose to splash water) as being done purposefully, in relation to the intended outcome (i.e., to splash water in one's own backyard). However, adult performance on this task was below ceiling (see Table 3), in contrast to their responses for the two other intention questions (which were either at, or nearly at, ceiling). Additionally, 5-year-old children performed *worse* on this intention question than 4-year-old children (see Table 5). Together, these findings suggest that this question did not work the way it was expected. Therefore, it is difficult to interpret the results from the intention-Qa question in any meaningful way and it will be not considered further.

The second set of hypotheses predicted that children's intention accuracy would be influenced by trait information, such that when character trait information was congruent with outcome ('nice' character with a 'positive' outcome, or a 'mean' character with a 'negative' outcome), children would deem that action as intentional. More specifically, children would be *more* accurate at identifying the character's lack of intention when a 'mean' character produced a positive outcome, and *less* accurate when a 'nice' character produced a positive outcome, deeming it as intentional. This was predicted because previous research has demonstrated that children expect 'nice' characters to have more pro-social motives (i.e., intentions) and to foresee positive outcomes, but not negative ones (Heyman & Gelman, 1998). Since young children have

demonstrated an ability to take intention information into account when making moral judgments (e.g., Baird & Astington, 2004; Cushman et al., 2013; Helwig et al., 1995, etc.), it was theorized that previous work demonstrating children's differing judgments of 'mean' and 'nice' characters (e.g., Heyman & Gelman, 1998, 1999) was due to the influence of trait information on children's intention judgments. Specifically, it was predicted that children would rate a 'mean' character's actions as being intentional when the outcome was negative, but accidental when the outcome was positive, and vice-versa for 'nice' characters. It should be noted that this intention accuracy difference would not emerge because a trait label can aid in 'improving' a child's consideration of the character's mental states, but because the trait /outcome combination would bias their interpretation of the characters' intentions. For example, children may think that 'nice' characters do 'nice' things on *purpose* because they are 'good', whereas 'mean' characters do 'nice' things *accidentally* because 'mean' characters do not do 'nice' things. This pattern of responses would likely occur before children truly considered or understand the character's mental state. This would further help to explain why children judge characters differently depending on their trait label. However, this prediction was only partially supported by the results.

There were no differences in responses between trait conditions on intention-Qb (e.g., "Did Karli get Sam wet on purpose or by accident?"), with the majority of children accurately identifying the action as accidental. On intention-Qc (e.g., "Did Karli make Sam sad [happy] on purpose or by accident?") when the outcome was positive, children were *more* accurate in judging the 'mean' characters as producing this outcome accidentally in comparison to both the 'nice' and 'trait-absent' characters. In other

words, in support of the hypothesis, children were more likely to state that the ‘mean’ character unintentionally made the secondary character happy. It is possible that a negative bias (as discussed above) influenced children to state that the character produced the positive outcome accidentally, as they did not want the ‘mean’ character to be rewarded for this outcome. This is a plausible interpretation, as previous research on children’s intention understanding has demonstrated that children are less inclined to state a person intentionally created a positive outcome when that person demonstrates a negative trait (e.g., Leslie, Knobe, & Cohen, 2006; Pellizzoni, Siegal, & Surian, 2009). For example, Leslie et al. (2006) had 3- to 5- year old children listen to one of two stories: a ‘good’ condition in which the character *unintentionally* made another person happy, or a ‘bad’ condition in which the main character *unintentionally* made another person upset. In both scenarios, the emotional outcome of the secondary character was an unintended outcome produced by an intended action. For both conditions, the main story character was described as ‘not caring’ about the secondary character’s feelings. The authors found that children were more likely to state that the character intentionally produced the negative outcome, compared to the positive outcome. Nevertheless, children in the current study were generally accurate in identifying the character as accidentally producing the outcome.

Overall, it appears that children’s intention accuracy is not strongly influenced by trait information. These findings seem inconsistent with work done by Heyman and Gelman (1998), who found that children expected characters with positive intentions to be ‘nice’. However, there are several methodological differences between the current study and Heyman and Gelman’s work. Perhaps the most obvious methodological

difference was that in their study, children were asked to infer a trait label from the characters' motives (which were presented as anti-social, pro-social, or neutral), whereas, in the current study, children were given the trait-label and asked about the characters' intention. Children's trait assignment may be influenced by intention information; however, this relation may not work in reverse, with trait information influencing intention understanding. Additionally, Heyman and Gelman's (1998) study involved intentions that were clearly negative (e.g., he finished the puzzle *name* had been working on to make her upset) or positive (e.g., she gave *name* some candy that she got while visiting another country to make *name* happy). Conversely, in the current study, the intention was always neutral and the outcome accidental. It is possible that children in the Heyman and Gelman study were simply label matching (i.e., happy with nice, and sad with mean), whereas in the current study, children were not able to easily match trait information with the intention questions presented, since 'by accident' or 'on purpose' does not clearly map onto 'nice' or 'mean' (though, in combination with a positive or negative outcome, they can). Overall, it appears that trait information does not strongly influence intention accuracy. This is a promising finding, as it suggests that even young children are not judging a character's intention based primarily on the character's general trait.

The Relations Among False Belief Understanding, Intention Accuracy, and Moral Evaluations

The third set of hypotheses predicted that false belief understanding would be related to children's ability to consider intention (demonstrated by higher accuracy in intention identification and less negative moral judgments and punishment ratings). In

order to consider intentions and to use this information accordingly, children must have an understanding of others' mental states. Previous research has established a relation between false belief understanding and children's moral reasoning (e.g., Baird & Astington, 2004, Smetana et al., 2012; Killen et al., 2011, etc.). However, this hypothesis was only partially supported. Significant positive correlations were found between second-order false belief and moral judgments scores, but only for the Mean-Trait condition. Additionally, intention accuracy was not related to either first- or second-order false belief understanding in any of the conditions.

It was expected that children with better false belief understanding would provide more neutral moral judgments and punishment assignment. This was predicted given that having a more sophisticated understanding of mental states should improve intention accuracy, which then in turn, should enable children to make more mature moral judgments. However, there was no meaningful relation between first-order false belief scores and moral judgment or punishment scores. These results are inconsistent with previous research, which have reported a relation between false belief understanding and children's moral evaluations. For example, Baird and Astington (2004) found that first-order false belief was related to 4- and 5-year-olds' moral judgments and punishment scores. However, Baird and Astington (2004) used story characters that exhibited both positive and negative intentions, whereas, the current story characters had neutral intentions. It may be that having neutral intentions made the relation between false belief and moral evaluations harder to detect. Additionally, since each partial correlation was run by condition, each correlation had approximately 20 child participants. This small

sample size may not have had enough power to detect this relation. Future work may investigate this issue with a larger sample size.

Additionally, the lack of relation between false belief and children's moral evaluations may also be due to the type of false belief tasks chosen. Similar to the current study, Fu et al., (2014) did not find a relation between first-order false belief and children's moral reasoning when a standard version of a first-order false belief task (similar to those used in the present study) was employed. However, the authors found a relation between the two variables when a modified false belief task was utilized. This modified false belief task was embedded within the task that evaluated children's moral reasoning, and thus required false belief reasoning in a morally-relevant context. That is, children were asked about the actor's belief (i.e., the false belief task) and were then asked to morally evaluate the actor. These answers were then used in the assessment of children's ability to consider intention in their moral reasoning. The authors found that their modified 'morally relevant' false belief task significantly correlated to children's moral evaluations of the actor's intentions. It is possible that this modified false belief task is better able to capture the mental state information children are using when making judgments of others; as the mental state information used in the false belief task is directly related to the action children are then asked to morally evaluate. Therefore, future research investigating the relation between false belief understanding and children's moral reasoning should consider the inclusion of a 'morally relevant' false belief task similar to the one employed by Fu et al., (2014).

In line with current research, a relation between second-order false belief and moral judgment scores were found. However, this relation was only present in the Mean-

Trait condition. That is, children with higher second-order false belief scores gave 'mean' characters more positive moral judgments when the character produced either a positive or negative outcome. It is possible that children may need to have more sophisticated Theory of Mind (ToM) to not be as heavily influenced by the negative trait label of 'mean'. Children with a more mature ToM may have a deeper understanding that the character had neutral intentions and therefore judge the character more positively, whereas, in the Nice-Trait and Trait-Absent conditions, children do not have such a negative bias towards the story character. Children in the Nice-Trait condition already have a positive bias towards the character, so when the character produces either a positive or negative outcome children are already more inclined to give that character a positive judgment and do not need to have a strong understanding of the character's mental state. Similarly, children in the Trait-Absent condition may view the character fairly neutrally, so when the character produces a positive outcome the child rates them somewhat positively, and when the character produces a negative outcome their judgments of the character are lower, and hover around neutral. As such, the relation between false-belief and moral judgments may not have been detected in the Nice-Trait and Trait-Absent conditions because they do not require a deeper understanding of the character's mental states in order to produce either neutral or fairly positive judgments.

As previously noted, the results of the partial correlations cannot be interpreted with confidence. In addition to sample size concerns, children's overall poor performance on the second-order false belief task should be taken into account. Children's poor performance on the second-order false belief task is not surprising, as children usually acquire second-order false belief between 5 and 6 years old (e.g.,

Sullivan, Zaticski & Tager-Flushberg, 1994; Wellman et al., 2001). The low number of children who successfully completed the second-order false belief tasks in each condition may not have allowed for enough variability to detect a relation between false belief and moral evaluation scores within the other two conditions. Furthermore, the lack of significant findings when examining whether the partial correlations were significantly different when compared across conditions suggests that the significant positive correlation between second-order false belief and children's moral judgements in the Mean-Trait condition may not be meaningful; as the Nice-Trait and Trait-Absent conditions found no relation between these variables.

Relation Among Intention Accuracy, Moral Judgment, and Punishment

In addition to the planned analyses, a number of partial correlations among the dependent variables were examined. The purposes of these exploratory analyses were to determine whether children's intention accuracy was related to their moral judgments or punishment assignment. It was expected that intention identification would be related to both moral evaluations and punishment. This was expected given that the more accurately a child is able to identify a character's intention, the better that child is able to use that information when making moral judgments. However, after adjusting the p-value to correct family-wise error, there were no significant correlations between intention accuracy and moral judgment nor intention accuracy and punishment scores. Since the majority of children were able to correctly identify the characters' intentions as accidental, and all intentions were indeed accidental, there may not have been enough variability between children's answer to detect a relation. Additionally, other factors, such as outcome and trait information, may have had a stronger influence on children's

moral judgments and punishment assignments. Therefore, these variables may be covering the possible relation between intentions, moral judgment, and punishment scores.

Nevertheless, given that the majority of moral judgments were neutral or positive (excluding a ‘mean’ character who produced a negative outcome), children do appear to be taking the lack of intention into consideration when making judgments. If children were not taking this information into consideration, their judgments of the ‘trait-absent’ characters should be more extreme, with notably negative moral judgments with negative outcomes, and fairly positive moral judgments with positive outcomes. Given that children’s moral judgments trended more towards neutral, it is possible that these children were considering more than the outcome of the action. However, due to the methodological constraints of this study, it is not clear whether children were using intention information in their moral evaluations. Future work should investigate how varying intention information (i.e., positive or negative), as well as varying trait information (i.e., mean or nice), would influence the relation between intention accuracy and children’s moral evaluations.

Influence of Age on Intention Identification, Moral Judgment, and Punishment

After the planned analyses, a MANOVA was run in order to examine the influence of participant age (in years) on intention accuracy, moral judgments and punishment assignment. The only significant effect of age was on intention-Qb (e.g., “Did Karli get water on Sam on purpose or by accident?”), with 5-year-olds having higher accuracy than 4-year olds. Given the small sample size, the lack of an overall age effect is not surprising. It would be advantageous for future research to recruit a larger

sample size, covering a broader age range, to re-examine the possible influence age has on children's use of trait information, as well as their intention understanding, moral judgments and punishment assignment.

Limitations and Future Directions

Though the current study expands our understanding of children's use of trait information in their intention ascription, moral judgment and punishment assignment, as well as the relation between false belief understanding, intention accuracy, and moral evaluations, there are some limitations of the current study that should be addressed. First, a larger sample of child participants would have been advantageous. Within the original MANOVA, the influence of trait, with regards to punishment assignment, was only found when comparing a 'mean' character to a 'nice' character when they both produced a negative outcome. However, 'trait-absent' characters appeared to have judgment scores that were between both the Nice-Trait and Mean-Trait conditions. It is possible that punishment scores for 'trait-absent' characters are significantly different, but due to the small sample size, these differences went undetected.

Similarly, the small sample may have affected the results of the partial correlations, which were run by condition, with approximately 20 children per condition. Thus, it is possible that significant relations between dependent variables were missed due to the test's lack of power. This may have played a role in the failure to replicate previous work reporting a relation between false belief understanding and intention accuracy. Therefore, it is suggested that future research have at least 30 participants per condition (Hogg & Tanis, 1977). It is worth noting that a larger sample size was planned, but given recruitment challenges, was not possible.

In addition to the sample size, there were other limitations to note. One such limitation was the design of intention-Qa, as adults' responses indicated that the question was not clear. Thus, I cannot be confident that children understood that the character's original action was done purposefully. This information would have been advantageous to have for interpreting how children understood each story scenario. However, adults' low performance on this question demonstrated that participants were not interpreting the question as intended and it was therefore unusable. It is possible that after hearing the story and the outcome, adult participants were expecting the intention question to be about the outcome, and not the intentional action, and so some participants interpreted it that way.

A possible way to address this in future research is to include a question about the intentional action *before* the ending of the story and even possibly directly after the character performs the intentional action. For example;

'Karli is playing with a hose in her backyard. This is Sam. Sam is playing in her backyard. Karli does not see Sam. Karli is using the hose to splash water all over her backyard. "*Did Karli splash the water in her backyard on purpose or by accident?*" [then present outcome information] Look, some of the water went over the fence and splashed Sam. Sam is happy, she was hot and the water cooled her off.'

Introducing the intentional action question before participants are informed of the accidental outcomes may aid in reducing misinterpretations of the intention question, as participants cannot use outcome information to influence their response.

Another design limitation was the decision to have trait information vary between participants. Although chosen to allow for the inclusion of trait-absent stories, as well as to avoid multiple sessions and an overabundance of stories for the young participants, having the trait label vary within-participants would have made it possible to examine

how trait information influences judgments in each individual child. It is clear from the standard deviations that children varied widely in their evaluations of the characters. This is not surprising, given that children can interpret certain actions as being more 'bad' or 'good' depending on their personal experiences and standards. For example, a child may interpret someone playing outside by himself or herself as being 'a little bad' because the child has been told that they should not leave the house unsupervised. In contrast, another child may interpret a character playing outside as being 'a little good' because they are playing independently. Additionally, children may have individual thresholds for what they consider 'good' or 'bad', and what types of outcomes or actions are deserving of punishment. For example, some children may be reluctant to state that a character was being bad or should get in trouble, even when that character is engaging in an activity that is clearly negative (e.g., taking another child's toy without asking).

By employing a within-subjects design where difference scores between the 'nice' characters and the 'mean' trait characters are calculated, these individual differences would not be a concern. For example, a child who is more inclined to rate characters positively may give a 'nice' character an overall rating of 6/6, and a mean character a 3/6, which would mean that the child rated both of these characters fairly positively. Whereas, another child may be more inclined to rate a character more negatively, giving a 'nice' character a 3/6 and a mean character a 0/6. A within-subjects design would show that each child rated a 'nice' character 3 'points' higher than a 'mean' character. However, a between-subjects design would see the 'nice' character as being rated a 4.5 and a mean character as being rated a 1.5, which is still a 3 'point' difference, but due to the large standard deviations, may no longer be significant. Additionally, a

within-subjects design would increase statistical power, as each participant would be measured within each condition. Therefore, future research should examine the influence of trait information using a within-subjects design to help account for this individual variability.

Another interesting addition to the current research would be to include a wider range of intentions motivating the characters' behaviour, crossed with different outcomes and different character traits. Such research could ask, for example, would children still be more likely state that a 'mean' character accidentally produced a positive outcome if that 'mean' character intended that outcome? The addition of differing intentions and trait information would also be informative about children's moral judgments and punishments. Would children still rate a 'nice' character positively if that 'nice' character produced a positive outcome while trying to create a social harm? This inclusion of positive and negative intention would not only aid in understanding the role trait information plays in children's moral reasoning but also the information children rely on, such as intention information, when making these evaluations.

Future research should also consider exploring the possible interaction effects between both participants' and story characters' gender on children's moral evaluations. It is possible that children may interpret a story character's actions more positively if that action conforms to gender stereotypes. For example, children may rate a rambunctious male story character more positively than a female story character that exhibits the same behaviour, as it is generally accepted that boys are more 'hyper' than girls. Additionally, children may also judge characters that share their gender identity more leniently, as they may relate to that particular character more than a character of the opposite gender. These

biases may in turn influence children's moral judgments, as well as their punishment assignment for that character.

Conclusion

Children evaluate morally relevant situations in order to make decisions about the social behaviours of others. Yet, the traditional moral paradigms used to investigate children's moral reasoning are often void of the contextual cues that are present in children's social spaces. Most research with young children involves story characters that have no personality information. This stands in contrast with children's realities, in which the judgments children make are usually about individuals that they know across time and contexts, and to whom they have likely attributed some enduring personality traits. By providing children with trait information, the current study employs stories that more closely mirror the information children have access to when making moral evaluations in their everyday social lives.

The current study is one of the first studies to demonstrate that children's judgments are influenced by their knowledge of the actor more broadly. More specifically, it appears that children are capable of using trait information when making both moral judgments and assigning punishment. Interestingly, children appear to rely on trait information differently, depending on the evaluation the child is making. It appears that when children are asked to morally evaluate a character, the outcome as well as the character's trait label, are both considered relatively equally. However, when children are asked to assign punishment to the character, children appear to first consider the outcome and then consider the character's trait. If the outcome is positive, children do not consider the character's trait, and assign little to no punishment for all actors.

However, if the outcome is negative, children then consider the character's trait, giving more punishment to characters with a negative trait (i.e., mean) than to those with a positive trait (i.e., nice). This information contributes to a more complete understanding of not only children's moral reasoning, but also their ability to use trait information in a meaningful way. Further, it may shed light on our understanding of children's social interactions with their peers.

Previous research has focused heavily on children's use of outcome and intention information with regards to their developing moral reasoning. The current study demonstrates that children are not merely relying on outcome information, even when they appear to not be incorporating an actor's intention into their evaluations. Children are able to consider trait information (even before intention incorporation) that goes beyond a simple 'matching' strategy. As such, young children's moral evaluations may be more complex than previously thought. In conclusion, the present study was able to demonstrate that children are able to consider trait information in their moral evaluations, providing valuable information on children's developing moral reasoning.

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Appendix A: Daycare Coordinator Consent Form



**Children's Representational
Development Lab**
www.carleton.ca/crdl

Winter/Spring 2017

Dear Program Coordinator,

As part of a current project on children's cognitive development, we are talking to children to learn about their developing ability to use information about whether someone did something on purpose, or by accident, when making moral judgments of story characters. The study has been approved by the Carleton University Research Ethics Board-B (approval number #106238; valid until 01/31/2018). In this letter, we will describe the project and request your permission for your centre's participation.

Should you wish to participate in the current project, we will provide you with individual informed consent letters to distribute to the parent(s) or guardian(s) of the four- and five-year-old children in your centre. Once consent letters have been returned to you from parents, we will arrange a convenient time for you to have our researchers at your center to conduct the study. The researchers are university students with current police record checks and copies of these documents will be provided to the daycare director before we commence any interviews with the children. The researchers will also be sensitive to the children at all times.

Children will hear a number of stories involving characters that are engaging in a neutral action (e.g., splashing water in the yard). The main character will be introduced by name and some information about the characters' personality or about the characters' physical appearance is provided. The characters' actions all result in something happening to the secondary character (e.g., someone gets wet), or the secondary character's belongings (e.g., glitter gets on artwork). This is then described as having a positive or negative emotional effect on the secondary character (e.g., the character is happy because she was hot and the water cooled her off). Children will then be asked about the story characters (e.g., whether they did something good or bad, or whether the character get in trouble for what they did). We are interested in whether children consider a character's general personality when trying to understand that characters' intentions. We will also play games that measure related skills such as memory and general language ability. Children usually enjoy these kinds of activities and will be given stickers as thanks (even if they stop playing part-way through). We will also provide enough stickers for all children in the participating classrooms to the daycare, so that all children get some, even if they're not participating in our study.

We will meet with each child twice, for approximately 20 minutes each time. Participation in this experiment is completely *voluntary*. Children will be asked if they want to participate, and if they don't, they will not be pressured into participating. Children can stop playing at any time during the session and will still receive their stickers.

Appendix A: Daycare Coordinator Consent Form Continued

The information collected in this study is confidential and will be coded such that a child's name is not associated with their responses. The information provided will be used for research purposes only, and will only be accessible to the researchers directly involved in the project. The consent form will be kept separate from the data in a locked cabinet and will be destroyed after 2 years. The datafile and hard-copies of data, though they do not include identifying information, are stored on a password protected computer (the datafile) and in a locked room (the hard copies). As soon as we have finished talking with all of the children that will be participating in the study, we will remove the file linking the children's names to their identification numbers used in the datafile. In other words, it will no longer be possible to identify an individual child's responses (the data will be anonymized). As a result, participants will no longer be able to withdraw their data after that time. We estimate that this will occur in July 2017. Analyses presented in presentations or written publications will only contain group data, with no identification of individuals who participated in this study.

The research supervisor of this project is Dr. Deepthi Kamawar and she may be reached at 613-520-2600, ext. 7021 or deepthi.kamawar@carleton.ca. The primary researcher involved in this project is Sarah Gardiner, M.A. candidate, and she can be reached by email at Sarahgardiner@cmail.carleton.ca. An additional undergraduate student Shauna-Marie Sobers will also be assisting (shaunamariesobers@cmail.carleton.ca). This study is funded in part by the Natural Sciences and Engineering Research Council of Canada.

This study has been approved by Carleton University's Research Ethics Board-B (ethics protocol number: ##106238) and has been deemed minimal risk. Some participants may find a particular task taxing, which could cause them to become upset. In those rare cases, children are dealt with in a very sensitive manner (told that we're all done, thanked for doing a great job) and taken back to their teachers. We have used similar tasks with approximately 2000 children in the same age ranges over the past 13 years and found this reaction to be extremely rare. If you have any ethical concerns about this study, please contact: Dr. Andy Adler, Chair, Carleton University Research Ethics Board-B (adler@sce.carleton.ca or 613-520-2600 ext. 4085). You may also contact the Carleton University Research Compliance Office at ethics@carleton.ca.

Your consent is required for your centre's participation in this project. Kindly sign the attached consent form indicating whether we may provide you with individual consent forms for parents or guardians of children within this age range in your centre. If you would like a summary of the research results once the study is completed, please contact Sarah Gardiner. However, please note that individual feedback regarding the children cannot be provided.

Thank you for your consideration.

Sincerely,

Deepthi Kamawar, Ph.D.

Sarah Gardiner, M.A. candidate

Appendix A: Daycare Coordinator Consent Form Continued**Carleton University Study – Children’s Use of Trait Information in Their Intention
Ascription and Moral Judgments of Others**

*The information collected for this project is confidential and protected under the Provincial
Freedom of Information and Protection of Privacy Act.*

I have read the attached description of the study of *Children’s Use of Trait Information in
their Intention Ascriptions and Moral Judgments of Others* and I understand the conditions
of my child care centre’s participation.

I understand that the study will require two 20-minute testing sessions, with children of
appropriate ages, whose parents/guardians have given written consent for their children’s
participation in the research project.

Name of Centre: _____

Address: _____

Signature: _____ Date: _____

Name & Title: _____

Appendix B: Daycare Parental Consent Form



**Children's Representational
Development Lab**
www.carleton.ca/crdl

Winter/Spring 2017

Dear parent(s) or guardian(s),

As part of a current project on children's cognitive development, we are talking to children to learn about their developing ability to use information about whether someone did something on purpose, or by accident, when making moral judgments of story characters. The study has been approved by the Carleton University Research Ethics Board-B (approval number #106238; valid until 01/31/2018). In this letter, we will describe the project and request your permission for your child to participate. The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your child's involvement.

Children will hear a number of stories involving characters that are engaging in a neutral action (e.g., splashing water in the yard). The main character will be introduced by name and some information about the characters' personality or about the characters' physical appearance is provided. The characters' actions all result in something happening to the secondary character (e.g., someone gets wet), or the secondary character's belongings (e.g., glitter gets on artwork). This is then described as having a positive or negative emotional effect on the secondary character (e.g., the character is happy because she was hot and the water cooled her off). Children will then be asked about the story characters (e.g., whether they did something good or bad, or whether the character get in trouble for what they did). We are interested in whether children consider a character's general personality when trying to understand that characters' intentions. We will also play games that measure related skills such as memory and general language ability. Children usually enjoy these kinds of activities and will be given stickers as thanks (even if they stop playing part-way through). We will also provide enough stickers for all children in the participating classrooms to the daycare, so that all children get some, even if they're not participating in our study.

We will meet with each child twice, for approximately 20 minutes each time. Participation in this experiment is completely *voluntary*. Children will be asked if they want to participate, and if they don't, they will not be pressured into participating. The researchers all have current police record checks, and copies of these documents will be provided to the child care centre coordinator before we commence any interviews with your child. The researchers will also be sensitive to the children at all times. Children can stop playing at any time during the session and will still receive their stickers.

The information collected in this study is confidential and will be coded such that a child's name is not associated with their responses. The information provided will be used for research purposes only, and will only be accessible to the researchers directly involved in the project. The consent form will be kept separate from the data in a locked cabinet and will be destroyed after 2 years. The datafile and hard-copies of data, though they do not include identifying information, are stored on a password protected computer (the datafile) and in a locked room (the hard copies). As soon as we have finished talking with all of the

Appendix B: Daycare Parental Consent Form Continued

children that will be participating in the study, we will remove the file linking the children's names to their identification numbers used in the datafile. In other words, it will no longer be possible to identify an individual child's responses (the data will be anonymized). As a result, participants will no longer be able to withdraw their data after that time. We estimate that this will occur in July 2017. Analyses presented in presentations or written publications will only contain group data, with no identification of individuals who participated in this study.

The research supervisor of this project is Dr. Deepthi Kamawar and she may be reached at 613-520-2600, ext. 7021 or deepthi.kamawar@carleton.ca. The primary researcher involved in this project is Sarah Gardiner M.A. candidate, and she can be reached by email at Sarahgardiner@cmail.carleton.ca. An additional undergraduate student Shauna-Marie Sobers will also be assisting (shaunamariesobers@cmail.carleton.ca). This study is funded by the Natural Sciences and Engineering Research Council of Canada.

This study has been approved by Carleton University's Research Ethics Board-B (ethics protocol number: #106238) and has been deemed minimal risk. Some participants may find a particular task taxing, which could cause them to become upset. In those rare cases, children are dealt with in a very sensitive manner (told that we're all done, thanked for doing a great job) and taken back to their teachers. We have used similar tasks with approximately 2000 children in the same age ranges over the past 13 years and found this reaction to be extremely rare. If you have any ethical concerns about this study, please contact: Dr. Andy Adler, Chair, Carleton University Research Ethics Board-B (adler@sce.carleton.ca or 613-520-2600 ext. 4085). You may also contact the Carleton University Research Compliance Office at ethics@carleton.ca.

Your consent is required for your child's participation in this project. Kindly sign the attached consent form indicating whether your child may participate in this research and return it to your child's daycare. If you would like a summary of the research results once the study is completed, please contact Sarah Gardiner. However, please note that individual feedback regarding the children cannot be provided.

Thank you for your consideration.

Sincerely,

Deepthi Kamawar, PhD

Sarah Gardiner M.A. candidate

Appendix B: Daycare Parental Consent Form Continued**Carleton University Study – Children’s Use of Trait Information in Their Intention Ascription and Moral Judgments of Others.**

The information collected for this project is confidential and protected under the Provincial Freedom of Information and Protection of Privacy Act.

I have read and understood the request for my child to participate in the study of *Children’s use of Trait information in their Intention Ascriptions and Moral Judgments of Others* I have discussed it with my child and ...

- I consent to my child’s participation in the current study **[please fill out the next page]**
- I do not consent to my child’s participation in the current study

Child’s Name (please print): _____

Parent’s/Guardian’s Name (please print): _____

Signature: _____ Date: _____

Appendix B: Daycare Parental Consent Form Continued**Participant Information**

If you have consented to your child participating on the previous page, please provide us with the following information about your child. If you have not provided consent, please do not fill out this page.

Please note: your child's name and birth date will be kept separate from their data and consent form, and only researchers directly involved in this project will have access to this information.

Child's Date of Birth: year _____ month _____ day _____

Please indicate the language(s) spoken at home and then please circle the ones that your child is fluent in: _____

Appendix C: Debrief Letter for Both Daycare and School Parents



**Children's Representational
Development Lab**
www.carleton.ca/crdl

Winter/Spring 2017

Dear Parent(s) or Guardian(s),

Recently we contacted you to invite your child to participate in our study on Preschoolers' Development of Intent-Based Moral Judgment. Thank you for agreeing to allow your child to participate – we had a lot of fun!

The purpose of our current research program is to gain a better understanding of how children develop the ability to use personality trait information and intention information in their moral reasoning. We read a number of different stories with your child and asked them questions about characters that were described as having a 'nice' or 'mean' personality, who accidentally made another story character happy or sad (e.g., accidentally splashing water on someone, with that person being happy because they were hot). The stories were designed to examine whether children use information about a character's personality when deciding whether that character did things on purpose (or by accident), whether it was good or bad that the character did what she/he did, and whether that character should get in trouble for what they did. We also played games that measured related skills such as working memory and vocabulary. Your child's answers to these questions will help us to understand how children begin to take into account others' personality information and intentions when making moral evaluations.

We are very excited to start investigating the results of our study. For more information about our findings, or for a summary of the project once it is complete, please contact Sarah Gardiner by email at Sarahgardiner@email.carleton.ca or 613-520-2600, ext. 2885.

If you have any ethical concerns about this study, please contact: Dr. Andy Adler, Chair, Carleton University Research Ethics Board-B (adler@sce.carleton.ca or 613-520-2600 ext. 4085). You may also contact the Carleton University Research Compliance Office at ethics@carleton.ca. The ethics protocol number for this study is #106238.

The information collected in this study is confidential and will be coded such that a child's name is not associated with their responses. The information provided will be used for research purposes only, and will only be accessible to the researchers directly involved in the project. The consent form will be kept separate from the data in a locked cabinet and will be destroyed after 2 years. The datafile and hard-copies of data, though they do not include identifying information, are stored on a password protected computer (the datafile) and in a locked room (the hard copies).

As soon as we have finished talking with all of the children that will be participating in the study, we will remove the file linking the children's names to their identification numbers used in the datafile. In other words, it will no longer be possible to identify an individual child's responses (the data will be anonymized). As a result, participants will no longer be able to withdraw their data after that time. We estimate that this will occur in July 2017. Analyses presented in presentations or written publications will only contain group data, with no identification of individuals who participated in this study.

We cannot provide any information about an individual child, only about the study as a whole. If you have any concerns about any aspect of your child's development, we suggest that you consult with your family doctor or paediatrician.

If you would like to participate in future projects in our lab at Carleton University, please contact us at the Children's Representational Development Lab by email at crdl@carleton.ca or by phone at 613-520-2600 ext. 2885.

Thank you,

Deepthi Kamawar, Ph.D.

Sarah Gardiner, M.A. candidate

Appendix D: School Principal Consent Form



**Children's Representational
Development Lab**
www.carleton.ca/crdl

Winter/Spring 2017

Dear School Principal,

As part of a current project on children's cognitive development, we are talking to children to learn about their developing ability to use information about whether someone did something on purpose, or by accident, when making moral judgments of story characters. The study has been approved by the Carleton University Research Ethics Board-B (approval number #106238; valid until 01/31/2018). In this letter, we will describe the project and request your permission for your centre's participation.

Should you wish to participate in the current project, we will provide you with individual informed consent letters to distribute to the parent(s) or guardian(s) of the four- and five-year-old children in your school. Once consent letters have been returned to you from parents, we will arrange a convenient time for you to have our researchers at your center to conduct the study. The researchers are university students with current police record checks and copies of these documents will be provided to the you before we commence any interviews with the children. The researchers will also be sensitive to the children at all times.

Children will hear a number of stories involving characters that are engaging in a neutral action (e.g., splashing water in the yard). The main character will be introduced by name and some information about the characters' personality or about the characters' physical appearance is provided. The characters' actions all result in something happening to the secondary character (e.g., someone gets wet), or the secondary character's belongings (e.g., glitter gets on artwork). This is then described as having a positive or negative emotional effect on the secondary character (e.g., the character is happy because she was hot and the water cooled her off). Children will then be asked about the story characters (e.g., whether they did something good or bad, or whether the character get in trouble for what they did). We are interested in whether children consider a character's general personality when trying to understand that characters' intentions. We will also play games that measure related skills such as memory and general language ability. Children usually enjoy these kinds of activities and will be thanked for their participation.

We will meet with each child twice, for approximately 15-20 minutes each time. Participation in this experiment is completely *voluntary*. Children will be asked if they want to participate, and if they don't, they will not be pressured into participating. Children can stop playing at any time during the session. Children who choose not to participate, or who's parents did not provide written consent, will continue with their usual daily routine. No information will be collected from the files or records of individual students. The study results will not appear in any school records.

The information collected in this study is confidential and will be coded such that a child's name is not associated with their responses. The information provided will be used for research purposes only, and will only be accessible to the researchers directly involved in the project. The consent form will be kept

Appendix D: School Principal Consent Form Continued

separate from the data in a locked cabinet and will be destroyed after 2 years. The datafile and hard-copies of data, though they do not include identifying information, are stored on a password protected computer (the datafile) and in a locked room (the hard copies). As soon as we have finished talking with all of the children that will be participating in the study, we will remove the file linking the children's names to their identification numbers used in the datafile. In other words, it will no longer be possible to identify an individual child's responses (the data will be anonymized). As a result, participants will no longer be able to withdraw their data after that time. We estimate that this will occur in July 2017. Analyses presented in presentations or written publications will only contain group data, with no identification of individuals who participated in this study.

The research supervisor of this project is Dr. Deepthi Kamawar and she may be reached at 613-520-2600, ext. 7021 or deepthi.kamawar@carleton.ca. The primary researcher involved in this project is Sarah Gardiner, M.A. candidate, and she can be reached by email at Sarahgardiner@cmail.carleton.ca. An additional undergraduate student Shauna-Marie Sobers will also be assisting (shaunamariesobers@cmail.carleton.ca). This study is funded in part by the Natural Sciences and Engineering Research Council of Canada.

This study has been approved by Carleton University's Research Ethics Board-B (ethics protocol number: ##106238) and has been deemed minimal risk. Some participants may find a particular task taxing, which could cause them to become upset. In those rare cases, children are dealt with in a very sensitive manner (told that we're all done, thanked for doing a great job) and taken back to their teachers. We have used similar tasks with approximately 2000 children in the same age ranges over the past 13 years and found this reaction to be extremely rare. If you have any ethical concerns about this study, please contact: Dr. Andy Adler, Chair, Carleton University Research Ethics Board-B (adler@sce.carleton.ca or 613-520-2600 ext. 4085). You may also contact the Carleton University Research Compliance Office at ethics@carleton.ca.

Your consent is required for your school's participation in this project. Kindly sign the attached consent form indicating whether we may provide you with individual consent forms for parents or guardians of children within this age range in your centre. If you would like a summary of the research results once the study is completed, please contact Sarah Gardiner. However, please note that individual feedback regarding the children cannot be provided.

Thank you for your consideration.

Sincerely,

Deepthi Kamawar, Ph.D.

Sarah Gardiner, M.A. candidate

Appendix D: School Principal Consent Form Continued**Carleton University Study – Children’s Use of Trait Information in Their Intention
Ascription and Moral Judgments of Others**

The information collected for this project is confidential and protected under the Provincial Freedom of Information and Protection of Privacy Act.

I have read the attached description of the study of *Children’s Use of Trait Information in their Intention Ascriptions and Moral Judgments of Others* and I understand the conditions of my school’s participation.

I understand that the study will require two 15- 20-minute testing sessions, with children of appropriate ages, whose parents/guardians have given written consent for their children’s participation in the research project.

Name of School: _____

Address: _____

Signature: _____ Date: _____

Name & Title (*please print*): _____

Appendix E: School Parent Consent Form



**Children's Representational
Development Lab**
www.carleton.ca/crdl

Winter/Spring 2017

Dear parent(s) or guardian(s),

As part of a current project on children's cognitive development, we are talking to children to learn about their developing ability to use information about whether someone did something on purpose, or by accident, when making moral judgments of story characters. The study has been approved by the Carleton University Research Ethics Board-B (approval number #106238; valid until 01/31/2018). In this letter, we will describe the project and request your permission for your child to participate. The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your child's involvement.

Children will hear a number of stories involving characters that are engaging in a neutral action (e.g., splashing water in the yard). The main character will be introduced by name and some information about the characters' personality or about the characters' physical appearance is provided. The characters' actions all result in something happening to the secondary character (e.g., someone gets wet), or the secondary character's belongings (e.g., glitter gets on artwork). This is then described as having a positive or negative emotional effect on the secondary character (e.g., the character is happy because she was hot and the water cooled her off). Children will then be asked about the story characters (e.g., whether they did something good or bad, or whether the character get in trouble for what they did). We are interested in whether children consider a character's general personality when trying to understand that characters' intentions. We will also play games that measure related skills such as memory and general language ability. Children usually enjoy these kinds of activities and will be given stickers as thanks (even if they stop playing part-way through). We will also provide enough stickers for all children in the participating classrooms to the daycare, so that all children get some, even if they're not participating in our study.

We will meet with each child twice, for approximately 15-20 minutes each time. Participation in this experiment is completely *voluntary*. Children will be asked if they want to participate, and if they don't, they will not be pressured into participating. The researchers all have current police record checks, and copies of these documents will be provided to the school Principal before we commence any interviews with your child. The researchers will also be sensitive to the children at all times. Children can stop playing at any time during the session.

The information collected in this study is confidential and will be coded such that a child's name is not associated with their responses. The information provided will be used for research purposes only, and will only be accessible to the researchers directly involved in the project. The consent form will be kept separate from the data in a locked cabinet and will be destroyed after 2 years. The datafile and hard-copies of data, though they do not include identifying information, are stored on a password protected computer (the datafile) and in a locked room (the hard copies). As soon as we have finished talking with all of the children that will be participating in the study, we will remove the file linking the children's names to their identification numbers used in the datafile. In other words, it will no longer be possible to identify an individual child's responses (the data will be anonymized). As a result, participants will no longer be able to withdraw their data after that time. We estimate that this will occur in July 2017. Analyses presented in presentations or written publications will only contain group data, with no identification of individuals who participated in this study.

The research supervisor of this project is Dr. Deepthi Kamawar and she may be reached at 613-520-2600, ext. 7021 or deepthi.kamawar@carleton.ca. The primary researcher involved in this project is Sarah Gardiner M.A. candidate, and she can be reached by email at Sarahgardiner@gmail.com. An additional undergraduate student Shauna-Marie Sobers will also be assisting (shaunamariesobers@gmail.com). This study is funded by the Natural Sciences and Engineering Research Council of Canada.

Appendix E: School Parent Consent Form Continued

This study has been approved by Carleton University's Research Ethics Board-B (ethics protocol number: #106238) and has been deemed minimal risk. Some participants may find a particular task taxing, which could cause them to become upset. In those rare cases, children are dealt with in a very sensitive manner (told that we're all done, thanked for doing a great job) and taken back to their teachers. We have used similar tasks with approximately 2000 children in the same age ranges over the past 13 years and found this reaction to be extremely rare.

If you have any ethical concerns about this study, please contact: Dr. Andy Adler, Chair, Carleton University Research Ethics Board-B (adler@sce.carleton.ca or 613-520-2600 ext. 4085). You may also contact the Carleton University Research Compliance Office at ethics@carleton.ca.

Your consent is required for your child's participation in this project. Kindly sign the attached consent form indicating whether your child may participate in this research and return it to your child's school teacher. If you would like a summary of the research results once the study is completed, please contact Sarah Gardiner. However, please note that individual feedback regarding the children cannot be provided.

Thank you for your consideration.

Sincerely,

Deepthi Kamawar, PhD

Sarah Gardiner M.A. candidate

Appendix E: School Parent Consent Form

Carleton University Study – Children’s Use of Trait Information in Their Intention Ascription and Moral Judgments of Others.

The information collected for this project is confidential and protected under the Provincial Freedom of Information and Protection of Privacy Act.

I have read and understood the request for my child to participate in the study of *Children’s use of Trait information in their Intention Ascriptions and Moral Judgments of Others* I have discussed it with my child and ...

- I consent to my child’s participation in the current study **[please fill out the next page]**
- I do not consent to my child’s participation in the current study

Child’s Name (please print): _____

Parent’s/Guardian’s Name (please print): _____

Signature: _____ Date: _____

Participant Information

If you have consented to your child participating on the previous page, please provide us with the following information about your child. If you have not provided consent, please do not fill out this page.

Please note: your child’s name and birth date will be kept separate from their data and consent form, and only researchers directly involved in this project will have access to this information.

Child’s Date of Birth: year _____ month _____ day _____

Please indicate the language(s) spoken at home and then please circle the ones that your child is

fluent in: _____

Appendix F: Adult Participant Consent Form



**Children's Representational
Development Lab**
www.carleton.ca/crdl

In this letter, we will describe the project and request your consent to participate. The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Present Study: Children's Use of Trait Information in Their Intention Ascription and Moral Judgments of Others

Research Personnel. The following people are involved in this study, and may be contacted at any time if you have questions of concerns: Sarah Gardiner (Sarahgardiner@cmail.carleton.ca) and Dr. Deepthi Kamawar (Faculty Sponsor, e-mail: deepthi.kamawar@carleton.ca).

Concerns. If you have any ethical concerns about this study, please contact: Dr. Andy Adler, Chair, Carleton University Research Ethics Board-B (adler@sce.carleton.ca or 613-520-2600 ext. 4085). You may also contact the Carleton University Research Compliance Office at ethics@carleton.ca.

Purpose. As part of a current project on children's cognitive development, we are talking to children to learn about their developing ability to use intention information in their moral judgments. In order to compare these results to the way that adults respond, we are also collecting data from an adult population.

Task Requirements. You will hear a number of very short stories involving characters who perform a number of actions. You will then be asked to evaluate the characters in the stories. We are interested in examining the factors that are considered when making these decisions. The testing session will last for approximately 30 minutes.

Benefits/compensation. Participation in this experiment is completely *voluntary*. You will receive 0.5% credit towards your course (PSYC 1001, 1002, 2001, 2002 or NEUR 2001, 2002). You can stop participating at any time during the session, or omit any questions that you would rather not answer, and will still receive your compensation.

Potential risk/discomfort. The study involves no physical or psychological risks for those who take part in it.

Anonymity/Confidentiality. The information collected in this study is confidential and will be coded such that a participant's name is not associated with their responses. The information provided will be used for research purposes only, and will only be accessible to the researchers

Appendix F: Adult Participant Consent Form Continued

directly involved in the project. The consent form will be kept separate from the data in a locked cabinet and will be destroyed after 2 years. The datafile and hard-copies of data, though they do not include identifying information, are stored on a password protected computer (the datafile) and in a locked room (the hard copies). As soon as we have finished collecting information from all of the participants, we will remove the file linking the participant's names to their identification numbers used in the datafile. At this point, it will no longer be possible to identify an individual participant's responses (i.e., the data will be anonymized). As a result, participants will no longer be able to withdraw their data. We estimate that this will occur in July 2017.

Right to withdraw. Your participation in this study is entirely voluntary. At any point during the study, you have the right to not complete certain questions, or to withdraw without penalty. If you withdraw, you have the right to require that your data be deleted.

The study has been approved by the Carleton University Research Ethics Board-B (approval number #106238; valid until 01/31/2018).

Your consent is required for your participation in this project. Kindly sign the attached consent form indicating whether you consent to participate in this research. If you would like a summary of the research results once the study is completed, please contact Sarah Gardiner. However, please note that individual feedback cannot be provided.

Thank you for your consideration.

Sincerely,

Deepthi Kamawar, Ph.D.

Sarah Gardiner, M.A. candidate

Appendix F: Adult Participant Consent Form Continued**Signatures**

The information collected for this project is confidential and protected under the Provincial Freedom of Information and Protection of Privacy Act.

I have read the above form and understand the conditions of my participation. My participation in this study is voluntary, and I understand that if at any time I wish to leave the experiment, I may do so without having to give an explanation and with no penalty whatsoever. Furthermore, I am also aware that the data gathered in this study are confidential and anonymous with respect to my personal identity. My signature indicates that I agree to participate in this study.

Participant's Name: _____

Participant's signature: _____

Researcher's Name: _____

Researcher's signature: _____

Date: _____

Appendix G: Adult Participant Debriefing



**Children's Representational
Development Lab**
www.carleton.ca/crdl

Winter/Spring 2017

Dear Participant,

Thank you for participating in our study on Children's Use of Trait Information in Their Intention Ascription and Moral Judgments of Others.

The purpose of our current research program is to gain a better understanding of how children develop the ability to use trait and intention information in their moral reasoning. We are collecting information from adult participants as well in order to compare children's responses to those of adults. The stories you heard were about characters that unintentionally caused either a positive or negative emotional reaction in a secondary character. The stories were designed to examine whether children incorporate trait information in their intention ascriptions and moral evaluations of others. Therefore, questions are asked about the characters following each story (e.g., whether the character did things on purpose (or by accident), whether it was good or bad that the character did what she/he did, and whether the character should get in trouble for what they did). Your answers to these questions will help us understand how children's responses compare to those of adults.

If you're interested in learning more about this area, you can read more about:

Heyman, G. D., & Gelman, S. A. (1999). The use of trait labels in making psychological inferences. *Child Development, 70*(3), 604-619.

Wellman, H. M., Cross, D., & Watson, J. (2001). Meta-analysis of theory-of-mind development: The truth about false belief. *Child Development, 72*(3), 655-684.

We are very excited to start investigating the results of our study. For more information about our findings, or for a summary of the project once it is complete, please contact Sarah Gardiner by email at Sarahgardiner@cmail.carleton.ca or 613-520-2600, ext. 2885.

If you have any ethical concerns about this study, please contact: Dr. Andy Adler, Chair, Carleton University Research Ethics Board-B (adler@sce.carleton.ca or 613-520-2600 ext. 4085). You may also contact the Carleton University Research Compliance Office at ethics@carleton.ca. The ethics protocol number for this study is #106238.

The information collected in this study is confidential and will be coded such that a participant's name is not associated with their responses, and the information provided will be used for research purposes only, and will only be accessible to the researchers directly involved in the project. We cannot provide any information about an individual participant, only about the study as a whole. Your participation in this study is entirely voluntary. At any point during the study, you have the right to not complete certain questions, or to withdraw without penalty. If you withdraw, you have the right to require that your data be deleted.

Thank you,

Deepthi Kamawar, Ph.D.

Sarah Gardiner M.A. candidate

Appendix H: Familiarization Trial (Andrews, 2015)

[Each time a character is mentioned, point to relevant character in illustration]

Positive Outcome

This is Harper and this is Morgan. Harper is drawing a picture with her crayons. Then she sees that Morgan doesn't have anything to play with so Harper shares her crayons with Morgan. Now Morgan can draw a picture.

Comprehension

1. Were they eating a snack? Yes/No

[If yes: "Remember, Harper is drawing a picture with her crayons"] up to 3X

2a. Did Harper share her crayons with Morgan? Yes/No

[If no: "Remember, Harper shares her crayons"] up to 3X

Moral Judgment

1a. Think about Harper. Was she being bad? Yes/No

(if yes) How bad, a little or a lot?

Little / a lot

Was Harper being good?

Yes/ No

(if yes) how good, a little or a lot?

Little/ a lot

Punishment

1a. Think about Harper. Should he get in trouble? Yes/No

(if yes) How much trouble, a little or a lot?

Little/ a lot

Appendix H: Familiarization Trial Continued (Andrews, 2015)**Negative Outcome**

This is Jordan and this is Alex. Jordan is playing with a ball. Alex sees the ball and he wants it so, Alex comes along and takes the ball away from Jordan without even asking.

Comprehension

1. Were they flying a kite? Yes/No

[If yes: "Remember, Jordan is playing with a ball"] up to 3X

2a. Did Alex take the ball from Jordan? Yes/No

[If no: "Remember, Alex comes along and takes the ball away"] up to 3X

Moral Judgment

1a. Think about Alex. Was he being bad? Yes/No

(if yes) How bad, a little or a lot? Little / a lot

Was he being good? Yes/ No

(if yes) how good, a little or a lot? Little/ a lot

Punishment

1a. Think about Alex. Should he get in trouble? Yes/No

(if yes) How much trouble, a little or a lot? Little/ a lot

Appendix I: Example of Stories Task Protocol for Mean-Trait Present

Water Hose: Trait Mean, Outcome Positive

Mean/ Positive	MJ	Purpose/Good
Water Hose		
This is Karli [<i>point to character in picture</i>]. Karli is mean. She doesn't share her toys, she calls her friends mean names and takes other children's snacks. Karli is mean.		
Memory Check		
Is Karli nice or mean? Nice/ Mean		
If correct: That's right! Karli is mean.		
If incorrect: Oh remember! [<i>Reread trait condition</i>].		
Ask child question again (x3) # times repeated _____		
Karli is playing with a hose in her backyard.		
This is Sam [<i>point to character in picture</i>]. Sam is playing in her backyard.		
Karli [<i>point to character in picture</i>] does not see Sam [<i>point to character in picture</i>]		
Karli is using the hose to splash water all over her backyard.		
Look, some of the water went over the fence and splashed Sam.		
Sam is happy, she was hot and the water cooled her off.		
Comprehension		
Think about Karli.	#times(3X)	
1a) Did Karli see Sam?	Yes/No _____	
If incorrect: (point to relevant picture). Remember, Karli [<i>point to character in picture</i>] does not see Sam [<i>point to character in picture</i>].		
1b) Think about Sam. Did Sam get splashed with water?	Yes/No _____	
If incorrect: (point to relevant picture) Remember, some of the water went over the fence and splashed Sam.		
1c) Was Sam happy or sad about getting splashed with water?	Happy/Sad _____	
If Incorrect: (point to relevant picture) Remember, Sam is happy, she was hot and the water cooled her off.		

Appendix I: Example of Stories Task Protocol for Mean-Trait Present Continued

Mean/ Positive	MJ	Purpose/Good
Intention		
Think about Karli.		
2a) Did Karli splash the water in her backyard on purpose or by accident?		Purpose/ Accident
2b) Did Karli get water on Sam on purpose or by accident?		Purpose/ Accident
2c) Did Karli make Sam happy on purpose or by accident?		Purpose/ Accident
Moral Judgment		
3a) Was Karli being good?		Yes/No
If Yes: How good? A little or a lot?		Little/ A lot
3b) Was Karli being bad?		Yes/No
If Yes: How bad? A little or a lot?		Little / A lot
Punishment		
4a) Should Karli get in trouble?		Yes/No
If yes: How much trouble? A little or a lot?		Little / A lot

Appendix J: Example of Stories Task Protocol for Nice-Trait Present Condition

Glitter: Trait Nice, Outcome Negative

Nice/Negative	MJ	Purpose/Good
Glitter		
This is Tom [<i>point to character in photo</i>]. Tom is nice. He shares his toys, helps to clean up messes and shares snacks with his friends. Tom is nice.		
Memory Check		
Is Tom nice or mean? Nice/Mean		
If correct: That's right! Tom is mean.		
If incorrect: Oh remember! [<i>Reread trait condition</i>].		
Ask child question again (x3) # times repeated _____		
Tom is working on a craft in his classroom.		
This is Jessie [<i>point to character</i>]. He put his picture near Tom.		
Tom [<i>point to character</i>] does not see Jessie's picture [<i>point to picture</i>].		
Tom is using glitter to put sparkles all over his craft.		
Look, some of the glitter went over on Jessie's picture.		
Jessie is sad, he does not like the glitter on his picture		
Comprehension		
Think about Tom.		#times(3X)
1a) Did Tom see Jessie's picture?	Yes/No _____	
If incorrect: (<i>point to relevant picture</i>) Remember, Tom [<i>point to character</i>] does not see Jessie's picture [<i>point to picture</i>].		
1b) Did glitter get on Jessie's picture?	Yes/No _____	
If incorrect: (<i>point to relevant picture</i>) Remember, some of the glitter went over on Jessie's picture.		
1c) Was Jessie happy or sad about getting glitter on his picture	Happy/Sad _____	
If incorrect: (<i>point to relevant picture</i>) Remember, Jessie is sad, he does not like the glitter on his picture.		

**Appendix J: Example of Stories Task Protocol for Nice-Trait Present Condition
Continued**

Nice/Negative	MJ	Purpose/Good
<u>Intention</u>		
2a) Think about Tom. Did Tom use the glitter on purpose or by accident?		Purpose/Accident
2b) Did Tom get glitter on Jessie’s picture on purpose or by accident?		Purpose/Accident
2c) Did Tom make Jessie sad on purpose or by accident?		Purpose/Accident
<u>Moral Judgment</u>		
3a) Was Tom being good?	Yes/No	
If Yes: How good? A little or a lot?		Little/ A Lot
3b) Was Tom being bad?	Yes/No	
If Yes: How bad? A little or a lot?		Little/ A Lot
<u>Punishment</u>		
4a) Should Tom get in trouble?	Yes/No	
If yes: How much trouble? A little or a lot?		Little/ A Lot

Appendix K: Example of Stories Task Protocol for Trait Absent Condition

Sandcastle: No Trait, Outcome Positive

No Trait/Positive	MJ	Purpose/Good
Sand Castle		
This is Mia [<i>point to picture</i>]. She has brown hair, brown eyes and a little sister. This is Mia.		
Memory Check		
Does Mia have a brother or sister? Brother/Sister		
If correct: That's right! Mia has a sister		
If incorrect: Oh remember! [<i>Reread trait condition</i>].		
Ask child question again (x3) # times repeated _____		
Mia is at the beach and is digging a hole in the sand.		
This is Emma [<i>point to character</i>]. She is building a sandcastle at the beach.		
Mia [<i>point to character</i>] does not see Emma [<i>point to character</i>].		
Mia is using her sand shovel to dig up wet sand.		
Look, some of the sand landed on Emma's castle.		
Emma is happy, that sand made her castle bigger.		
Comprehension		
Think about Mia.		#times(3X)
1a) Did Mia see Emma?		Yes/No _____
If incorrect: (point to relevant picture). Remember, Mia [<i>point to character</i>] does not see Emma [<i>point to character</i>].		
1b) Did sand get on Emma's sand castle?		Yes/No _____
If incorrect: (point to relevant picture). Remember, me of the sand landed on Emma's castle.		
1c) Was Emma happy or sad about the sand getting on her sand castle		Happy/Sad _____
If incorrect: (point to relevant picture). Remember, Emma is happy, that sand made her castle bigger.		

**Appendix K: Example of Stories Task Protocol for Trait Absent Condition
Continued**

No Trait/Positive	MJ	Purpose/Good
<u>Intention</u>		
Think about Mia.		
2a) Did Mia use the sand shovel on purpose or by accident?		Purpose/Accident
2b) Did Mia get sand on Emma’s sand castle on purpose or by accident?		Purpose/ Accident
2c) Did Mia make Emma happy on purpose or by accident?		Purpose/ Accident
<u>Moral Judgment</u>		
3a) Was Mia being good?	Yes/No	
If Yes: How good? A little or a lot?		Little/ A Lot
3b) Was Mia being bad?	Yes/No	
If Yes: How bad? A little or a lot?		Little/ A Lot
<u>Punishment</u>		
4a) Should Mia get in trouble?	Yes/No	
If yes: How much trouble? A little or a lot?		Little/ A Lot

Appendix L: Story Themes

Story Theme	Water Hose	Glitter	Digging	Ball	Water Balloon	Sandcastle
Introduction of main character in story context	Karli is playing with a hose in her backyard.	Tom is working on a craft in his classroom.	Felicia is digging with a shovel in her backyard.	Joey is playing soccer in his front yard.	Liam is at the park playing with water balloons.	Mia is at the beach and is digging a hole in the sand.
Introduction of secondary character	This is Sam. She is playing in her backyard.	This is Jessie. He put his picture near Tom.	This is Becky. She is playing in her backyard with a toy truck.	This is Billy. He is playing with toys in his front yard.	This is Noah. He is also playing at the park.	This is Emma. She is building a sandcastle at the beach.
Foreseeability	Karli does not see Sam.	Tom does not see Jessie’s picture.	Felicia does not see Becky.	Joey does not see Billy.	Liam does not see Noah.	Mia does not see Emma.
Action	Karli is using the hose to splash water all over her backyard.	Tom is using glitter to put sparkles all over his craft.	Felicia is using the shovel to put new dirt in her garden.	Joey is kicking his soccer ball against his house.	Liam is throwing water balloons against the ground.	Mia is using her sand shovel to dig up wet sand.
Outcome of Action	Look, some of the water went over the fence and splashed Sam.	Look, some of the glitter went over on Jessie’s picture.	Look, some of the dirt went over the fence and landed on Becky’s truck.	Look, Joey missed the ball and it landed on Billy’s toys.	Look, the water balloon bounced off the ground and got Noah wet.	Look, some of the sand landed on Emma’s castle.
Positive Emotional Outcome	Sam is happy, she was hot and the water cooled her off.	Jessie is happy, he likes the glitter on his picture.	Becky is happy, now her truck gets to drive on a dirt pile.	Billy is happy, he likes soccer and now he can play.	Noah is happy, he likes getting splashed.	Emma is happy, the sand made her castle bigger.
Negative Emotional Outcome	Sam is sad, now she has to get dry clothes.	Jessie is sad, he does not like the glitter on his picture.	Becky is sad, she did not want her truck to get dirty.	Billy is sad, the ball knocked over his toys.	Noah is sad, he did not want to get wet.	Emma is sad, the sand ruined her castle.

Appendix M: Example of Story Photos

This example demonstrates what the story theme ‘Water Hose’ looks like for the Nice Trait-Present condition (both the positive and negative outcomes are included).

Water Hose:

Picture 1



This is Karli. Karli is nice. She shares her toys, helps to clean up messes and shares snacks with her friends. Karli is nice.

Picture 2



Karli is playing with a hose in her backyard.

Appendix M: Example of Story Photos Continued

Picture 3



This is Sam. She is playing in her backyard.

Picture 4



Karli does not see Sam.

Appendix M: Example of Story Photos Continued*Picture 5*

Karli is using the hose to splash water all over her backyard

Picture 6

Look, some of the water went over the fence and splashed Sam.

Appendix M: Example of Story Photos Continued

Picture 7 – Positive Outcome (Happy)



Sam is happy, she was hot and the water cooled her off.

Picture 7 – Negative Outcome (Sad)



Sam is sad, now she has to get dry clothes.

Appendix N: First-Order False-Belief Protocol**First-order False Belief – Change of Location (Wimmer & Perner, 1983; Vendetti, 2015)****Theory of Mind Task (Change of Location)**

I'm going to tell you a story. Listen carefully and then I'll ask you some questions.

This little girl's name is Jill. Jill was playing with a ball. When she was done playing with it, she put it in the white box and then went outside to play. *(Move Jill aside, hidden).*

While Jill was playing outside, her friend Peter came along. Peter found the ball and he played with it for a little while. When he was done he put it in the polka-dot box and then he went away to do something else. *(Move Peter to a different aside location, hidden).*

1. **Where did Jill put the ball?** [white box] [polka dot box]

2. **Where is the ball now?** [polka dot box] [white box]

A little while later, Jill came back from playing outside. She wanted to play with the ball again. *(Position Jill an equal distance from both boxes. Do not orient her towards either box).*

3. **Where will Jill first look for the ball?** [white box] [polka dot box]

Appendix N: First-Order False-Belief Protocol Continued

First-order False-Belief – Unexpected Contents (Astington & Gopnik, 1988; Vendetti, 2015)

Theory of Mind (Unexpected Contents)

Look at this (*show a closed, Crayola crayons box*).

1. **What's in here?** [crayons] _____

Let's open it and have a look (*Open box and show child*).

2. **What is it?** [toy pig] _____

Yah! A toy pig! That's interesting, isn't it? I just put it in this box to keep it safe. Well, let's put him back into the box now... (*Put pig back in the box*). *Once box is closed:*

3. **What's in the box?** [pig] _____

*False Belief for self:

4. **What did you think was inside the box BEFORE we opened it?**
[pig] [crayons] _____

*False Belief for other: **Tomorrow I am going to play this game with a brand new friend.**

5. **What will s/he think is inside it BEFORE s/he opens it?**
[pig] [crayons] _____

Appendix O: Second-Order False-Belief Protocol (Loke, 2010; Sullivant et al., 1994; Vendetti, 2015)

Second-Order False-Belief - Cookies

Theory of Mind (Second-Order False Belief: Cookies)

Use plan toy dolls to act out each bullet point. Directions for researchers appear in italics, in square brackets.

- This is a story about a brother and sister, Molly and Andrew. [*indicate Molly and Andrew*]. They are doing homework in the kitchen.
- Molly made some cookies for them to share. Andrew wants to eat the cookies now, but Molly doesn't want to.
- Molly needs to ask her dad a question about her homework. She puts the plate of cookies in the fridge and leaves the room.
- While Molly is gone, Andrew gets the plate of cookies and eats one of them. Then he puts the plate of cookies in the cupboard. [*Andrew remains standing there while Molly comes back from the other room*].
- Molly is finished asking her dad a question and she comes back. [*Stands behind Andrew*]. She sees Andrew putting the plate of cookies in the cupboard. Molly watches Andrew, but Andrew does not see Molly.

Comprehension Questions:

1. **Where did Molly put the plate of cookies when she left the room?**
[fridge] [cupboard] [IDK]
2. **Where did Andrew put the plate of cookies?** [cupboard] [fridge] [IDK]
3. **Does Molly know where the cookies are now?** [yes] [no] [IDK]

First-order false belief:

4. **Does Andrew know** [*point to Andrew*] **that Molly** [*point to Molly*] **saw him** [*motion from Molly to John*]? [yes] [no] [IDK]

Story Continues:

- **A little while later, Molly tells Andrew that they can eat the cookies. She is going to get them.** [*Move Molly so that she is equal distance from the two locations*]

Second-order false belief:

5. **Where does Andrew think** [*pointing to Andrew*] **that Molly** [*point to Molly*] **will look for the cookies?** [fridge] [cupboard] [IDK]

Appendix O: Second-Order False-Belief Protocol

Second-Order False-Belief – John’s Book

Theory of Mind (Second-Order False Belief: Book)

Use Playmobil dolls to act out each bullet point.

- This is a story about two friends, John and Sophia [*indicate John and Sophia*].
- John has a new book that he just got. Sophia wants to read John’s new book, but he does not want her to.
- John’s mum calls him to go downstairs. He puts the book under his blanket and goes downstairs.
- While John is gone, Sophia takes the book and reads it. Then she puts it in John’s toy box. [*Sophia remains standing there while John comes back from being with his mom*].
- John is finished with his mum and comes back. [*Stands behind Sophia*]. He sees Sophia putting the book in his toy box. John watches Sophia, but Sophia does not see John.

Comprehension Questions:

1. **Where did John put the book before he went downstairs?**
[bed] [toy box] [IDK] _____
2. **Where did Sophia put the book?** [toy box] [bed] [IDK] _____
3. **Does John know where the book is now?** [yes] [no] [IDK] _____

First-order false belief:

4. **Does Sophia know** [*point to Sophia*] **that John** [*point to John*] **saw her** [*motion from John to Sophia*] ? [yes] [no] [IDK] _____

Story Continues:

- **A little while later, John tells Sophia that she can read his new book. He is going to get the book for her.** [*Move John so he is equal distances from the two locations*]

Second-order false belief:

5. **Where does Sophia think** [*pointing to Sophia*] **that John** [*point to John*] **will look for the book?** [bed] [toy box] [IDK] _____

Appendix P: Working Memory Tasks Protocol (Backward Digit Span; Davis & Pratt, 1996)

“Now we are going to play a number game!”

“This is my friend, Willy. Whenever I say numbers, Willy says them backwards. Listen: **5 – 8.** (*Willy says:*) **8 – 5.** Now I want you to do the same as Willy and say my numbers backwards. Do you understand? Let’s try one. Ready? Listen carefully. Remember to say the numbers backwards. **2 – 4.**” (*score below*)

“Let’s try another one. Remember to say the numbers backwards. **7 – 1.**”

Digits Forward

Child’s Response

- i. **2 – 4** (“That’s right!” or correct the mistake) ____ – ____ ; ____ – ____
- ii. **7 – 1** (“That’s right!” or correct the mistake) ____ – ____ ; ____ – ____

“Now lets do some more!”

Discontinue testing when child answers BOTH trials in a SINGLE set incorrectly.

1.	6 – 3	____ – ____
2.	4 – 9	____ – ____
3.	2 – 9 – 5	____ – ____ – ____
4.	8 – 1 – 6	____ – ____ – ____
5.	8 – 5 – 2 – 6	____ – ____ – ____ – ____
6.	4 – 9 – 3 – 7	____ – ____ – ____ – ____
7.	8 – 1 – 3 – 7 – 9	____ – ____ – ____ – ____ – ____
8.	4 – 2 – 5 – 8 – 1	____ – ____ – ____ – ____ – ____
9.	9 – 3 – 5 – 1 – 8 – 4	____ – ____ – ____ – ____ – ____ – ____
10.	6 – 5 – 8 – 4 – 2 – 7	____ – ____ – ____ – ____ – ____ – ____

Appendix Q: Story Orders

Order One, Positive Outcome First

Outcome	Condition		
	Nice Trait-Present	Mean Trait-Present	Trait-Absent
Positive	Water Hose Glitter Ball	Water Hose Glitter Ball	Water Hose Glitter Ball
Negative	Sandcastle Digging Water Balloon	Sandcastle Digging Water Balloon	Sandcastle Digging Water Balloon

Order One, Negative Outcome First

Outcome	Condition		
	Nice Trait-Present	Mean Trait-Present	Trait-Absent
Negative	Water Hose Glitter Ball	Water Hose Glitter Ball	Water Hose Glitter Ball
Positive	Sandcastle Digging Water Balloon	Sandcastle Digging Water Balloon	Sandcastle Digging Water Balloon

Order Two, Positive Outcome First

Outcome	Condition		
	Nice Trait-Present	Mean Trait-Present	Trait-Absent
Positive	Sandcastle Digging Water Balloon	Sandcastle Digging Water Balloon	Sandcastle Digging Water Balloon
Negative	Water Hose Glitter Ball	Water Hose Glitter Ball	Water Hose Glitter Ball

Order Two, Negative Outcome First

Outcome	Condition		
	Nice Trait-Present	Mean Trait-Present	Trait-Absent
Negative	Sandcastle Digging Water Balloon	Sandcastle Digging Water Balloon	Sandcastle Digging Water Balloon
Positive	Water Hose Glitter Ball	Water Hose Glitter Ball	Water Hose Glitter Ball

Appendix R: Descriptive Statistics for Child Participants per Condition*Descriptive Statistics for Child Participants per Condition*

Condition (sample size)	Girls/Boys	4 year-olds	5 year-olds	Mean Age in Months (SD)
Mean-Trait (20)	13/7	11	9	58.35(6.98)
Nice-Trait (20)	11/9	12	8	57.87(8.48)
Trait-Absent (21)	14/7	14	6	54.90(7.31)

Appendix S: Approval Form School Board

Ottawa Catholic School Board
Catholic Education Centre
570 West Hunt Club Road
Nepean, Ontario K2G 3R4
Phone: 613-224-2222
Fax: 613-228-4158
ocsb.ca

March 28, 2017

Sarah Gardiner
5-38 Clarey Ave.
Ottawa, ON
K1S 2R7

Re: Children's use of trait information in their intention ascriptions and moral judgment
of others

Dear Ms. Gardiner,

We have reviewed your application and are granting you formal **approval** to conduct your research in **this academic year**. This approval is for the **Ottawa Catholic School Board only**. The Ottawa-Carleton DSB could not accommodate your request at this time.

Please note that final approval to participate in the study must come from the individual school principal.

In addition, we ask that you do not hand out any stickers to children at the school.

We thank you for approaching the Ottawa Catholic School Board as a venue for your study and we look forward to receiving a copy of your results.

Sincerely,



Lauren Figueredo, Ph.D.
Research Officer, Student Success – Leading & Learning
Ottawa Catholic School Board
613-224-4455 ext. 2341
lauren.figueredo@ocsb.ca

On behalf of the Ottawa-Carleton Research and Evaluation Advisory Committee