

Recognising wrongdoing: Young children's reasoning about morality

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Abstract

By the end of preschool, children are moral agents. They hold themselves to the same “objective” normative standards that they hold others to, and behave and expect others to behave according to these standards. Whenever these standards are not upheld, they experience guilt and expect to see it in others, and during the later preschool years, use their culture’s shared hierarchy of values to justify their moral judgements (e.g., ruining another’s artwork because “I thought it was mine”) and to evaluate the reasons others give for theirs. The focus of the current thesis was twofold; to extent the evidence for preschool children’s norm-based, agent-neutral sense of morality, and for their awareness of morally (in)appropriate justifications for moral acts.

In the first study, I investigated whether children apply impartial norms to their requests for help. Children aged 3 and 5 made a variety of requests for resources that they either did or did not need from an experimenter who either did or did not need them. Results suggest children of both age groups were slower and more hesitant to make an unjustified request (i.e., the child did not need the sticker, but the experimenter did) than a justified request (i.e., the child needed the sticker, but the experimenter did not). Three-year-olds, and 5-year-olds to a lesser extent, also expressed more negative guilt-like emotion when making unjustified requests as measured through changes in body posture. Five-year-olds, on the other hand, relied more on verbal indirect utterances (e.g., “You’ve got lovely stickers”) as opposed to direct ones (e.g., “Can I have that sticker”) when making unjustified requests. Already at age 3, this study shows that preschool children are sensitive to the norms around requesting, and use them to evaluate whether or not their requests are fair to recipients.

In the second study, I investigated when moral justifications become necessary. Using a partner-choice paradigm, 4- and 5-year-old children were presented with two transgressors, both of whom caused an intent-based accident (unintended action–unintended outcome) or a belief-based accident (intended action–unintended outcome). Both transgressors later apologised, however one also gave a reason for the hurt caused. The results suggest 5-year-olds, but not 4-year-olds, favoured the reason-giving transgressor when the accidents were belief-based, whereas no preference for either transgressor was found when the accidents were intent-based (meaning an apology was suffice). In a follow-up study, the reason given for the belief-related harm was manipulated. One transgressor gave a “good” reason, the other gave a “bad” reason. Five-year-olds reliably distinguished between both reasons and preferred the transgressor with the “good” reason. Thus, older preschoolers realise that some mistakes need or benefit from “good” explanations, while others can go without.

In the third study, I explored the boundaries of moral justifications. Five- and 6-year-old children witnessed a recurring harm that was caused by an apologetic actor who repeated the same reason after each offence (Same Reason condition), gave different reasons (Different Reason condition), or who was present but not personally responsible for the damage done (Baseline condition). The results suggest children of both ages were most trusting of the actor in the Baseline condition, followed by the Different Reason condition, and least trusting in the Same Reason condition. Both ages were also slower to trust the actor in the Same Reason condition as compared to the other two conditions. Thus, preschool children recognise that different reasons should accompany a repeat of the same harm. This study also shows preschool children extend the use of their culture’s ordering of moral values to repeat offences.

Together, the present studies suggest that before school entry, children already measure themselves against the same normative standards used to evaluate others. They recognise (in)appropriate justifications for solo and repeat moral offences. And even understand which moral acts warrant further explanation and which do not.

Declaration

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Rationale for journal format

This thesis is submitted in the Journal Format, which incorporates sections that are suitably formatted for publication in peer-reviewed journals. The formatting of papers has been altered slightly to make them consistent throughout the thesis, but in all other respects they are as they were published or submitted for publication.

This journal format thesis conforms to the same standards expected for a typical thesis. As in the traditional format, the introduction reviews previous research (Chapter One) and the summary draws together the various outcomes and contributions of the work undertaken (Chapter Five). In addition, three empirical papers are presented. At the time of submission, all three papers have been published (Chapters Two, Three and Four).

My contribution to these investigations was as follows. I researched the relevant literature for each paper; designed the experimental methodology, including procedure and materials (with help from illustrator Alexandra Boocock); conducted piloting and data collection; prepared and analysed data statistically; wrote, submitted and revised all papers. During this process, I received advice and supervision from my co-authors and supervisors: Bahar Köymen, Keith Jensen, Iain Jackson, Robert Hepach and Marina Proft. I also received support from Laura Boundy (Research Assistant) in carrying out the experiments described in Chapters Two and Three.

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Chapter One

General introduction

Human beings conceive of right and wrong where neither exist in nature. We hold normative expectations about how individuals “ought” to behave in certain situations, and this applies to the self as much as it does to others (Tuomela, 2007). We all know, for example, to wait in line at the bank and to dress appropriately for funerals. We also know to act in ways that protect others’ rights and welfare, including sharing jointly-earned resources fairly and refraining from hurting one another. Social norms, then, are the product of collective agreements—representing how “we” do things—which prescribe certain actions and proscribe others thereby regulating everyday social interactions (Hechter & Opp, 2001).

Our respect for norms runs deep. Individuals feel obliged to follow them—despite having self-serving motives—and will use them as reasons or justifications for why one particular course of action was chosen over another (Rakoczy & Schmidt, 2013). Norms are not only followed, however, they are also enforced. That is, group members actively police one another such that norm violations are met with censure and sanctions (Schmidt & Tomasello 2012). Thus, the norm psychology with which we operate is argued to have been instrumental in the evolution and maintenance of human cooperation, culture and morality (Boyd & Richerson, 2005; Chudek & Henrich, 2011; Tomasello, 2009).

The obvious questions arise: How did humans evolve a sense of right and wrong, of virtue and vice (phylogeny), and how do these normative attitudes develop across an individual’s lifespan (ontogeny)? Although there exist many sources of normativity (e.g., conventionality, rationality), my thesis will explore the ontogeny of morality and moral reasoning. I begin briefly, however, with the phylogenetic question of how morality evolved in the first place.

1 Phylogeny

Human beings and other primate species benefit from living in cooperatively-structured social groups. It allows for the exchange of goods and services (Graeber, 2011; Gurven, 2004), protection from predators and outsiders (Marlowe, 2005; Trivers, 1985), assistance with child-care (Hrdy, 2007, 2009), and so forth. But with these benefits come costs. At every turn, cheaters, free-riders and other noncooperators look to exploit others for personal gain (Olson, 1965). To avoid being taken advantage of, many social mammals routinely evaluate others for their suitability as social partners (e.g., Silk, 2007; Tomasello & Call, 1997).

In humans, this process of partner evaluation and partner choice intensified. Changes in the feeding ecology resulted in early humans moving further toward a more cooperative and interdependent lifestyle (Gurven, 2004; Hare, 2017; Roberts, 2005; Tomasello et al., 2012). With individually obtainable foods dwindling, the benefits of cooperation came to outweigh the benefits of individualistic pursuits (Ibbotson et al., 2022). The response was to engage in more obligate collaborative activities to secure adequate amounts of food and other resources. In other words, it was to each individual's benefit to cooperate effectively and to support one another where necessary. Success or failure ultimately became contingent on choosing good collaborative partners and, crucially, for oneself to be chosen as a good collaborative partner by others (Baumard et al., 2013; Boehm, 2001; Nesse, 2009).

The process, however, did not just intensify; it changed. A new, uniquely human reflective step emerged. Individuals came to realise that other would-be partners were also evaluating and choosing them (Goffman, 1967; Rochat, 2009). A biological marketplace of sorts thus developed, in which individuals attempted to acquire the best partners by actively advertising their own social value (Barclay, 2013; Baumard et al., 2013; Noë & Hammerstein, 1995). At this point, it became important for individuals to view themselves through the lens of their neighbours—to take the view from nowhere, as it were (Nagel, 1986)—and to subordinate or at

least equate their personal beliefs and desires to those of others in order to appear cooperative and trustworthy (Goffman, 1959; Sterelny, 2012). And since each person played the role of the assessor and the assessed—with the same normative expectations applying in both cases—individuals came to evaluate themselves in the same way that they evaluated others—that is, morally (Blasi, 1984; Hardy & Carlo, 2005; Tomasello, 2019). A new way to relate to our social partners thus emerged, one that was routinely “fraught with ought” (Sellars, 1963).

The second evolutionary step was the scaling up from dyadic and local to “objective” and universal (Tomasello, 2016). As human group size swelled, so too did the competition within and between them (Tomasello et al., 2012). A further problem for the individual was knowing whom to trust and how to showcase their trustworthiness on a large-group scale. In response, many groups began to fracture and fragment into smaller so-called tribal organisations (Hill & Hurtado, 2009). To distinguish themselves from other tribes, group members started to contribute toward a novel collective enterprise known as culture (Tomasello, 2019). Each culture conceived of various norms—or collective expectations—which conventionalised how every member ought to think and act, with there being an “objectively” proper and improper way to associate with one another (Elster, 1989; Fehr & Fischbacher, 2004; Tomasello, 2009). Group members were under social pressure to both follow and enforce these norms to maintain the smooth functioning of the group. Individuals displaying these cultural markers could, therefore, be trusted and were deserving of fair and equitable treatment, whereas those who did not, could not, and were not. What followed was the gradual expansion of moral concern—of what we owe to each other (Scanlon, 1998)—to include all group members, even those with whom we shared no personal history of collaboration.

In sum, the social dilemmas that often arise from living in groups can make morality seem evolutionarily unfeasible (Krebs, 2008; Sober & Wilson, 1998). But when its evolution is seen through the lens of incumbent mutualistic collaboration (with social selection against

cheaters), the emergence of moral concepts like justice and fairness seem plausible (Tomasello et al., 2012). Knowing that success during dyadic and group interactions depend on each individual playing their part, it is only right that each be endowed with the same privileges (i.e., agent-independent) and be treated not as means but as ends withal. And thus, the lineage of human morality was born.

Next, I explore the ontogenetic question of how a sense of morality develops in humans. I will argue that its roots form early in ontogeny, as evidenced in young children's moral judgments, behaviours and emotions.

2 Ontogeny

2.1 Social evaluation

The role of the assessor is first to emerge during infancy. Less than a year old, infants begin to engage in processes of social evaluation. Infants between 6- to 12-months-old, for example, prefer to interact with “helpers” over “hinderers” (Hamlin et al., 2007, 2011; Hamlin & Wynn, 2011; Kuhlmeier et al., 2003; although see Schlingloff et al., 2020), and by 20-months-old prefer unbiased helping procedures over biased ones (Surian & Margoni, 2020). Studies involving resource allocation have found infants during this period also orient towards fair distributors than unfair distributors (Burns & Sommerville, 2014; Geraci & Surian, 2011; Lucca et al., 2018; Schmidt & Sommerville, 2011; Sloane et al., 2012; Surian & Franchin, 2017a, 2017b; Ziv et al., 2021). From early on, then, infants already have certain implicit (perhaps even innate; see Wynn, 2008) expectations for how individuals should behave towards one another and recognise cooperative and prosocial people as being more suitable social partners.

As they enter the preschool years, these preferences become clearer and feature in children's own prosocial behaviours. By age 3, children allocate more of their own resources and the resources of others to helpful and generous individuals than to unhelpful and stingy

individuals (Kenward & Dahl, 2011; Olson & Spelke, 2008). They also help and share more with benefactors who have previously helped and shared with them (Dunfield & Kuhlmeier, 2010; Warneken & Tomasello, 2013). But beyond supporting “good” partners, children around this age also actively avoid “bad” partners seen behaving uncooperatively toward others (Kenward & Dahl, 2011).

A study by Vaish et al (2010), for example, had 3-year-old children witness an adult actor either physically help or harm another individual (see Helwig et al., 2001 for 3-year-olds’ responses to psychological harm). In a subsequent task, children then chose whether to assist the helpful or harmful actor or a familiar but neutral third-party observer. Children reliably helped the harmful actor less often than the neutral observer. When the actor was helpful, however, children helped her and the neutral observer equally often. Three-year-olds were similarly averse to helping the harmful actor even when she intended but failed to cause harm. Children’s social evaluations during the preschool period thus also includes directing prosocial acts and personal resources away from harmful or “meaner” individuals.

Young children are clearly skilled evaluators when those evaluations pertain to others. But these evaluations work both ways. Being as much the assessor as the assessed, children not only judge others for their cooperativeness, but also worry about how others are judging them for theirs (Tomasello, 2019). Like their ancestors before them, they become increasingly concerned with their reputations. As such, children begin to adopt a more impersonal perspective—seeing themselves through the evaluative eyes of others—and behave in ways that enhance their cooperative identities.

2.2 Self-presentation

Children’s earliest signs of self-awareness coincide with the first two years of life (see Rochat, 2009 for a review). Before 9-months-old, infants already distinguish still-images of the self from still-images of others (Rochat & Striano, 2002). Later, aged 18- to 24-months-

old, they come to recognise themselves in the mirror and become shy and embarrassed by looking away from their reflection and burying themselves in their parents' laps (Lewis, 2000; Lewis et al., 1989b). And at a similar age, they are happier to wear a sticker on their forehead (something infants famously dislike) if the adults around them are too (Rochat et al., 2012). Together, these responses suggest that infants both recognise themselves as their embodied selves, but also themselves as perceived by others. Missing at this young age, however, is an active and strategic desire to *manage* these perceptions.

Around a year later, children start engaging in more direct attempts to influence others' perceptions of the self. Three-year-olds, for example, will deliberately lie about and otherwise conceal forbidden actions from the eyesight and earshot of nearby adults (Evans & Lee, 2013; Lewis et al., 1989a; Melis et al., 2010; see also Grosse et al., 2013). On their own, the desire to lie and conceal transgressions from others is not clear evidence of reputational concern; these children could simply be trying to avoid punishment. Other studies, however, have shown that children at this age also strategically behave in ways that promote and maintain a positive impression on others. After being presented with cues of human presence (i.e., pictures of eyes), 3-year-old children share more resources with an anonymous peer than when presented with pictures of flowers (Kelsey et al., 2018). They direct their achievements more toward those who have previously seen them fail than who have previously seen them succeed (Asaba & Gweon, 2022). And telling 3-year-olds that they have a reputation for being smart increases their likelihood of cheating to fulfil this impression (Zhao et al., 2017). These findings, then, suggest that children by age 3 know that their actions are being or might be evaluated by others and go to some length to manage these evaluations.

Toward the end of the preschool period, children's concern for their public identities and the strategies used to bolster them become more elaborate and sophisticated. A study by Engelmann et al (2012), for example, found 5-year-old children were more likely to help

another child (and less likely to steal from her) while being watched by a third-party than when left alone in the room (see also Engelmann et al., 2016; Yazdi et al., 2020). Helping individuals in the presence of an audience also leads 5-year-olds to experience more positive emotions (e.g., pride) than when helping without an audience (Hepach et al., 2022). Presumably, children's heightened emotions correspond to an additional strategic motivation to enhance their reputation by helping. And after learning that their classmates had a positive opinion of them, 5-year-olds responded by cheating less in a subsequent task in order to maintain this perception (Fu et al., 2016; see also Piazza et al., 2011).

Not only do children around this age vary their prosocial acts in the company of observers, but also depending on who is observing them and how observable their behaviour is to others. From age 5, children behave more prosocially around important figures like experimenters, ingroup members, and third-parties whose cooperation could later benefit them (Engelmann et al., 2013; Misch et al., 2016; Shaw et al., 2014; Yazdi et al., 2020). If a particularly desirable social partner is presented, children between the ages of 5 and 8 will even compete against one another in order to appear as the better, more prosocial collaborative candidate—a process known as “competitive altruism” (Herrmann et al., 2019).

The same can be seen when children's actions are put on display. In a study by Leimgruber et al (2012), 5-year-old children's donations during a dictator game were made to differ in their transparency. Children allocated resources to a classmate who was either visible to the child actor or occluded, using containers that were either transparent or opaque (whose contents was only visible to the actor). Participants' donations were most generous when the recipient was visible and the containers were transparent (see also McAuliffe et al., 2020). If either or both of these factors were absent, children were notably less generous. Similarly, when warned that their individual contributions toward a sharing activity might later be displayed to the wider group, children responded by making more liberal contributions (Rapp et

al., 2019). This is even the case when the reputation of their (minimally-established) group is at stake. Five-year-old children will share more with fictitious others when their group's overall contribution is made public than when kept private (Dunham et al., 2011; Engelmann et al., 2018). By age 5, then, children are routinely concerned about others' perceptions of the self and of the group they perceive they belong to. Great lengths are taken, therefore, to actively colour the impression they make, and their group makes, on others.

2.3 Self-evaluation

Children's strategic cooperation between the ages of 3 and 5 is not moral. The focus, rather, is on personal gain and maintaining appearances. But simulating the judgements of others—looking from the outside in, as it were—is the cognitive foundation from which we begin to hold ourselves accountable to normative standards and experience negative emotions, like guilt, when we fail to live up to them (Leith & Baumeister, 1998; Nagel, 1986; Tomasello, 2019).

According to Tomasello (2019), the transition toward moral judgements in children is further supported by two additional cognitive foundations. The first foundation is a growing awareness of so-called self-other equivalence (Nagel, 1970). The second foundation is children's understanding of social norms and the knowledge that their judgements do not come from their own personal set of beliefs, but rather from something larger than themselves to which they feel a part of (Rousseau, 1762/1968). I proceed to discuss the role and outcomes of each of these foundations, in turn.

2.3.1 Second-personal morality

Seeing others as having equal value to the self, it is argued, obliges individuals to acknowledge their concerns as equivalent to one's own (Kant, 1785/1988; Tomasello, 2018, 2020). This recognition between self and other, however, is thought not to be a moral motivation in and of itself; rather, it describes an unavoidable (perhaps even unwelcome) truth of the

human condition (see Nagel, 1970). One might ignore this insight in one's behavioural decision-making, for example, but no amount of reasoning can explain it away. Though not sufficient to stoke the fires of moral sentiment, recognising that none—not even the self—occupy a privileged position is nonetheless *necessary* to urge individuals to treat one another at least to some degree impartially (Tomasello, 2016). Beholding others on a fundamentally equal plane to the self thus serves as a basis for many of our prosocial attitudes, including a sense of deservingness and fairness (Darwall, 2006).

Children's earliest sense of self-other equivalence is reflected in many of the second-personal protests they make throughout the preschool period. During joint collaborative activities in which both partners expend equal effort to obtain sought after rewards, 3-year-old children almost always share these rewards fairly (Hamann et al., 2011; Ulber et al., 2017; Warnken et al., 2011; see also Ng et al., 2011 for third-party judgments). In other studies, children of similar age have been found to wait for their partners, fulfil their partner's role when she is unable to, and ask for their partner's permission to "take leave" (Gräfenhain et al., 2009, 2013). By age 3, children give special consideration to certain others and feel inclined to treat those with whom they share a joint commitment as equals.

Importantly however, children this age expect the same kind of treatment from their partners in return. If their co-dependent suddenly becomes uncooperative and chooses to monopolise the rewards that they had earlier jointly obtained, or decides to defect and disengage, 3-year-olds will protest against these actions using normative language (Hamann et al., 2011; Kachel et al., 2018). The most straightforward interpretation of these findings is that 3-year-old children recognise that if a commitment is made, both parties should uphold their end of the bargain to the best of their abilities. And where equal effort is invested, both should be equally rewarded. Tellingly, if unequal effort is contributed, young children often depart from equality and divide pay-outs according to workload (Baumard et al., 2012; Hamann et al., 2014;

Hardecker et al., 2019; Kanngiesser & Warneken, 2012; Melis et al., 2013; although see Schäfer et al., 2015 for cross-cultural differences in meritocratic sharing). Children's protests here are thus not strategic. It is only when their rights as co-equal partners are infringed upon do they protest (e.g., Hamann et al., 2011). Their objections are thus not aimed at coercing their partners into doing all of the work or to give them the lion's share of the reward, but instead to have them each relate to one another on equal terms and given the respect to which both are entitled (Darwall, 1977; Mussweiler, 2003).

Another relevant source of evidence comes from children's responses to so-called procedural fairness. Here, studies show children are willing to receive less than others when the allocation procedure is believed to be fair, like a coin flip (Shaw & Olson, 2014). But if the procedural apparatus is found to favour some players more than others (an asymmetrically weighted "wheel of fortune", for example), children will actively change the rules of the game to promote fair play or use an alternative unbiased apparatus instead (Grocke et al., 2015, 2019; Shaw & Olson, 2014). Preschoolers are also more willing to accept less than others if included in the group's decision-making process than when ignored (Grocke et al., 2018). These findings, again, suggest that children's motivation is not necessarily to garner resources for themselves, but to ensure all parties, including themselves, are treated impartially and respectfully (Honneth, 1995; Tyler, 2000).

This is not to say that preschool children always treat others as equals; that is simply not true. Outside of collaboration, their treatment of others is often less than fair. Despite knowing that they should share with peers in various windfall situations, young children quite often choose not to and do not feel bad about it until around 6- to 8-years-old (Blake & McAuliffe, 2011; Blake et al., 2015; Fehr et al., 2008; Lane & Coon, 1972; Rochat et al., 2009; Shaw & Olson, 2012; Smith et al., 2013; see Blake et al., 2014 for a review). Moreover, if 3-year-olds simply stumble upon an unequal bounty, or work side-by-side to obtain their unequal rewards

separately, the advantaged child hardly ever shares with her disadvantaged peer (Hamann et al., 2011; see also Corbit et al., 2017 for similar findings with older children). Children's sense of self-other equivalence at this early age, then, seems reserved for those (and only those) with whom they cooperate for mutual benefit (Engelmann & Tomasello, 2019). Nonetheless, this developmental process of respecting and treating partners as equals (and demanding such treatment from partners in return) marks a significant milestone from which a kind of second-personal morality develops (Darwall, 2006; Korsgaard, 1996; Scanlon, 2008).

2.3.2 “Objective” morality

The moral concern young children direct to a collaborative partner is as genuine as it is parochial. To arrive at a more universal form of morality requires a larger social context, one that contains norms and institutions (Tomasello, 2019). Piaget (1932) argued that children initially defer to social norms because they respect the adults that tout them. However, as children age into the preschool years they begin to show signs of understanding social norms not as being a particular individual's preferences or directives but rather as expressing universally-applied, binding group agreements to which they subscribe to and measure themselves against (Bicchieri, 2016; Rakoczy & Schmidt, 2013; Searle, 1995, 2010). What follows in children is a gradual transition from a second-personal morality—between “you” and “me” as equally-deserving partners—to a scaled up norm-based one, wherein impartial standards of behavior are mutually understood to apply to all individuals, all of the time (Krebs, 2008; Lewis, 1969; Tomasello, 2018).

Consider, firstly, children's responses to third-party moral transgressions. If a transgressor, for example, attempts to destroy or steal another's property, 3-year-olds will object, intervene and tattle on the victim's behalf despite having nothing to gain for themselves (Ingram & Bering, 2010; Riedl et al., 2015; Rossano et al., 2011; Schmidt et al., 2012; Vaish et al., 2011). Because the child is unaffected, their protests are not second-personal—how “you”

are treating “me”—but focus, instead, on the lack of conformity about how “we” treat others (see Schmidt & Tomasello, 2012). The same can be seen, albeit with less emotion, with violations of convention (Hardecker et al., 2016; Rakoczy et al., 2008, 2010; Schmidt et al., 2012; Smetana, 1981; Turiel, 1983; Wyman et al., 2009; see also Yucel et al., 2020). Importantly, during these third-party interventions, 3-year-olds quite often use generic normative language (e.g., “You can’t do that”, Köymen et al., 2014; Searle, 2001), something that is largely absent in younger children (Rakoczy et al., 2008).

Turning to their own behaviour, children’s prosocial acts at this age also take a normative turn. Infants routinely help others with their instrumental needs and tend to do so indiscriminately out of sympathy (see Tomasello, 2018 for a review). During preschool, however, children begin to account for what is expected of them—what they ought/should/must do—from the perspective of the wider moral community. Three-year-olds, for example, routinely help and later check up on individuals who are justifiably upset (Hepach et al., 2013; Leslie et al., 2006) or who are especially needy (Paulus, 2020; although see Sierksma & Shutts, 2021). Where they cannot provide assistance themselves, 3-year-olds will even motivate others to help the needy in their place (Karasewich et al., 2019; Paulus et al., 2017). And by age 5, children direct more resources to “poorer” targets who are in need of resources (Malti et al., 2016; Paulus, 2014; Sigelman & Waitzman, 1991).

Importantly, these findings show not only that preschoolers know when they should help, share and care for others, but also when and with whom they should not. This is because in these same studies, children also chose to selectively withhold help from individuals who overreacted to minor inconveniences, who were already “wealthy” with resources, and who were earlier seen behaving antisocially toward others (Hepach et al., 2013; Paulus, 2014; Vaish et al., 2010). These judgements of whether or not to provide assistance are not second-personal, but are rather based on and backed by group agreement; how “we” do things. I might feel

sympathy for you, but “we” do not usually help those who do not need or deserve it. I am therefore not obliged to help. Children’s helping, sharing and caring thus become more selective as they begin to align with, respond to, and participate in social norms (Tomasello, 2018).

Children, of course, continue to possess selfish motives which will be, at least occasionally, acted upon. So too remains their capacity to act strategically in order to manipulate and positively influence the impression made on others. But with these foundations present, preschool children cannot help but reverse roles and begin to hold themselves accountable to the same shared “objective” standards that they hold all others to, which sometimes results in feelings of guilt whenever these standards are not met. These insights, then, mark a gradual departure from behaviours made to *look* moral (see *Self-presentation*) to behaviours that *are* moral.

2.4 Guilt

Guilt is an aversive emotional response with two prosocial functions: to evoke sympathy for the hurt individual and to instil regret in whomever caused it (Hoffman, 1982; Leary, 1996; Regan, 1971). Feelings of guilt thus compel transgressors to accept responsibility for their actions (Hoffman, 2000; Schlenker, 1980), and crucially, motivates them to repair the damage done (Baumeister et al., 1994; Keltner, 1995; Lindsay-Hartz et al., 1995). In addition to experiencing guilt, transgressors also feel compelled to express their guilt overtly. These displays indicate to others that the transgressor is also hurting (Keltner & Anderson, 2000; Nelissen & Zeelenberg, 2009) and is not usually the type to cause others harm (McGraw, 1987). By expressing remorse, guilty perpetrators can thus strategically forestall punishment from others by evoking sympathy in those affected (Keltner & Anderson, 2000; Leary et al., 1996).

Guilt displays, however, serve another vital function. To convey remorse is to show to others one’s awareness of and desire to conform to the normative standards of the wider moral community despite the breach (Tomasello, 2016; Vaish, 2018). As such, those who express

guilt are seen by others as more trustworthy, self-policing and dedicated to conducting themselves better in future (Castelfranchi & Poggi, 1990; Keltner et al., 1997; McCullough et al., 1997). Acts of guilt, then, go beyond any strategic concern for self-presentation. They represent, instead, public acknowledgements of one's lapse of judgement according to "our" shared values for how "we" treat others. To ignore this judgement and conceal one's guilt is to renounce one's identification with "we" (Tomasello, 2019). Guilt and other self-evaluative emotions are thus an internalised version of the kind of moral judgments that individuals make of those who violate norms (Prinz, 2007; Tomasello & Vaish, 2013).

Young children are no strangers to feelings of guilt and also recognise it in others. By ages 2 and 3, children accept responsibility for their transgressions (e.g., after breaking another's toy) and attempt to repair the damage done (Barrett et al., 1993; Cole et al., 1992; Drummond et al., 2017; Kochanska et al., 1995, 2002; Mascolo & Fischer, 2007; Zahn-Waxler et al., 1992). Children at this age, but not younger, are particularly eager to provide the help themselves, which suggests they experience more than just sympathy for the victim; they wish to be the ones to set things right (Vaish et al., 2016). If someone else helps their victim, for instance, children's internal arousal (via pupil dilation) remains high (Hepach et al., 2017a).

When faced with others' guilt displays, one line of research has been to focus on children's evaluations of apologies, which are a common stand-in for guilt. Across both first- and third-party transgressions, children from age 4 respond better to those whose transgressions are accompanied by apologies than those without. Specifically, children at this age are more likely to interact with (Smith & Harris, 2012; Vaish et al., 2011), evaluate more positively (Darby & Schlenker, 1982, 1989), and forgive (Oostenbroek & Vaish, 2019) transgressors who apologise for their wrongdoings than transgressors who do not. They also regard apologetic transgressors as being more "just" (Irwin & Moore, 1971; Wellman et al., 1979), and attribute improved

feelings to victims (Smith et al., 2010; Smith & Harris, 2012; although see Drell & Jaswal, 2016).

Apologies, however, are highly routinised speech acts with parents often encouraging their children to apologise when they may not necessarily feel sorry (Schleien et al., 2010; Smith et al., 2017). Thus, children's positive evaluations at this young age may simply correspond to reinforced phrases such as "sorry" without, necessarily, due consideration for the transgressor's remorse. When explicit references to apologies are removed (e.g., "I didn't mean to do that. It's my fault"), 4-year-olds often fail to distinguish between the remorseful and unremorseful transgressor; only 5-year-olds are able to draw the appropriate inferences (Oostenbroek & Vaish, 2019; Vaish et al., 2011). These findings suggest that, by age 4, children understand that apologies are a normative response post-wrongdoing, but their recognition of the prosocial emotions that apologies represent develops about a year later.

The "happy victimiser" phenomenon provides further evidence that children's early moral emotion attributions are reliant on overt displays of remorse. Preschool children, for example, expect unapologetic transgressors to feel good about their transgressions (i.e., the happy victimiser), whereas apologetic transgressors are expected to feel bad (Smith et al., 2010). By contrast, adults and older children attribute negative emotions to wrongdoers regardless of whether or not an explicit apology is made (Krettenauer et al., 2008; Nunner-Winkler & Sodian, 1988). Although methodological changes to interview procedures (Keller et al., 2003) and response formats (Gummerum et al., 2016) can attenuate the "happy victimiser" attributions often made by young children, their moral judgements nonetheless benefit from conventional cues of remorse. Certainly by age 3, then, children experience and express guilt for their wrongdoings. Identifying the guilt in others, however, develops somewhat later between the ages of 4 and 5.

Though a distinct motivator of prosocial behaviour in children, guilt is ultimately a retrospective judgement. We feel guilty for actions that have already taken place. The opposite of this process is what the philosopher Korsgaard (1996) calls “reflective endorsement”, a process wherein individuals reflect on their actions and the possible consequences *before* acting upon them (e.g., “Is this a good thing to do, or to want?”). This constitutes a new form of self-regulation in the context of moral judgements, with individuals not only feeling guilty for spent transgressions but also being less likely to perform them in the first place. Together these processes help motivate individuals to act with the interests of others in mind—that is, morally—and allows them to be held responsible for their actions when they do not.

2.5 Moral justification

Moral acts are not judged solely according to *what* happened (i.e., the outcome), but also *why* it happened (i.e., the underlying reason). When evaluating morally-relevant acts, individuals thus pay close attention to the justifications for a particular action. Intuitionists such as Haidt (2001, 2012) have argued that moral judgements derive from intuitive and emotional insights and that verbal justifications are but post-hoc rationalisations intended to convince and impress others. This may be true, but the reasons we give also serve another purpose. Explaining why we chose one course of action over another demonstrates to others, and to ourselves, our continued identification with and commitment to the group and its value system (Li & Tomasello, 2021; Tomasello, 2019).

Research into children’s collaborative reasoning shows that already by age 3, children comprehend and distinguish between the quality of others’ justifications. During various reasoning tasks, preschoolers revise their beliefs in response to and prefer to interact with partners who provide strong arguments than weak, circular ones (Castelain et al., 2018; Corriveau & Kurkul, 2014; Koenig, 2012; Langenhoff et al., 2022; Mercier et al., 2014; Rakoczy et al., 2022; Schleihauf et al., 2022). Children around this age also prefer to confide in “reasonable”

partners who submit themselves to good reasons but not to bad reasons (Domberg et al., 2019). In these studies, however, children were evaluating whether or not the agent's reasons made her a reliable or credible informant, not whether she was a moral individual.

How we decide what makes a “good” or bad” justification in the moral domain is decided, or so it is argued, by a hierarchy of values that are shared and practiced by one's wider moral community (Krebs, 2008; Scanlon, 1998). Imagine an individual reneges on their promise to tidy up in order to help someone in need. This is a stereotypically valid or “good” reason, for helping needy others is mutually understood to be more important—it sits higher in the hierarchy—than fulfilling a promissory obligation. Poor reasons for poor behaviour, on the other hand, like forgoing one's obligation to tidy due to feeling unwell after last night's festivities, ordinarily opens oneself up to criticism, punishment and maybe even social ostracism.

Evidence for young children's understanding of their particular culture's value system is first seen in the common group assumptions they make during moral reasoning tasks. Children during the preschool years are quite good at knowing what is shared in common ground with their partners, and what is not (Clark, 1996; Köymen et al., 2016; Liebal et al., 2013; see Köymen & Tomasello, 2020 for a review). A study by Köymen, Rosenbaum and Tomasello (2014) found 3-year-old, and especially 5-year-old, dyads spent longer discussing where unconventional objects (e.g., a piano) should feature in a zoo compared to more conventional items (e.g., animals) because it was not commonly understood where these objects should be placed.

Focusing on the moral domain, Mammen et al (2018) had 3- and 5-year-old dyads reason about different norm violations. From each pair, one child (the target child) was presented with a story which contained either a moral norm violation (e.g., stealing) or conventional norm violation (e.g., placing a toy in the incorrect box); whereas her partner remained naïve. Dyads were then presented with a single marble and were asked to collectively decide whether or not

the transgressor should receive it. Of interest were the reasons that the target child produced, which were shown to vary depending on the type of violation that they had earlier witnessed. When justifying withholding the marble from the conventional transgressor, the target child referred to the act *and* the corresponding rule violation (“Because in Mia’s kindergarten, you must not put yellow cars in the green box, but only in the yellow one” p. 256). For the moral transgressor, however, she referred only to the act itself (e.g., “Because she stole”), with the underlying rule assumed to already be in their moral common ground (e.g., “One should not steal”). By responding in this way, 3- and 5-year-old children showed that they were not only aware of the values of their culture, but also whom these values apply to (Killen, 1991; Smetana, 1981, 2006; Turiel, 1983). Conventional rules were understood to be context-specific and thus their partner would likely be ignorant to them. Better to explain the situation. Moral norms, in contrast, were understood to apply universally to anyone identifying as part of “we” the moral community. Why waste words, then, stating the obvious to one of “us”.

Although children begin to dial in to their particular culture’s value system at the beginning of preschool, their understanding for what makes an (un)acceptable justification based on these values seems to develop somewhat later. In a study by Kanngiesser et al (2021), an experimenter elicited a promise from 3- and 5-year-olds to continue cleaning in her absence. After she left, however, the child was enticed to renege on her promise either for a “good” prosocial reason (i.e., to help a needy individual) or for a “bad” selfish reason (i.e., to play a more exciting game). When they eventually broke their cleaning commitment, 5-year-olds’ justifications appropriately referred to normative values in the prosocial condition (e.g., “I had to help”) but not in the selfish condition, whereas 3-year-olds mostly referenced salient events throughout (e.g., “It broke”). In Study 2, children were shown the same promise-breaking paradigm but in a third-party context. Five-year-olds considered it better if the promise-breaker reneged on her promise for the prosocial reason than for the selfish reason. Three-year-olds, on

the other hand, showed the reverse pattern of favouring promise-breaking under selfish conditions.

More recently, Li et al (2022) investigated how 3- and 5-year-olds would respond when they themselves were the recipients of a broken promise. Children were introduced to puppets who promised to show them an interesting toy but later failed to fulfil this promise. Defection was followed by either a “good” reason (e.g., they had to help a friend with homework), a “bad” reason (e.g., they wanted to watch TV instead), or no reason being given. Both ages judged the promise-breaking puppet more leniently following a good justification than following a bad or no justification (both of which were evaluated equally poorly). When asked to justify their judgements, 5-year-olds also used normative language following the prosocial reason (e.g., “He should help his friend”), something which was mostly missing among 3-year-olds. Certainly by age 5, then, children are well-versed in their culture’s ordering of moral values (Mammen et al., 2018, 2019) and apply this knowledge in an agent-neutral (rather than self-interested) way (Kanngiesser et al., 2021; Li et al., 2022). Whether a moral offence is caused by them (i.e., perpetrator), witnessed by them (i.e., third-party) or done to them (i.e., victim), children at this age show an understanding of and preference for “good” reasons that are grounded in cultural values over “bad” reasons that are not.

3 Cultural variation

Without doubt, the development of morality during childhood is shaped within cultural contexts (e.g., Kruger & Tomasello, 1996). Different cultures have different social norms that are practiced by the group. The developmental pattern described above is thus one that likely varies ontogenetically from culture to culture (Greenfield et al., 2003; Henrich, 2020).

Cross-cultural research has documented several differences in the ways individuals engage in and evaluate moral behaviour. For example, adults from so-called “opacity of mind” cultures (e.g., Fiji) largely neglect intent-based information in their moral judgements, whereas

those living in WEIRD (Western, Educated, Industrialised, Rich, Democratic, see Henrich et al., 2010) societies emphasise it (Barrett et al., 2016; McNamara et al., 2019). Moral psychologists have also identified different cultures as having distinct hierarchies of moral values which affect how individuals belonging to these groups reason about and give reasons for morally-relevant acts (Haidt, 2012; Schweder, 1991).

Exploring its emergence in children, research has found little cross-cultural variability among infant populations, likely because they have yet to integrate cultural norms into their social acts (Callaghan et al., 2011). Rather, variation in moral development appears to coincide with the preschool years. The moral judgements made by 3- to 5-year-old children from collectivist cultures (e.g., China, India), for example, are influenced more by an adult's testimony and behaviour than for children from individualistic cultures (Blake et al., 2016; Li et al., 2019). By age 5, children living in cultures which promote "face-saving" values (e.g., Indonesia, Malaysia) often direct fewer prosocial acts toward a distressed adult than cultures without these values (e.g., Germany, Israel) because of the perceived risk that the adult might lose face (Trommsdorff et al., 2007; see also House et al., 2013, 2020). And despite norm enforcement being a cultural universal, recent evidence suggests that children from around this age enforce norms in culturally variable ways (Gampe & Daum, 2018; Kanngiesser et al., 2022).

This variation in culturally-informed moral reasoning continues to develop into later childhood. During moral dilemma tasks, school-age children from horizontal (emphasising equality) collectivist cultures (e.g., Spain) are increasingly likely to consider the impact of their decision-making on all parties involved, whereas children from vertical (emphasising hierarchy) collectivist cultures (e.g., Russia) do not (López-Pérez et al., 2015). Thus, what young children share as moral agents may be expressed, appraised and justified differently depending on their cultural affiliations (Shweder et al., 1987).

4 Summary of the developmental literature

Children's moral development is a complicated, varying and gradual process. But by the end of preschool, children are for the most part moral agents. Because they cannot escape their own watchful eye, they hold themselves accountable to the same normative standards that they hold others to, act in accordance with these standards, and feel guilty and compelled to justify their actions whenever they fall short of these standards. From this period onward, then, children act not only out of sympathy or strategic concern (although these motivations certainly persist), but because they feel that they ought to and that it would be wrong not to. And since these standards are "objective" and apply universally, how children know they must conduct themselves is also how they know others must conduct themselves, with each having the right to call out the other whenever either gets it wrong. Though there are still many further developments to come (e.g., Blake et al., 2014), preschoolers have started down a new path, one that is frequently "fraught with ought" (Sellars, 1963).

5 Focus of the thesis

Two main points summarise the introduction to this thesis. First, children's agent-neutral, norm-based morality is rooted in the preschool period between the ages of 3 and 5. Second, as children age into the later preschool years (circa. 5-years-old) they begin to ground their moral judgements and evaluate others' based on their growing knowledge of the group's common values. It is at this point that moral justifications are both given and responded to appropriately. The focus of the present thesis was to extend the evidence for these two developmental milestones.

As discussed above, 3- to 5-year-old children know what is expected of them when helping others and feel obliged to help only those who are genuinely in need (e.g., Hepach et al., 2013). This leaves unclear whether children at this age feel obligated to apply these same normative standards to regulate their own requests for help. As adults, we recognise that

making an unjustified request (i.e., requesting without genuine need) is “objectively” wrong and results in the experience and expression of negative emotions like guilt (Milgram & Sabini, 1978). Whether the same is true for young children was the question addressed in Chapter 2.

Despite what some consider to be the capstone of preschool children’s moral development (Tomasello, 2019), children’s use and understanding of moral justification has received limited empirical attention. For my part, I focused on their comprehension of others’ moral reasons for third-party transgressions to tap into their agent-neutral (rather than self-interested) application of moral norms. Children from age 5 know “good” from “bad” reasons for moral offences (e.g., Kanngiesser et al., 2021). An open question, however, is *when* these reasons become necessary. Chapter 3 presents two studies which investigated whether 4- and 5-year-old children know when moral justifications ought to be given in the context of intent-based and belief-based transgressions. Similarly unexplored is young children’s understanding of the *boundaries* of moral justifications. Chapter 4 investigated whether 5- and 6-year-old children recognise that a “good” reason (e.g., “it slipped from my hands”) is less acceptable if used repeatedly (“it slipped from my hands, again”) for the same moral offence.

Finally, Chapter 5 summarises the findings contained herein this thesis, reviews them against the background literature and discusses future directions.

Chapter Two

Preschool children's evaluations of their own unjustified requests

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Introduction

Asking for help from others is commonplace because of our interdependence on one another. These requests, however, are subject to normative standards. Requesters should view their requests through the lens of others and account for their fairness. Making an *unjustified* request—a costly request without an appropriate justification (e.g., requesting a seat on a subway without providing a good reason)—induces negative emotions, such as guilt, because we recognise such a request to be unfair to the requestee (Milgram & Sabini, 1978).

During the preschool years, children come to understand what is expected of them when helping others. For example, 3-year-olds selectively avoid assisting those who exaggerate minor inconveniences (Hepach et al., 2013) and help needy individuals over non-needy individuals (Paulus, 2020). A high cost of helping and low need from the requester also reduces school-aged children's perceived obligation to help (Sierksma et al., 2014). Thus, children account for the justifiedness or fairness of others' help-seeking behaviours. At what age children understand their own requests to be (un)fair, however, remains unclear.

Children are well equipped to make requests before they can adopt their interactant's perspective. Toddlers aged 1 to 2 years will request (Ervin-Tripp & Gordon, 1986), for instance, but these requests are limited to what they want without consideration for whether they ought to request. From age 3, however, children use “second-personal protests” to express unfairness (Kachel et al., 2018). When two children invest equal effort into a collaborative task and one receives more reward than the other, the disadvantaged child demands a fair share

(Warneken et al., 2011) and the advantaged child shares the spoils equally (Hamann et al., 2011; Ulber et al., 2017).

However, to our knowledge, no research has investigated how young children respond to unfair advantages that they themselves have caused, such as requesting something one does not need from a needy individual. It is well documented that children display guilt after having caused accidental harm to others by offering to repair the damage done (e.g., Drummond et al., 2017). However, individuals often intentionally act on their own self-interests. In such selfish acts, if children are aware that their actions will be unfair to others, negative emotional responses should occur *prior* to any harm.

In this preregistered study, we investigated how 3- and 5-year-old children evaluated their own unjustified requests. Children were encouraged to request stickers from an experimenter. Across four conditions, we manipulated the fairness of the request by manipulating whether children needed the sticker they were requesting and whether the experimenter needed the sticker being requested. As children walked toward the experimenter (who was sitting at a distance), we observed children's negative emotional responses prior to their requests by measuring changes in their posture using depth sensor imaging technology (Kinect; Microsoft, Redmond, WA, USA) (Hepach et al., 2015). Elevated and lowered body posture are established indicators of positive and negative emotional experiences in adults and children (Hepach et al., 2017b; Lewis et al., 1992; Montepare et al., 1987; von Suchodoletz & Hepach, 2021). We predicted that 3- and 5-year-olds would present lowered upper-body posture when making an *unjustified request* (i.e., requesting a sticker that they did not need but that the experimenter did need). In contrast, we predicted no change in upper-body posture when the experimenter had no need for the requested sticker irrespective of the child's needs. To identify whether children's postural depression manifested only in the upper body or body-wide, we also analysed children's hip height (lower body) separately (Hepach et al., 2017b). We selected these

age groups because 3-year-olds acknowledge the needs and rights of their partners and feel obliged to treat them fairly (Hamann et al., 2011). Children's understanding of fairness, however, continues to develop into the later preschool years (Paulus et al., 2013), as does their ability to take the perspectives of others (Wellman et al., 2001) and their concern to appear prosocial (Engelmann & Rapp, 2018).

To validate this novel measure of posture change as a negative emotional response, we analysed the latency of children's requests, their hesitation when executing the requests, and the directness of their requests. Because children are slower to respond to conflicting events that risk influencing how they are perceived by others (Haun & Tomasello, 2011), we predicted that children would display greater latency and hesitation when asking for a sticker they did not need but that the experimenter did need (*unjustified request*). In contrast, both age groups were anticipated to respond more quickly and to hesitate less when the experimenter did not need the sticker irrespective of the child's needs. We did not predict any differences between age groups except that 5-year-olds might rely on indirect verbal strategies more often than 3-year-olds, especially when making unjustified appeals (Ervin-Tripp & Gordon, 1986). Speakers often produce indirect requests (e.g., "Are you free?") before making direct ones (e.g., "Can you help me then?") to reduce imposition and the likelihood of rejection (Schegloff, 2007). Thus, we explored whether children would produce indirect requests when those requests were unfair.

Method

The procedure, hypotheses, sample size, and statistical analyses were preregistered (<https://osf.io/6twzu>). Any deviation from the preregistration is outlined.

Participants

In total, 48 3-year-old children ($M = 3;7$ [years;months], $Range = 3;6-4;0$, 22 girls) and 35 5-year-old children ($M = 5;5$, $Range = 5;0-6;0$, 12 girls) participated in the study. Our

preregistered sample size was 96 children (48 in each age group); however, testing needed to conclude prematurely due to the COVID-19 pandemic. One additional 5-year-old was excluded due to not finishing the task. Each child experienced all conditions. Children were native speakers of English living in northwest England.

Materials

Children were required to place stickers of different shapes (circles, stars, squares, and triangles) on a worksheet with four columns (one for each shape). At the left of these columns were three faces that expressed positive emotion in ascending order, with the happiest face indicating that the column was complete.

Procedure

The study took place in a lab. Caregivers could choose whether to be present in the testing room. If they chose to be present, they were asked to act distracted and to not interact with their children. Children received a standardised warm-up in which they coloured for 5 to 10 min to familiarise themselves to Experimenters 1 and 2 (E1 and E2), who asked some informal questions (e.g., children's favourite colour). Then, E1 suggested playing another game and instructed E2 to sit at another table (with the Kinect) approximately 4-m away. E1 said that he left the materials for the new game on E2's table and asked the child to retrieve them. This resulted in the child travelling between the two tables six times to obtain a baseline measure of the child's neutral posture.

E1 told the child and E2 that they had the same worksheet and needed to fill all four columns with the corresponding stickers. In the main trial, the *unjustified* trial, both the child and E2 had three stickers each; the child did not need an additional sticker, and E2 had none to spare (*Child no need–E2 need*). Once the child had placed his or her three stickers, E1 "ticked" the column to indicate that it was complete. E1 then asked E2 whether she had any spare stickers and repeated her response to the child ("She hasn't got any spare stickers"). Next, E1

encouraged the child to request a sticker from E2 ("Your sheet would look extra special"). E1 used three successive prompts ("Why don't you walk over and ask her?"; "Sure you don't want to ask her?"; and "I think it's okay to ask her"), with 2 to 3 seconds between each if more than one was used (see Supplementary Materials A for the percentage of children who heard each prompt). This dialogue between the child and E1 was always whispered so that the child appeared to be responsible for the request from E2's perspective. If the child requested the sticker, E2 passively fulfilled the request, saying "There you go" with a neutral expression. If the child did not request, E1 progressed to the next trial/column.

The procedure in the following trials was identical; only the allocation of stickers differed. In the *Child need–E2 no need* trial, the child had two stickers and E2 had four stickers. In the *Child need–E2 need* trial, the child had two stickers and E2 had three stickers. In the *Child no need–E2 no need* trial, the child had three stickers and E2 had four stickers. The order of trials and the type of stickers used in each trial were randomised.

Coding

Posture data. Children's posture was measured through the Kinect, a motion sensing camera that supplies an RGB image and calculates the distance between the child and the device by estimating the child's skeletal joints (e.g., the chest's centre) as three-dimensional coordinates on *x-y-z*-axes. Posture data processing followed a previous protocol (Hepach et al., 2017b). The distance between the child and the Kinect was divided into 20 time-distance bins. Following the preregistered dropout criteria, bins containing too few data points (5 in total) were excluded from subsequent posture analysis (see Supplementary Materials B). This resulted in 15 time-distance bins per trial. The Kinect was connected to a laptop running MATLAB (Version 8.2.0.701; R2013b) and the Image Acquisition Toolbox (R2013b) (MathWorks, Natick, MA, USA). The *y* coordinate (height) at the chest's centre was used to estimate any changes in the child's upper-body posture (see Appendix A). For the baseline, the walking

sequences toward the Kinect were averaged to result in one overall baseline posture reading. The averaged baseline reading for each child was then subtracted from the data collected in each bin within each trial. For the source code for posture scripts, see <https://github.com/rhepach/Kinect>.

Behavioural data. For hesitation, children were coded as hesitant if they displayed any of the following during the request (see Supplementary Materials C for the coding scheme and scoring):

- Looking toward E1 or their caregiver for reassurance/guidance
- Walking in a stuttered fashion
- Pondering over making the request (≥ 2 seconds)

For latency, we calculated the time it took children to undertake their requests (in seconds) from the onset of E1's initial prompt to when children began communicating their request to E2 through speaking and/or gesturing. Thus, longer latencies reflect the use of additional prompts from E1 and/or children approaching E2 at a slower pace.

Finally, as an exploratory analysis, we coded children's requests for their directness. Direct requests involved nonverbal gestures (e.g., pointing at the requested object) and verbal requests that asked for the sticker (e.g., "I want that sticker"). Indirect requests involved hinting without directly asking for the sticker (e.g., "You have got lovely stickers"). If children produced an indirect request but followed up with a direct one (e.g., "You've got lovely stickers. I want one"), these children were coded as direct because their appeal for the object was made clear.

A second coder, who was blind to the study's predictions, coded 24% of the data (20 children) for hesitation and directness. The agreement levels were $\kappa = .79$ and $\kappa = .97$, respectively.

Results

The data and script for all analyses can be accessed at the Open Science Framework (<https://osf.io/z9yvm>).

Posture

There was no posture data in 16 (4.8%) of 332 trials because the Kinect failed to accurately estimate children's body movements or children refused to request. To analyse the changes in children's upper-body posture, we fitted General Linear Mixed Models (GLMMs) with Gaussian error distribution. The unit of analysis was each time-distance bin (as children walked toward the Kinect). The response variable was children's change in chest height (from baseline) in each time-distance bin. The full model included predictors of age (3 or 5 years), child's needs (need or no need), E2's needs (need or no need), time-distance (1-15), their four-way interaction, the control predictors of trial order (1-4), sticker type (triangle, star, square, or circle), gender, and the random intercept of child as well as random slopes for order and distance (nested in child). In the preregistration, we did not explicitly list these random slopes in the model for posture analysis. However, the inclusion of these random slopes is consistent with previously established protocols (Hepach et al., 2017b). The null model included only the control predictors and random effects. The full model improved the fit ($\chi^2 = 100.42$, $df = 15$, $p < .001$). The four-way interaction between age, child's needs, E2's needs, and time-distance was not significant ($\chi^2 = 0.44$, $df = 1$, $p = .505$). The reduced model without this four-way interaction revealed two significant three-way interactions:

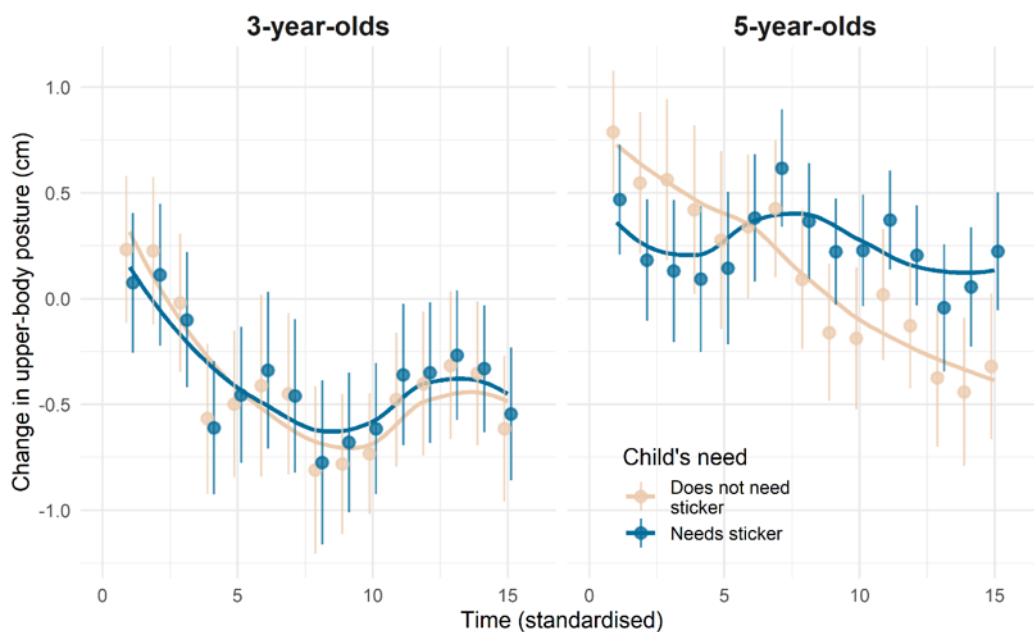
- The first was between age, child's needs, and time-distance ($\chi^2 = 4.22$, $df = 1$, $p = .040$).

When requesting a sticker they did not need, the upper-body posture of 5-year-olds decreased over the course of the request (i.e., as they neared E2/Kinect; see Figure 2.1, top panel). No change in 5-year-olds' chest height was found over time when requesting

a sticker they needed. Three-year-olds' upper-body posture followed a similarly negative trajectory across time whether they needed the sticker or not.

- The second was between age, child's needs, and E2's needs (henceforth *three-way interaction*) ($\chi^2 = 15.90$, $df = 1$, $p < .001$). When requesting a sticker they did not need, the upper-body posture of 3-year-olds decreased more when E2 needed the sticker than when she did not need the sticker (see Figure 2.1, bottom panel). In contrast, no change from baseline was found in 3-year-olds' upper-body posture when requesting a sticker they needed. No significant change in chest height, as compared with baseline, was observed in 5-year-olds.

To observe whether any changes in upper-body posture reflected an overall change in body movement (e.g., stooping), the y coordinate at the hip's centre was also analysed. Using the same analysis revealed a similar pattern; changes to 3-year-olds' chest height was an effect of their bodies as a whole being more depressed (see Supplementary Materials D).



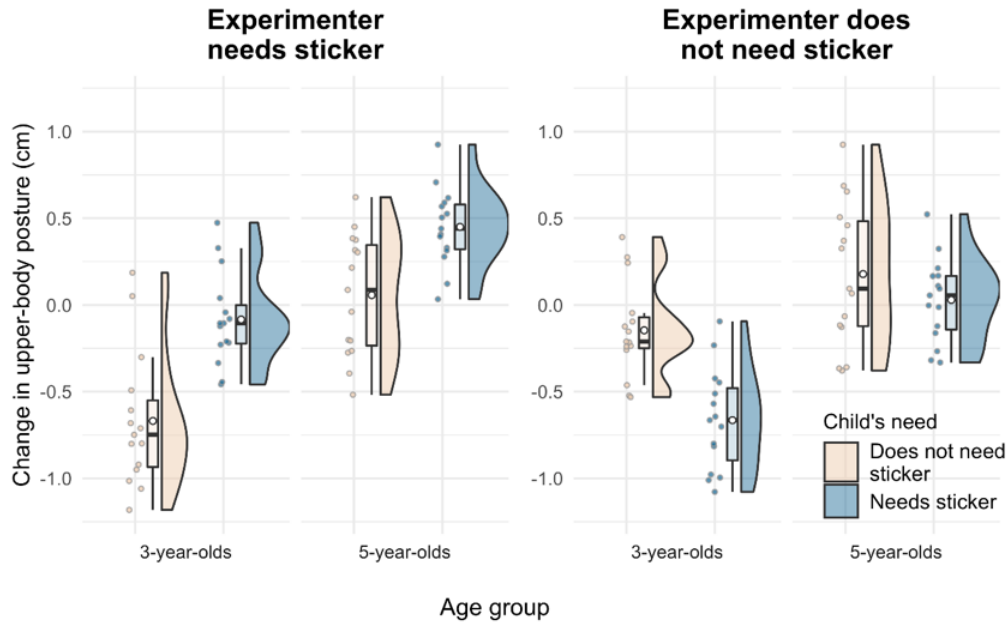


Figure 2.1: Changes in children's upper-body posture.

(Top) Change in children's chest height across time–distance, age group, and the child's need for the stickers. Dots represent the mean chest height for each second of the request sequence (as children walked toward the Kinect). Error bars show standard errors. (Bottom) Change in children's chest height by age group and the child's and experimenter's need for the stickers. For each grouping, coloured dots show the individual data points. In the boxplots, the bold black lines show the median and the white dots show the mean. Curves represent the probability distribution of the data.

Latency

The 321 of 332 (96.7%) trials in which children requested were included in the analysis. We used GLMM with Gaussian error distribution. The unit of analysis was each trial. The response variable was the latency of children's requests (in seconds) in each trial. The full model included the predictors of age, child's needs, E2's needs, their three-way interaction, and the control predictors of trial order, sticker type, gender, and the random intercept of child. The null model included only control predictors and the random intercept. The full model improved the fit ($\chi^2 = 89.80$, $df = 7$, $p < .001$). Neither the three-way interaction ($\chi^2 = 0.03$, $df = 1$, $p = .855$) nor the two-way interactions ($\chi^2 < 2.21$, $dfs = 1$, $ps > .138$) were significant. The reduced model without interaction terms revealed significant main effects of child's needs ($\chi^2 = 6.70$, $df = 1$, $p = .010$), E2's needs ($\chi^2 = 71.44$, $df = 1$, $p < .001$), age ($\chi^2 = 11.45$, $df = 1$, $p =$

.001), and trial order ($\chi^2 = 44.42$, $df = 1$, $p < .001$). When children needed the sticker, they were faster to request than when they did not need the sticker (see Figure 2.2). When E2 needed the sticker, children were slower to request than when E2 did not need the sticker. The 5-year-olds were faster to request than the 3-year-olds. Children became faster to request in later trials.

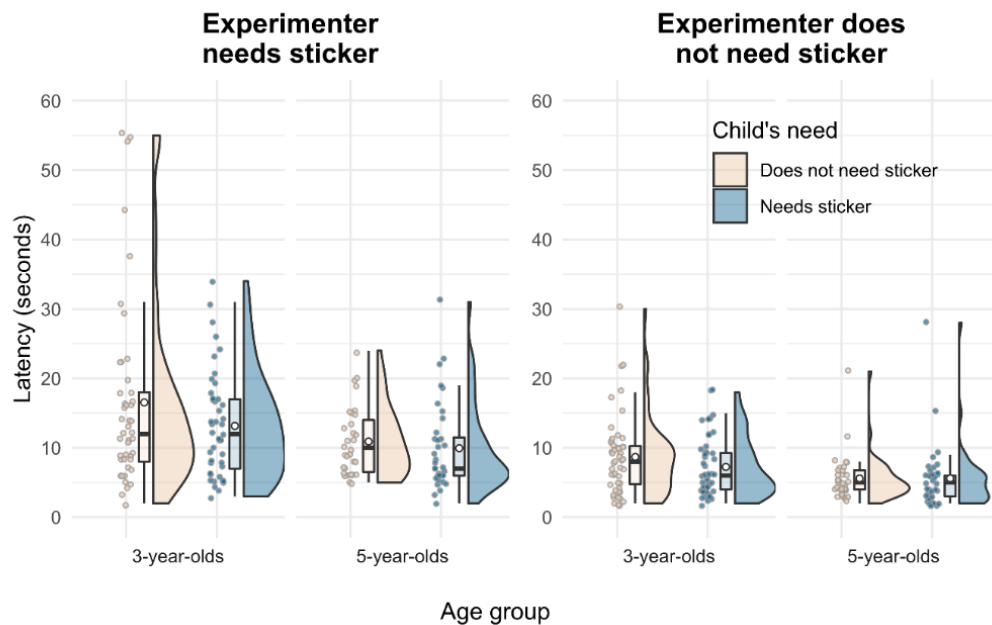


Figure 2.2: Delay in children's requests.

Latency of children's requests by age group and the child's and experimenter's need for the stickers. For each grouping, coloured dots show the individual data points. In the boxplots, the bold black lines show the median and the white dots show the mean. Curves represent the probability distribution of the data.

Hesitation

The hesitation analysis revealed similar results to the latency analysis (see Supplementary Materials E). When children did not need the sticker, they displayed more hesitation to request than when they needed the sticker. When E2 needed the sticker, children displayed more hesitation than when E2 did not need the sticker. Children became less hesitant in later trials.

Directness of the requests

In this exploratory analysis, the 321 of 332 (96.7%) trials in which children requested were included in the analysis. The response variable was a binary measure of whether children

produced direct or indirect requests. The full model improved the fit ($\chi^2 = 69.70$, $df = 7$, $p < .001$). The three-way interaction was not significant ($\chi^2 = 0.23$, $df = 1$, $p = .631$). The reduced model without this interaction term revealed a significant two-way interaction between E2's needs and age ($\chi^2 = 4.76$, $df = 1$, $p = .029$). When E2 needed the sticker, 5-year-olds produced more indirect requests than 3-year-olds. When E2 did not need the sticker, both age groups predominantly produced direct requests (see Supplementary Materials F).

Discussion

When 3- and 5-year-old children requested a sticker from an experimenter who needed the sticker, children of both ages were slow and hesitant. On the other hand, when children needed the sticker, both ages were faster and less hesitant to request. Three-year-olds also displayed negative emotions through lowered upper-body posture when making an *unjustified request* (i.e., requesting a sticker that they did not need but that E2 did need). Thus, from 3 years of age, children request with their needs and the needs of others in mind.

Previous studies have shown that 3-year-olds are sensitive to normative expectations when helping others (Hepach et al., 2013) and treat their collaborators fairly (Hamann et al., 2011; Kachel et al., 2018). In the current study, 3-year-olds displayed negative emotions when they caused an unfair (requesting a sticker they did not need from someone who needed it) yet self-beneficial (having an extra sticker) situation. Thus, our findings suggest that 3-year-olds normatively evaluate their interpersonal actions not only in collaborative tasks (Hamann et al., 2011) but also in parallel (independent) activities. Moreover, prior research has mainly focused on children's emotional responses following a transgression (Drummond et al., 2017). Here, the emotions experienced by children were *anticipatory* (i.e., *before* the request), which suggests that preschoolers simulate their social acts before they take place.

The pattern observed with how 3- and 5-year-olds made their requests was similar for latency and hesitation. Although 5-year-olds were overall faster to request than 3-year-olds,

this did not interact with the children's needs or the experimenter's needs. This age difference is likely due to 5-year-olds being taller and thus able to walk faster than 3-year-olds. However, there was an age difference in children's postural change. Five-year-olds exhibited a similar pattern of emotional responses to 3-year-olds, but their responses were overall more blunted (see Figure 2.1). This is not to say that 5-year-olds were less considerate than 3-year-olds but rather that they expressed themselves differently. Five-year-olds produced more indirect requests when their requests were unfair than did 3-year-olds. These requests conveyed less imposition in recognition of E2's needs while also lessening the likelihood of rejection and allowing children to save face more easily if rejection were to occur. It may be that, with age, children transition from relying on implicit forms of expression (e.g., posture change) to using more elaborate verbal strategies to mitigate unfairness.

Unexpectedly, 3-year-olds also showed somewhat lowered upper-body posture when making justified requests (*Child need-E2 no need*; see Figure 2.1), similar to that observed in the unjustified condition (*Child no need-E2 need*). One possible explanation is that 3-year-olds' postural shrinkage reflected a general mismatch between children's needs and the experimenter's needs. Importantly, however, only the unjustified condition caused an unfair request, and it was in this condition alone that 3-year-olds' chest height was significantly reduced from baseline (whereas in the justified condition, no significant difference was found).

Lowered body posture is an established and identifiable display of negatively valenced emotions in adults and children (Lewis et al., 1992; Montepare et al., 1987). However, we sought to specify where this change occurred. Previous research suggests that changes in posture related to positive emotions are restricted to the upper body (Hepach et al., 2017b). Our prediction in the current work was that children's chest height would decrease in response to negative emotional experiences but that hip height would be unaffected. However, 3-year-olds' posture was found to be affected by changes in both the upper body and lower body in our

analyses, helping to refine our understanding of how negative emotions might present themselves in young children. These findings are similar to recent research investigating the effect of emotional recall on adults' posture. When recalling positive and negative events, independent effects were found for chest height and hip height, respectively (von Suchodoletz & Hepach, 2021). The expression of negative emotions may not be confined solely to children's upper body, but rather might manifest itself body-wide.

A potential criticism of this study is that children were instructed to request rather than them requesting spontaneously, making children feel less responsible for their actions. If this were the case, however, we would have observed no difference between the conditions, yet children's emotional displays showed a condition difference. Relatedly, an alternative interpretation could be that children's emotional responses were elicited by E1's unwelcome instruction to make the request rather than (or in addition to) the act of requesting from E2. However, if 3-year-olds' negative emotions in the current study were directed toward E1 for pressuring them to request when they had no motivation to do so (e.g., requesting a sticker they did not need), we would have expected a similar negative response in the *Child no need–E2 no need* condition. This was not the case. Nonetheless, future research could compare children's evaluations of spontaneous requests to requests made under instruction. Children also requested from an adult who might have been viewed as an authority figure, thereby amplifying children's emotional responses. An important question for future research is whether children respond similarly when requesting from peers.

To conclude, asking for help from others is subject to normative standards that regulate our requests. We showed that preschoolers are aware of these standards and display negative emotions when making unjustified requests. Thus, when seeking help, preschoolers account for what is expected of them. Much like their prosocial acts of helping, their requests take a normative turn at age 3.

Chapter Three

Five-year-old children value reasons in apologies for belief-based accidents

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Introduction

Following an offence, a common approach to restore relationships is for the offender to apologise. Apologies show the offender regrets their actions (Leary, 1996), cares about the victim's feelings (Schleien et al., 2010) and wishes to make amends (Schlenker, 1980). Pre-school children already grasp the mitigating function of apologies. They view apologetic transgressors as being more remorseful (Smith & Harris, 2012), likable (Banerjee et al., 2010) and “just” (Irwin & Moore, 1971), and forgive apologetic transgressors more than unapologetic transgressors (Oostenbroek & Vaish, 2019).

Apologies are perceived differently according to the kind of transgression they proceed. Research has mostly focused on apologies following violations in which the intention and the outcome are matched. These include *intentional transgressions* wherein the act and outcome are intended (e.g., intentionally smashing someone's cup), and *accidental transgressions* wherein the act and outcome are unintended (e.g., tripping and breaking someone's cup). Apologies, even more elaborate ones, are less effective following intentional harm, with blame and punishment still being issued (Darby & Schlenker, 1982, 1989; Ohbuchi & Sato, 1994) and the apology itself more likely to be rejected (Struthers et al., 2008). Apologies following accidental harm, on the other hand, typically engender forgiveness in adults and children alike (Oostenbroek & Vaish, 2019; see Yucel & Vaish, 2021 for a review).

A less explored kind of transgression, however, are *belief-based accidents* in which the intention and outcome do not match. An individual might deliberately eat someone's

sandwich by falsely believing it was theirs. The act of eating the sandwich is intended, but the outcome (i.e., stealing somebody's food) is not. Unlike accidental transgressions, where the unintentional nature of the transgression is observable (e.g., the transgressor's surprised face, gasps) and in the common ground of the victim and transgressor (Köymen et al., 2016; Mammen et al., 2018; see also Bohn & Köymen, 2018), belief-based accidents result in different interpretations of the offence. From the victim's perspective, the transgression appears intentional based on the intended action, whereas the transgressor considers it an accident due to the unintended outcome. Thus, giving reasons (e.g., "I thought the sandwich was mine") for belief-based accidents is crucial to clarify that the harm was unintended, while reasons for accidental transgressions are redundant.

Children tend to evaluate transgressors more positively if they have a "good" reason for their misbehaviour. Schmidt et al (2016) found that 8-year-old children excused a greedy puppet if that puppet needed or deserved the resources, but not if she simply wanted more. Five-year-olds judged that it was more acceptable to break a promise for prosocial reasons (e.g., to help someone) than for selfish reasons (e.g., to play a more exciting game; Kanngieser et al., 2021; Mammen et al., 2019).

Preschoolers also feature the mental states of transgressors in their normative judgments. Although 3- to 5-year-olds were thought to focus mostly on the extent of a harm (i.e., the outcome) when evaluating others' moral acts (Piaget, 1932; Zelazo et al., 1996), recent evidence shows that they also account for the actor's intentions (Vaish et al., 2010; Nobes et al., 2009; Margoni & Surian, 2020). With age, children increasingly judge a transgressor less according to outcome and more according to whether she was well- or ill-intentioned (Cushman et al., 2013; Nobes et al., 2016, 2017; Li et al., 2017). This "outcome-to-intent" shift in children's moral reasoning, however, may not apply universally. In so-called "opacity of mind" cultures (e.g., Fiji), individuals are known to be less mind-minded in that they mostly

disregard intentions and, instead, focus on outcomes when judging transgressions (Barrett et al., 2016; McNamara et al., 2019).

Studies tapping into children's understanding of belief-based accidents, however, show a later developing competence around age 7 due to the conflicting action and outcome information (Helwig et al., 2001; Killen et al., 2011). After witnessing a series of belief-related mistakes, Proft and Rakoczy (2019) found 5- and 7-year-old children's judgements focused more on the intended action than on the unintended outcome. Only when primed for the intentional structure of such acts (i.e., whether the agent had intentionally caused the outcome) did 5-year-olds evaluate belief-based accidents similarly to intent-based ones. A similar pattern is found when children themselves are the victims of belief-based accidents. Participants aged 5- to 10-years-old were told that another child had unknowingly scribbled over several desirable colouring sheets that were meant for them, and was sorry for having done so. Younger children forgave this remorseful transgressor less often than older children, suggesting that their judgements emphasised the intended action over the unintended outcome (Amir et al., 2021).

While children recognise the mitigating function of apologies and reasons for intentional and accidental transgressions, whether children attend to the *presence* and the *quality* of reasons that accompany apologies for belief-based accidents is not known. Across two pre-registered studies, we investigated whether 4- and 5-year-olds consider reason-giving to be necessary when apologising for belief-based accidents (Study 1) and whether 5-year-olds evaluate the quality of these reasons (Study 2). We focused on these age groups due to children's sensitivity to others' mental states being present from age 4 (Wellman et al., 2001) but improves at age 5 to include normative judgments (Proft & Rakoczy, 2019).

Study 1

In Study 1, 4- and 5-year-olds observed two transgressors rip a third-party's picture. Both apologised, but one also offered a reason for her transgression. In the belief-based accident condition, both transgressors ripped the pictures intentionally (with happy expressions). The reason-giving transgressor said, "I'm sorry, I thought this was my picture"; the other only apologised. In the intent-based accident condition, both transgressors ripped the pictures accidentally (with shocked expressions). The reason-giving transgressor said, "I'm sorry, I was trying to see the picture better"; the other only apologised. Children then selected the transgressor they would rather help, play with, and trust with their toy.

As part of our confirmatory hypotheses, we expected children, especially 5-year-olds, to prefer the reason-giving transgressor in the belief-based accident condition since the reason clarified that the outcome was unintended (Rakoczy & Proft, 2019). In the intent-based accident condition, we expected both ages to show no preference for either transgressor since it was already in common ground (through facial expressions) that the transgressions were unintended, and thus providing a reason was not necessary (Köymen et al., 2016). We also anticipated the trust partner-choice question (i.e., who should mind the child's toy) to be the most diagnostic because of its resemblance to the stories depicting the transgressors. As part of our exploratory hypotheses, we investigated whether there was an age or condition difference in the way children justified their preferences.

Methods

The procedure, hypotheses, sample size, exclusion criteria, and statistical analyses were preregistered (<https://osf.io/jahzx>).

Participants

Forty-eight 4-year-olds ($M = 4;6$ [years;months], $Range = 4;0-4;11$, 28 girls) and 48 5-year-olds ($M = 5;4$, $Range = 5;0-6;0$, 25 girls) participated in the study and were randomly

assigned to one of two conditions. Data collection took place between July 2020 and February 2021. The mean age of 4-year-olds differed by condition ($t(46) = 2.26, p = .029, d = 0.65$), with participants in the belief-based accident condition being older ($M = 4;7, SD = 0;3$) than the participants in the intent-based accident condition ($M = 4;5, SD = 0;3$). The mean age of 5-year-olds did not differ between the belief-based accident ($M = 5;5, SD = 0;4$) and intent-based accident ($M = 5;4, SD = 0;3$) conditions ($t(46) = 0.66, p = .516, d = 0.19$). Two additional 4-year-olds were excluded due to inattentiveness and failing to answer over half of the warm-up trials correctly. Children who were native speakers of English were recruited from a database covering northwest England. We did not collect individual data about participants' socioeconomic or ethnic background, but families in this database come from predominantly White, middle-class backgrounds. Informed parental consent and verbal child assent were obtained before participation in the study.

Materials

In the first set of warm-up trials (5 trials), children were shown two objects on the screen and asked to identify one. In the second set, (4 trials) children heard four vignettes depicting two characters and were asked which was more likeable. In the test trial, children witnessed a story of two transgressors who apologised for their transgressions, with 15 PowerPoint slides containing still images and pre-recorded narration (see Appendix B). The pre-recorded narration was voiced by the male experimenter, and the transgressors' dialogue by two female speakers.

Procedure

Children and their parents joined an online Zoom meeting in which the experimenter (E) screen-shared a PowerPoint presentation. Parents were asked to confirm that the presentation was showing correctly (e.g., that it was not windowed). They could then choose whether or not to remain present during testing. If parents chose to stay, they were asked to sit behind

their child and to not engage with them nor comment on the situation. In the first set of warm-up trials, children saw slides containing two objects (e.g., flower and ball) and were asked to locate one by pointing to ensure the slides were correctly displayed. In the second warm-up, children were presented with four vignettes depicting a “good” and “bad” character to check whether they preferred “nicer” individuals. In vignette 1, a boy hurt himself. One friend helped him; the other did not. Children were asked: “Which friend do you like more?”. The next three vignettes followed a similar structure (see Appendix B). Across all vignettes, the character presented first was counterbalanced.

In a single test trial, each child saw two transgressions in counterbalanced order. Each began with the victim, Tom, and one transgressor, Lisa, drawing matching pictures which were then placed on a table. The transgressor picked up a picture and ripped it. In the belief-based accident condition, the transgressor laughed and smirked during her transgression, highlighting that the act was intended. Lisa then apologised: “I’m sorry”. Next, the victim drew matching pictures with the other transgressor, Poppy. The second transgression was identical to the first, except that Poppy apologised and gave a reason for her transgression: “I’m sorry, I thought this was my picture”. The identity of the reason-giving transgressor was also counterbalanced.

Children then answered three partner-choice questions in fixed order. For the help question, the transgressors were missing the same piece in their puzzles. E said: “They both ripped up Tom’s pictures, but who would you like to help? Lisa or Poppy?”. For the play question, both transgressors held a ball and children decided who they would rather play with. For the trust question, a toy (said to be the participant’s) was positioned between the transgressors and children decided who should look after it. Finally, children were asked why they favoured their preferred transgressor (i.e., the transgressor chosen in 2 or more questions): “You seemed to like X more, why?”, and their disfavoured transgressor: “You seemed

to like Y less, why?”. If children referred only to the apology, an additional prompt was used to elicit more detailed reasons: “Did she say anything else?”.

The intent-based accident condition was identical, except that the transgressors gasped with shocked expressions during their transgressions, highlighting that each act was unintended. One transgressor apologised; the other apologised with a reason: “I’m sorry, I was trying to see the picture better”.

Sessions were recorded for coding purposes and lasted approximately 15-20 minutes.

Coding

We coded for which transgressor children favoured in each partner-choice question. We then identified children’s “reason-related justifications” for their preferences, which referred to the transgressor’s reason (e.g., “She thought it was hers”) or lack thereof (e.g., “She said sorry, but she didn’t say why”). A second coder, blind to predictions, coded 25% of the data (24 children). Agreement was $\kappa = .90$.

Results

As part of the preliminary analyses, we analysed whether children’s performance in the warm-up trials (in which children identified the “nicer” character) varied by age group and condition. For 4-year-olds, the mean number of trials in which they correctly chose the “nicer” character was 3.79 in the belief-based accident condition and 3.58 in the intent-based accident condition (out of four trials). For 5-year-olds, the mean number of trials answered correctly was 3.83 in the belief-based accident condition and 3.96 in the intent-based accident condition. Children’s warm-up performance did not differ between conditions (4-year-olds: $t(46) = 1.23, p = .224, d = 0.36$; 5-year-olds: $t(46) = 1.17, p = .248, d = 0.34$).

We then ran four analyses: three on children’s preferences (preregistered) and one on children’s justifications (exploratory). First, to identify children’s overall preferences between the two transgressors, we conducted four one-sample t-tests (for each age group and

condition) and compared the number of times children preferred the reason-giving transgressor (0-3) to chance (1.5). Four-year-olds showed no preference for either transgressor in the intent-based ($t(23) = 0.46, p = .647, d = 0.09$) nor belief-based accident conditions ($t(23) = 0.70, p = .491, d = 0.14$). Five-year-olds showed a significant preference for the reason-giving transgressor in the belief-based accident condition ($t(23) = 2.14, p = .043, d = 0.44$), but not in the intent-based accident condition ($t(23) = 0.57, p = .575, d = 0.12$; see Figure 3.1).

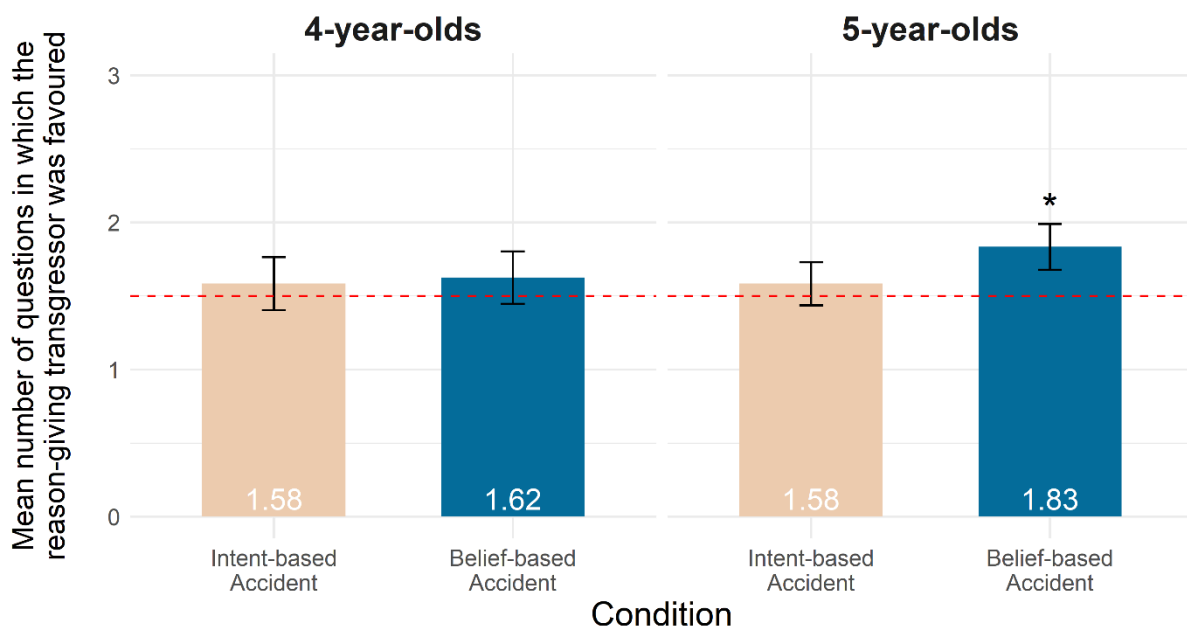


Figure 3.1: Mean preference for the target transgressor.

Mean number of partner-choice questions in which the reason-giving transgressor was favoured by age group and condition. The red line represents chance, and error bars show standard error (SE). * denotes $p < .05$ compared to chance.

Second, we compared children’s preferences across conditions using a between-subjects ANCOVA. The response variable was the number of times children preferred the reason-giving transgressor. Predictors included: age (treated as a continuous covariate) and condition (intent-based, belief-based), their interaction, and gender. There was no significant interaction ($F(1,91) = 0.30, p = .588, \eta_p^2 = .003$) nor main effects ($F_s(1,91) < 0.72, p_s > .397, \eta_p^2_s < .008$; see Supplementary Materials A for the output summary), suggesting there were

no age or condition differences in how often children favoured the reason-giving transgressor.

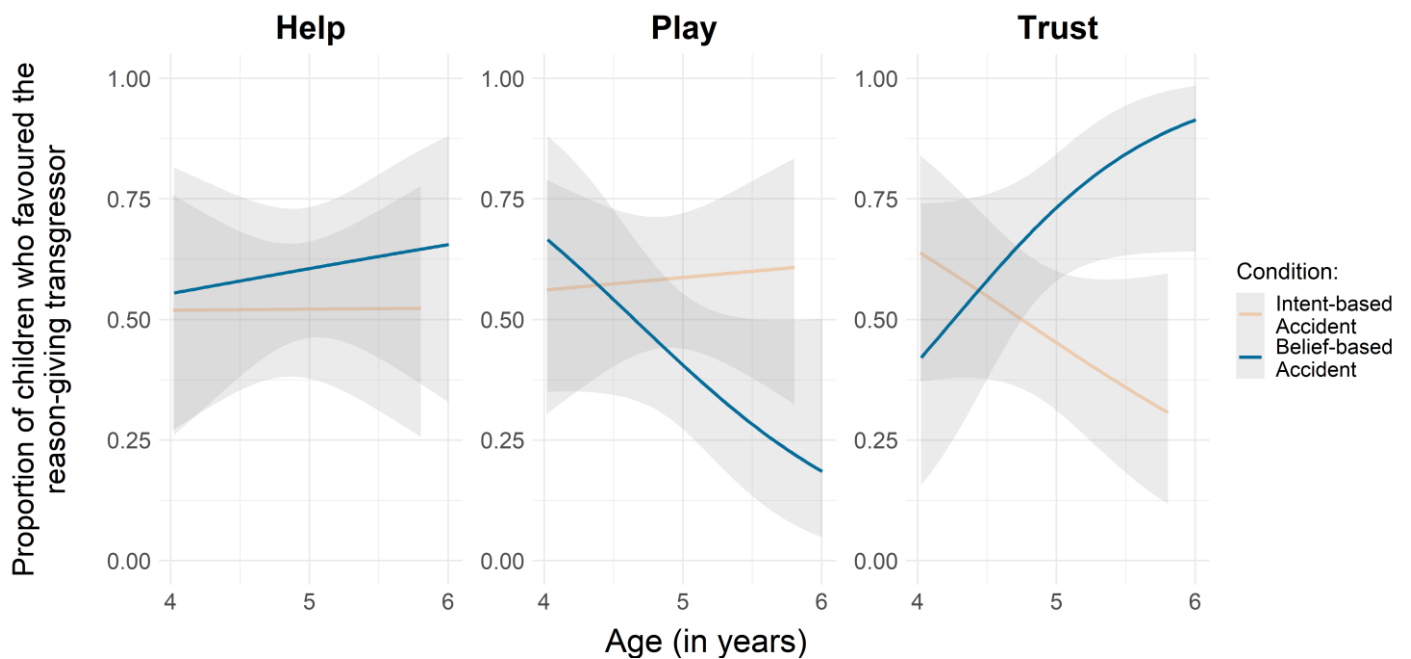


Figure 3.2: Preference for the target transgressor by test question.

Children’s preferences for the reason-giving transgressor across the help, play and trust questions by age and condition. Lines represent fitted data with 95% confidence intervals.

Third, to determine children’s preferences in each partner-choice question, we ran three Generalised Linear Models (GLMs) with binomial error distribution. The response variable was the binary measure of whether or not the child chose the reason-giving transgressor. The full model included the predictors: age (treated as a continuous variable), condition, their interaction, and gender. The null model included gender only. The full model did not improve the fit for the help question ($\chi^2 = 0.69$, $df = 3$, $p = .875$) nor the play question ($\chi^2 = 6.11$, $df = 3$, $p = .107$). For the trust question, the full model improved the fit ($\chi^2 = 10.16$, $df = 3$, $p = .017$). The interaction between age and condition was significant ($\chi^2 = 5.40$, $df = 1$, $p = .020$; see Supplementary Materials B for the model summary). Five-year-olds were more likely to trust the reason-giving transgressor in the belief-based accident condition than in the intent-based accident condition. Four-year-olds preferred each transgressor equally often across both conditions (see Figure 3.2).

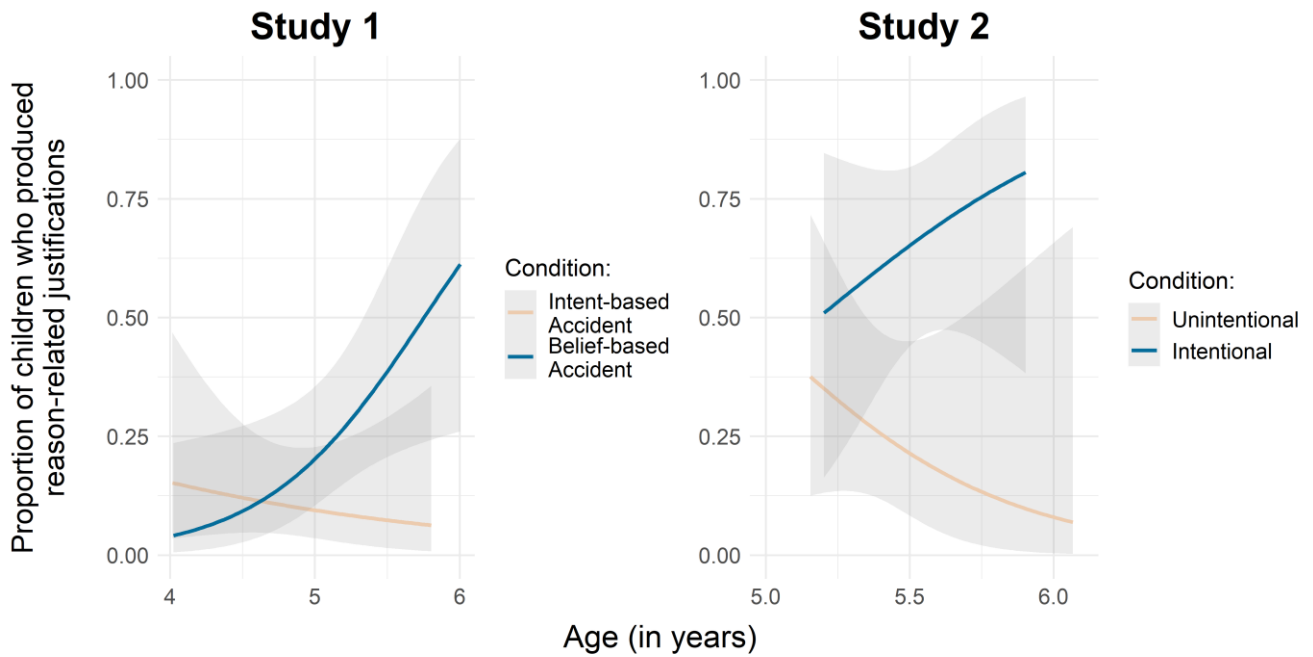


Figure 3.3: Number of reason-related justifications produced. Children’s justifications for their preferences across Study 1 and Study 2 by age and condition. Lines represent fitted data with 95% confidence intervals.

Finally, to investigate children’s justifications for their preferences, we fitted a GLM with binomial error distribution. The response variable was the binary measure of whether or not children produced a reason-related justification. The models were the same as the previous GLMs. The full model improved the fit ($\chi^2 = 9.87$, $df = 3$, $p = .020$). The interaction between age and condition was significant ($\chi^2 = 4.56$, $df = 1$, $p = .033$; see Supplementary Materials C for the model summary). Five-year-olds were more likely to give reason-related justifications in the belief-based accident condition than in the intent-based accident condition, whereas 4-year-olds provided reason-related justifications equally infrequently across both conditions (see Figure 3.3).

In our preregistered analyses, we did not include order as a predictor variable. Subsequent analyses revealed, however, that the order in which the target transgressor was presented to children had no effect on the results obtained (see Supplementary Materials D for the full output summary). As such, we opted to report our analyses as outlined in our preregistrations. All statistical analyses were run in R (R Core Team, 2022).

Discussion

For belief-based accidents, 5-year-olds, but not 4-year-olds, preferred the reason-giving transgressor over the transgressor who only apologised. This preference was largely driven by the trust question (i.e., which transgressor should look after the child's toy). Moreover, 5-year-olds referred to the reason provided in the belief-based accident condition, excusing the reason-giving transgressor (e.g., "She thought it was hers") or condemning the apology-only transgressor (e.g., "She said sorry, but she didn't say why"). Thus, at age 5, children only excused the belief-based transgressor when she provided a reason which clarified that the harm was not intended.

Children did not simply favour the transgressor who had the most to say (Mercier et al., 2014). If this were the case, 5-year-olds would have shown a preference for the reason-giving transgressor across both conditions. Rather, a preference for her was only observed in the belief-based accident condition. When it was in common ground that the transgressions were accidents (i.e., from the transgressor's gasp and shocked expression), as in the intent-based accident condition, 5-year-olds recognised that no further explanation was needed (Köymen et al., 2016).

Another interpretation for the transgressor's shocked expression could be that she did not expect her behaviour to be observed by anyone, making her expression not about intentions but about her company. We can preclude this interpretation, however, for two reasons. First, the victim was always present and never left the transgressor's side (see Appendix B). Second, the transgressor's surprise was linked back to her actions by the experimenter in his narration of the story (e.g., "[Lisa gasps] Lisa ripped the picture. But she did not want to rip the picture. She did it by accident"). These facial expressions were thus likely perceived by children as pertaining to the transgressor's conduct rather than to her surroundings. Future studies, however, might benefit from including additional comprehension checks to

discriminate between these competing explanations.

While children preferred the reason-giving transgressor more often in the belief-based accident condition than in the intent-based accident condition, this difference was not significant for the help and play partner-choice questions. These questions were perhaps too distinct from the stories depicting the transgressors. Preschoolers have been shown to limit their negative evaluations about a transgressor to the specific transgression caused and may not extend these to novel activities (Oostenbroek & Vaish, 2019).

Across both conditions, 4-year-olds' preferences were similar for both the reason-giving and apology-only transgressor. This finding is consistent with previous research which suggests young children tend to privilege intentions above beliefs (e.g., Killen et al., 2011). Before 5, then, children may not understand that belief-based transgressions are indeed accidents and, therefore, may not value reasons to this effect.

Our exploratory analysis on children's justifications for their preferences showed 5-year-olds gave more reason-related justifications (e.g., "She thought it was hers") in the belief-based accident condition—where the reason-giving transgressor was favoured—than in the intent-based accident condition—where no preference was found. This finding is also consistent with prior research showing young children are more likely to give reasons when solving problems with a clearly correct solution than for problems with multiple, equally plausible answers (Köymen et al., 2020).

What this study shows is that older preschoolers recognise which mistakes need or benefit from more than an apology, and which do not. What Study 1 leaves open, however, is how 5-year-olds compare apologies following belief-based accidents to those following intentional and accidental harm (in which both the act and outcome are matched), and whether the kind of reason accompanying the apology affects their evaluations of the transgressor.

Study 2

In Study 2, the procedure followed that of Study 1 but with the transgressions paired differently. In the intentional condition, children witnessed two seemingly intentional transgressions. One transgressor gave a “good” reason which signalled an unintended outcome (“I’m sorry, I thought this was my picture”) [henceforth “belief-based transgressor”], the other gave a “bad” reason which made the act and outcome intended (“I’m sorry, I thought your picture wasn’t good”) [henceforth “intentional transgressor”]. In the unintentional condition, children saw the belief-based transgressor compared to a transgressor who caused an intent-based accident and gave a “good” reason which made the act and outcome unintended (“I’m sorry, I was trying to see the picture better”) [henceforth “accidental transgressor”]. Using revised partner-choice questions which matched the context of the transgressions, children then selected which transgressor to help with some drawing, to draw some pictures with, and to trust with their picture.

As part of our confirmatory hypotheses, we predicted that in the intentional condition, 5-year-olds would prefer the belief-based transgressor more than the intentional transgressor. We also expected children would show no preference between the transgressors in the unintentional condition, since neither intended the outcome (Proft & Rakoczy, 2019). As part of our exploratory hypotheses, we investigated whether there was a condition difference in the way children justified their preferences.

Methods

The procedure, hypotheses, sample size, exclusion criteria, and statistical analyses were preregistered (<https://osf.io/mzcv4>).

Participants

Forty-eight 5-year-olds ($M = 5;6$, $Range = 5;1-6;0$: 25 girls), who did not participate in Study 1, were randomly assigned to one of two conditions. Data collection took place

between April 2021 and November 2021. The mean age of participants did not differ between the intentional ($M = 5;6$, $SD = 0;2$) and unintentional ($M = 5;5$, $SD = 0;3$) conditions ($t(46) = 1.57$, $p = .124$, $d = 0.45$). One additional 5-year-old was excluded for not answering any of the partner-choice questions. Children who were native speakers of English were recruited from a database covering northwest England. We did not collect individual data about participants' socioeconomic or ethnic background, but families in this database come from predominantly White, middle-class backgrounds. Informed parental consent and verbal child assent were obtained before participation in the study.

Materials

The stimuli were the same as Study 1, with two exceptions. Firstly, the stimuli were rearranged to compare the different types of transgression. Secondly, verbal cues of intent (i.e., the transgressor's gasp/laugh) were removed to reduce the difference in intentionality between both kinds of accident in the unintentional condition (see Appendix C).

Procedure

The procedure was identical to Study 1, except for the pairing of the transgressions. In the intentional condition, children observed the transgressors cause the same seemingly intentional transgression. The belief-based transgressor gave a "good" reason which signalled an unintended outcome ("I'm sorry, I thought this was my picture"), whereas the intentional transgressor gave a "bad" reason which made the act and outcome appear intended ("I'm sorry, I thought your picture wasn't good"). In the unintentional condition, children witnessed the belief-based transgressor and the accidental transgressor apologise and give "good" reasons for their transgressions. The belief-based transgressor said: "I'm sorry, I thought this was my picture". The accidental transgressor said: "I'm sorry, I was trying to see the picture better".

Children were then presented with the revised partner-choice questions. In the help question, the transgressors were missing crayons needed for drawing pictures. Children were told: “They both ripped up Tom’s pictures, but who would you like to give the crayon to? Lisa or Poppy?”. In the play question, children chose which transgressor they would rather do some colouring with. In the trust question, a picture (said to be the participant’s) sat between the transgressors and children decided which should look after it. Finally, children were asked to justify their preferences.

Coding

Coding was the same as Study 1. A second coder, blind to predictions, coded 25% of the data (12 children). Agreement was $\kappa = 1$.

Results

As part of the preliminary analyses, we analysed whether children’s performance in the warm-up trials (in which children identified the “nicer” character) varied by condition. The mean number of trials answered correctly was 3.79 in the intentional condition and 3.92 in the unintentional condition (out of four trials). Children’s warm-up performance did not differ between conditions ($t(46) = 1.22, p = .229, d = 0.35$).

We then ran the same four sets of analyses as in Study 1. First, one-sample t-tests suggested that 5-year-olds showed a significant preference for the belief-based transgressor in the intentional condition ($t(23) = 2.70, p = .013, d = 0.55$), and a significant preference for the accidental transgressor in the unintentional condition ($t(23) = 8.52, p < .001, d = 1.74$; see Figure 3.4).

Second, to ascertain whether children’s overall preference for the belief-based transgressor differed across conditions, we ran a between-subjects ANOVA. A significant main effect of condition ($F(1,45) = 47.00, p < .001, \eta_p^2 = .511$; see Supplementary Materials E for the output summary) showed 5-year-olds favoured the belief-based transgressor significantly more often in the intentional condition than in the unintentional condition (see Figure 3.4). To explore whether the performance of 5-year-olds varied when controlling for age, a between-subjects ANCOVA in which age was treated as a continuous variable (i.e., measured in months) was also conducted. The interaction between age (in months) and condition was not significant ($F(1,43) = 1.09, p = .301, \eta_p^2 = .025$). The only significant main effect was that of gender ($F(1,43) = 4.19, p = .047, \eta_p^2 = .089$; see Supplementary Materials F for the output summary). When controlling for age, girls favoured the belief-based transgressor more often than boys.

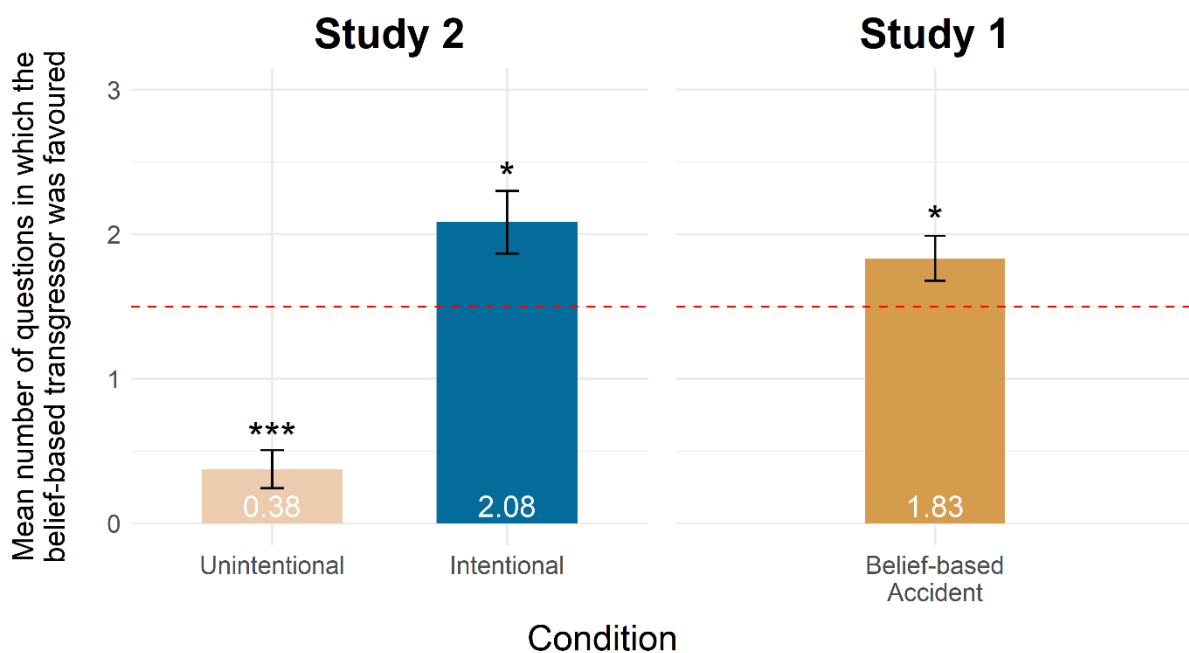


Figure 3.4: Mean preference for the target transgressor in Study 2.

Mean number of partner-choice questions in which 5-year-olds favoured the belief-based transgressor by condition. Five-year-olds’ performance in the belief-based accident condition of Study 1 is included for comparison purposes. The red line represents chance. Error bars show standard error (SE). * denotes $p < .05$, *** denotes $p < .001$ compared to chance.

Third, to determine children’s preferences for the belief-based transgressor across each partner-choice question, we ran three GLMs with binomial error distribution (see Supplementary Materials G for the model summaries). The response variable was the binary measure of whether or not the child chose the belief-based transgressor. The full model included condition and gender. The null model included gender only. Each analysis revealed the same pattern. Five-year-olds were more likely to help ($\chi^2 = 29.07, df = 1, p < .001$), play with ($\chi^2 = 11.32, df = 1, p = .001$), and trust ($\chi^2 = 18.44, df = 1, p < .001$) the belief-based transgressor in the intentional condition than in the unintentional condition (see Figure 3.5).

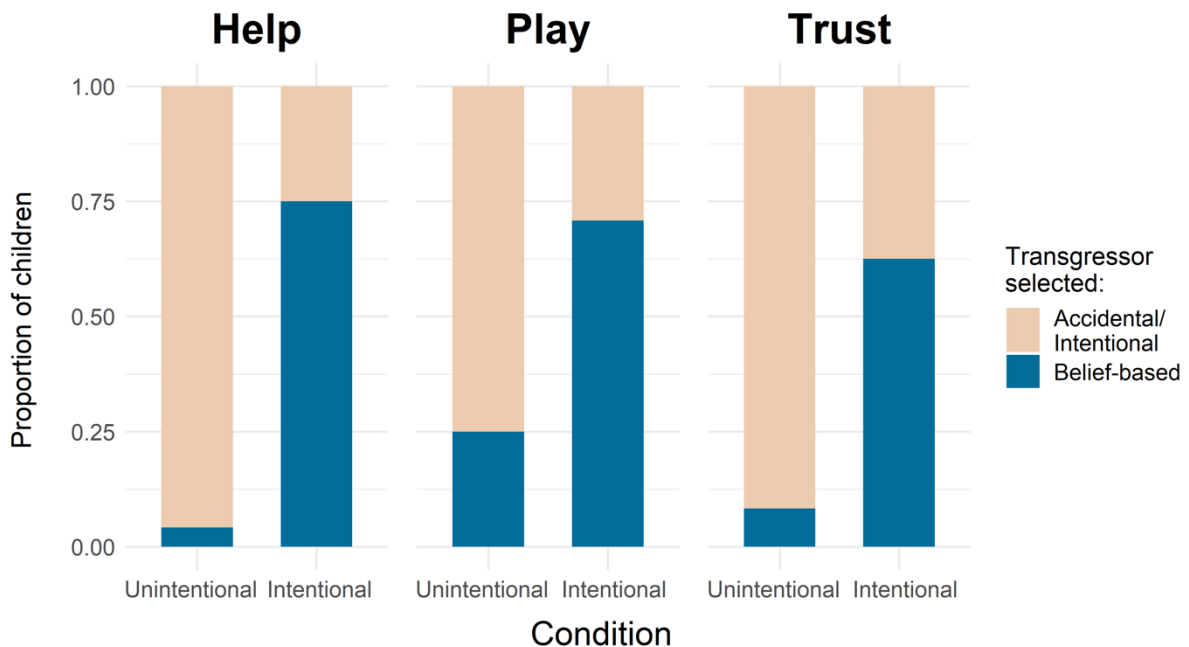


Figure 3.5: Transgressor preference by test question in Study 2.

Five-year-old children’s preferences in Study 2 for the belief-based transgressor across the help, play and trust questions by condition.

Finally, to investigate children’s justifications for their preferences, we fitted a GLM with binomial error distribution (see Supplementary Materials H for the model summary).

The response variable was the binary measure of whether or not children produced a reason-related justification. The models were the same as the previous GLMs. Five-year-olds gave significantly more reason-related justifications in the intentional condition than in the unintentional condition ($\chi^2 = 8.62, df = 1, p = .003$; see Figure 3.3).

Discussion

When both transgressions appeared intentional, 5-year-olds preferred to help, play with, and trust the transgressor who gave a “good” reason explaining that the outcome was unintended over the transgressor who gave a “bad” reason, which made both the act and outcome seem deliberate. Thus, when intentional harm was perceived, children attended to the reasons provided and trusted the transgressor with the better reason.

Conversely, in the unintentional condition wherein the belief-based accident was pitted against an intent-based one, 5-year-olds showed a preference for the accidental transgressor and did not treat both kinds of accident equivalently. Presumably, children perceived the intent-based accident as being “more” of an accident. This will be discussed further in the General Discussion.

Despite having clear preferences in each condition, 5-year-olds provided more reason-related justifications in the intentional condition than in the unintentional condition. This condition difference might indicate that the “correct” decision was obvious in the intentional condition (Köymen et al., 2020). In the unintentional condition, children had a harder time justifying their preference for the accidental transgressor, presumably because they recognised that the belief-based transgressor had a similarly “good” reason for her transgression.

In our exploratory analysis, we observed gender differences when controlling for age. In comparison to boys, girls had a greater overall preference for the belief-based transgressor which might indicate a heightened awareness for others’ mistaken beliefs. Previous studies have found a slight female advantage on false belief tasks (Charman et al., 2002) maybe because girls are recipients of more mental state talk than boys (e.g., Leaper et al., 1998).

General Discussion

Giving reasons for belief-based accidents pays dividends as it reinterprets others’ perception of the event. In Study 1, we showed that 5-year-olds, but not 4-year-olds, understand

when reasons should be given for an accident, recognising that explaining belief-based accidents is more important than for intent-based ones. In Study 2, we also showed that the reason accompanying the apology changed children's interpretation of the same seemingly intentional transgression. The "good" reason indicated that the transgressor had unknowingly caused harm which helped to mitigate her transgression, whereas the "bad" reason had the reverse effect. Taken together, these results suggest 5-year-olds understand when and what kinds of reasons should accompany apologies.

Previous research has found that 5-year-olds recognise "good" reasons for moral transgressions (Kanngiesser et al., 2021; Mammen et al., 2018, 2021). Here, we extend these findings by showing that 5-year-olds also recognise *when* reasons ought to be given. Simply apologising for a belief-based accident was perceived to be almost as bad as giving a poor reason (see Figure 3.4). Further, 5-year-olds often explicitly referred to the belief-based transgressor's reason (e.g., "She thought it was hers") as being the basis for their preferences. Thus, children this age already reason about reasons and engage in so-called "meta-talk" (Hartwell et al., 2022; Köymen & Engelmann, 2022; Köymen & Tomasello, 2018, 2020).

Our findings might also have implications for the development of mental state reasoning in children. Before age 7, children often find it challenging to identify others' false beliefs when these beliefs have moral implications (e.g., Killen et al., 2011). Though our study was not a test of children's morally-relevant theory of mind per se, our findings suggest 5-year-olds were aware of the transgressor's mental state and used this information in their normative judgements (e.g., "She thought it was hers"). Unlike in earlier work (Proft & Rakoczy, 2019), however, 5-year-olds in the present studies made these belief-based judgements without scaffolding. Their unaided success might be explained by the way in which the false belief was presented. Previously, the transgressor's mistaken belief was experienced by children first-hand (Amir et al., 2021) or was introduced as part of the narrative told by the

experimenter (Proft & Rakoczy, 2019). Here, participants were uninvolved observers who inferred it from the reasons provided by the transgressor herself. Four-year-olds, conversely, consistently performed at chance. Despite their success in traditional false belief tasks at this age (Wellman et al., 2001), children's sensitivity to *morally-relevant* false beliefs seemingly develops from age 5 onward.

Online testing has been increasingly implemented since the COVID-19 pandemic. This change in research methodology has raised questions around participant engagement and data quality. Across both studies, we implemented a procedure in which the experimenter shared and actively moderated the test material via video-conferencing. This interactive approach to remote testing has been shown to produce similar outcomes (e.g., participant responsiveness and data quality) to those observed in lab-based experiments (Schidelko et al., 2021), and this conclusion rings true from our own experiences of piloting Study 1 in the lab. Although online data collection poses a number of challenges (Kominsky et al., 2021), moderated testing paradigms are a promising alternative to traditional in-lab test settings.

A potential concern across the current studies was our use of a partner-choice paradigm. Although we wanted to reduce the demands placed on children and show that they display a systematic preference within this constrained format, these forced-choice questions obliged children to select a transgressor when participants might have preferred to choose both or neither. This might explain why 5-year-olds in Study 2 did not evaluate intent-based and belief-based accidents equivalently. This is not to say that 5-year-olds do not understand belief-based mistakes (as they favoured the belief-based transgressor in other conditions), but making children choose one transgressor over another possibly made the intent-based accident (unintended action-unintended outcome) appear as “more” of an accident compared to the belief-based one (intended action-unintended outcome). Future partner-choice tasks could compare each transgressor to a neutral character rather than pitting them against each other

(see Vaish et al., 2010) to allow children to select both transgressors in turn, or neither.

A further caveat is the generalisability of the present findings. Cross-cultural studies have established that small-scale “opacity of mind” societies (e.g., Fiji) prioritise outcomes over intentions when evaluating transgressions (e.g., McNamara et al., 2019). Thus, the developmental patterns described here and in the wider literature may not apply universally. More cross-cultural research into children’s intent-based and belief-based judgements is therefore needed.

To conclude, unlike for intent-based accidents, the present studies show 5-year-old children recognise the importance of explaining belief-based accidents, and explaining them well.

Chapter Four

Boundaries of apologies: Children avoid transgressors who give the same apology for a repeat offence

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Introduction

Apologies serve a variety of mitigating functions that are critical for restoring social relationships. By apologising, a transgressor publicly admits blame, shows concern for the hurt other, and expresses her desire to make amends (Keltner, 1995; Tomasello, 2019). The renunciation of the guilt-inducing act also indicates to others that the transgression was a one-time occurrence and does not reflect a more stable personality trait (Castelfranchi & Poggi, 1990; Goffman, 1967; Keltner et al., 1997; McCullough et al., 1997). Thus, apologies often act as implicit assurances of better future behaviour.

By the preschool years, children are known to apologise after having transgressed and evaluate others' apologies critically. For example, 2- to 3-year-olds apologise when led to believe that they have damaged another's possessions (Kochanska et al., 1995). Four-year-olds forgive apologetic transgressors more than unapologetic transgressors (Oostenbroek & Vaish, 2019; Vaish et al., 2011) and evaluate them and their transgressions more positively (Smith et al., 2010; Wellman et al., 1979). However, most research into children's evaluations of apologetic transgressors has limited itself to isolated transgressions. In such studies, children witness or fall victim to a single transgression before being asked how they feel (Smith & Harris, 2012), how likeable is the transgressor (Banerjee et al., 2010), how much the transgressor should be punished (Darby & Schlenker, 1982), and so forth.

To our knowledge, only one study has investigated young children's expectations about apologetic transgressors' future behaviour and whether they treat apologies as

assurances of better future conduct. Oostenbroek and Vaish (2019) had 4- and 5-year-olds' pictures torn by two adult experimenters, one of whom apologised while the other did not. Children were then asked to imagine which of the transgressors would be more likely to cause them harm again in future. Both ages expected the apologetic transgressor to be less likely to repeat the same transgression (i.e., rip another picture). What has yet to be explored, however, is how children respond to a transgressor who apologises but then *continues* to commit the same harm and apologise again for it. When a transgressor repeats a harm that was previously apologised for, his/her second apology may not be evaluated as positively as his/her first because the reassurance of better behaviour that comes with the second apology carries less weight. In other words, apologising for the same transgression multiple times may be treated as less acceptable and may elicit concern for the transgressor's future conduct. Exploring children's evaluations of apologetic reoffenders would provide further evidence for their understanding of what it means to apologise and of the boundaries of an apology (i.e., saying "I'm sorry" may not always be sufficient).

To strengthen an apology, transgressors often convey to others that they did not mean for the transgression to happen by explaining or giving reasons for their transgressions. Reasons work by drawing on the common values shared among interlocutors and the wider community to show that the offender is aware of and remains committed to the group and its norms despite the breach (Tomasello, 2019). Previous research has shown that preschool children distinguish "good" from "bad" reasons for transgressions. Five-year-olds, for example, acknowledge that it is more acceptable for others to break promises for prosocial reasons (e.g., to help someone) than for selfish ones (e.g., to play a more exciting game, Kanngiesser et al., 2021; Mammen et al., 2018, 2019). At age 8, children excuse a greedy puppet who gives a legitimate reason for why she deserves more resources (e.g., she is needy or meritorious) but not if she simply wants more (Schmidt et al., 2016).

Although children recognise “good” from “bad” reasons for one-time transgressions, whether children apply the same standards when evaluating the reasons for repeat offences is not known. A “good” or appropriate reason for a transgression, like knocking a cup of water on a friend’s picture (e.g., “I’m sorry, I did not see the cup”) might be evaluated negatively if the transgressor offers that same reason for the same subsequent harm (e.g., “I’m sorry, I did not see the cup again”). Offering the same apology repeatedly might convey to children a weaker reassurance of better future behaviour, thereby making the transgressor appear less trustworthy. On the other hand, giving a different valid reason for the second transgression (e.g., “This time, I was reaching for the pen beside the cup”) might be evaluated more positively. Although the outcome is the same (i.e., another ruined picture), the transgressor does not repeat the action for the same reason as previously apologised for. Thus, if a transgressor who offers the same apology for a repeat offence is evaluated by children as being less trustworthy, we might expect them to be less inclined to interact with her in future activities nor to vouch for her to others.

In this preregistered online study, we, therefore, investigated whether 5- and 6-year-old children were less likely to trust an apologetic transgressor who repeatedly harmed for the *same* reason, compared to an apologetic transgressor who repeatedly harmed but for *different* reasons. We presented children with three stories wherein a victim’s possessions (e.g., necklace) were repeatedly damaged by the same actor who always apologised. In the Same Reason condition, the actor gave the same reason for both of her transgressions (“I’m sorry, it slipped from my hands”). In the Different Reason condition, the actor gave a different reason after each offence (“I’m sorry, it slipped from my hands” and “I’m sorry, I was trying to put it on”). In the Baseline condition, both transgressions were caused by a third-party (the victim’s cat) under the watch of the actor, with the same reason given following each transgression (“I’m sorry, your cat broke the necklace”). After witnessing both transgressions, children

were asked 1) whether the victim should continue to play with the actor [hereafter the *Victim* question], and 2) whether the participants themselves would trust the actor with their own possessions (e.g., their necklace) [hereafter the *Child* question]. Third-party scenarios (i.e., the child as an observer) were used over first-party scenarios (i.e., the child as the victim) to explore children's agent-neutral understanding for what is an (in)appropriate justification for a recurrent harm, and not just when they are the victims themselves (Tomasello & Vaish, 2013). We predicted children to be most trusting in the Baseline condition since preschoolers evaluate transgressors with "low" responsibility for a harm more positively than those with "high" responsibility (Bennett & Earwaker, 1994; Darby & Schlenker, 1982). We also expected 5-year-olds, and especially 6-year-olds, to trust the actor more in the Different Reason condition than in the Same Reason condition.

Additionally, the latency of children's responses was measured as an index of their uncertainty. Several studies have found that the longer individuals take to respond to a question or task, the less confident they feel in the accuracy or correctness of their decision (Koriat & Ackerman, 2010; Koriat et al., 2006; Lyons & Ghetti, 2011). Preschool children, for example, are often slower to respond to situations within which the correct response is unclear (Haun & Tomasello, 2011; Waddington et al., 2022). Based on these findings, if participants doubt whether their decision to trust the actor is correct, this might result in longer response times than when they feel more certain. We thus explored whether children would be slower to trust the actor in the Same Reason condition than in the other two conditions.

We selected these age groups (5- and 6-year-olds) because although children respond appropriately to others' apologies from age 4 (e.g., Vaish et al., 2011), their understanding of (un)acceptable justifications for harmful acts appears to develop around a year later (Kangnesser et al., 2021; Mammen et al., 2018, 2019). Children's evaluations of transgressions and their ability to reason about reasons, however, continues to improve after age 5

(Mammen et al., 2021; Schmidt et al., 2016), as do their broader socio-cognitive skills (Wellman et al., 2001).

Method

The procedure, hypotheses, sample size and statistical analyses were preregistered (<https://osf.io/9gn6e>).

Participants

A total of thirty-six 5-year-olds ($M = 5;5$ [years; months], $Range = 5;0-5;11$, 17 girls) and thirty-six 6-year-olds ($M = 6;5$, $Range = 6;0-6;11$, 21 girls) participated in the study and experienced all conditions. The sample size was based on previous apology-related studies using similar procedures (e.g., Banerjee et al., 2010). Children were recruited from a database of families living in northwest England. They were all native speakers of English and had various socioeconomic backgrounds.

Materials

In the first set of warm-up trials (5 trials), children were introduced to two objects on-screen and asked to locate one. In the second warm-up (4 trials), children were presented with four short vignettes depicting two characters and were asked who was more likeable. In the test trials (3 trials), children heard three stories in each of which a transgression was repeated by an apologetic actor (24 PowerPoint slides, see Supplementary Materials A for all stimuli and narration). The study was narrated live by a male experimenter (E).

Procedure

Children and their parents attended a Zoom meeting in which E shared the PowerPoint presentation. In the first set of warm-up trials, children were presented with slides containing two objects (e.g., rainbow and sun) and were asked to point at one of the objects, in particular, to ensure that the shared screen was fully visible to the child. In the second set of warm-up trials, children were presented with four short vignettes depicting a “good” and

“bad” character. In vignette 1, E narrated a story in which a boy fell over and hurt himself while playing with two friends. One friend helped him, while the other stood idle. Children were then asked, “which boy do you like more?” to familiarise children with evaluating others’ interpersonal acts. The next three vignettes followed a similar structure. In vignette 2, one girl shared her toy with her friend, while the other did not. In vignette 3, one boy politely requested a ball (said “please”), while the other did not. In vignette 4, one girl expressed gratitude for a gift (said “thank you”), while the other did not. Across the four vignettes, which character was presented first in the story, and on which side of the screen, were counterbalanced.

After the warm-up, children experienced three test trials, one for each condition in counterbalanced order. In the first test trial, children saw the victim and actor drawing pictures with a cup of water and crayons between them. The actor knocked over the cup which ruined the victim’s picture. The actor apologised and gave a reason for her transgression: “I’m sorry, I did not see the cup”. Both then tidied up the mess and returned to their colouring. The second transgression was identical to the first, except for the reason given by the actor. In the Same Reason condition, the actor gave the same reason for her transgression (“I’m sorry, I did not see the cup again”). In the Different Reason condition, she gave a new reason (“I’m sorry, this time I was trying to get a crayon”). In the Baseline condition, the victim’s cat jumped onto the table knocking over the cup under the watch of the actor. The actor apologised and gave a reason: “I’m sorry, your cat knocked over the cup”. The transgression was repeated, and the same reason was given (“I’m sorry, your cat knocked over the cup again”; see Appendix D for the stimuli and narration of this story in each condition).

After witnessing both transgressions, E asked one comprehension question which varied by condition. In the Same and Different Reason conditions, children were reminded that the actor was responsible for both transgressions and asked: “Did [the actor] give the same

reason, or were they different?”. In the Baseline condition, children were reminded that the actor was not directly responsible for the transgressions and asked: “Was it the cat who ruined the picture both times?”. If the child answered correctly, E repeated the child’s answer and proceeded. If the child answered incorrectly, E provided the child with the correct information. Next, children answered two test questions in fixed order. First, for the Victim question, the victim and actor were shown together onscreen. Children were asked: “The [victim] wants to make another picture. Should she play with the [actor] again, or play on her own this time?”. Second, for the Child question, a picture (which was said to be the participant’s own) was placed beside the actor and children decided whether they would trust her to look after it: “This is your picture. The [actor] wants to look after it for you. Would you let her look after it or not look after it?”.

The subsequent test trials followed the same procedure as the first, only the stories differed. In the second trial, children saw the actor repeatedly break the victim’s necklace. In the Same Reason condition, she gave the same reason for both transgressions (“I’m sorry, I was trying to put it on (again)”). In the Different Reason condition, she gave a different reason each time (“I’m sorry, I was trying to put it on” and “I’m sorry, this time it slipped from my hands”). In the Baseline condition, the victim’s cat jumped onto the table breaking the necklace under the watch of the actor. The actor apologised and gave the same reason each time (“I’m sorry, your cat broke the necklace (again)”).

In the third trial, children saw the actor repeatedly burst the victim’s balloon. In the Same Reason condition, she gave the same reason for her transgressions (“I’m sorry, I was trying to make it bigger (again)”). In the Different Reason condition, she gave a different reason each time (“I’m sorry, I was trying to make it bigger” and “I’m sorry, this time I was trying to blow it up fast”). In the Baseline condition, the victim’s cat jumped onto the table

bursting the balloon under the watch of the actor. The actor apologised and gave the same reason each time (“I’m sorry, your cat popped the balloon (again)”).

The order of conditions, the story appearing in each condition, and which reason was repeated in the Same Reason condition from the pair used in the Different Reason condition (1st or 2nd), were counterbalanced.

Coding

We first coded for whether or not children trusted the actor in each test question (Victim, Child). We also coded the latency of children’s responses to each test question. Latency was calculated (in seconds) from when E finished asking the question to when the child began to respond (either verbally or nonverbally). All coding was done from video recording.

Results

The dataset and statistical scripts are publicly available at: <https://osf.io/t9hjn/>.

We ran two sets of analyses: one on children’s responses to each test question (preregistered) and one on the latency of their responses (preregistered as exploratory). To identify children’s likelihood of trusting the actors, a Generalised Linear Mixed Model (GLMM) was fitted with binomial error distribution using the “GLMMadaptive” package in R (R Core Team, 2022; Rizopoulos, 2022)¹. Effect sizes were estimated by dividing the variance of the fixed factors by the sum of the variance of the fixed factors and the residual variance to arrive at an estimate comparable to the r^2 of linear regressions (e.g., Nakagawa & Schielzeth, 2013; Nakagawa et al., 2017). A total of 432 observations were included in the analyses, with the unit of analysis being children’s responses to each test question (Victim, Child). The response variable was the binary measure of whether or not children chose to trust the actor. The full

¹ The model was initially built in the “lme4” package (Bates et al., 2015). This model, however, was subject to singular fit, which was not the case when using the “GLMMadaptive” package (see Supplementary Materials B for the “lme4” analysis of children’s responses). The results were the same except that the difference between the Same Reason and Different Reason conditions was marginally significant ($z = 1.90, p = .058$).

model included the predictors of age (treated as a continuous variable, z-transformed), condition (Baseline, Different Reason, Same Reason), test question (Victim, Child), their three-way interaction, and the control predictors: trial order (1-3), story type (picture, necklace, balloon), gender, and the random slope of condition nested in child ID. The null model included only the control predictors and random effects. The full model improved the fit ($\chi^2 = 82.67$, $df = 11$, $p < .001$). Neither the three-way interaction between age, condition, and test question ($\chi^2 = 0.03$, $df = 2$, $p = .984$) nor the two-way interactions: age and condition ($\chi^2 = 1.79$, $df = 2$, $p = .409$), age and test question ($\chi^2 = 3.12$, $df = 1$, $p = .077$), condition and test question ($\chi^2 = 2.32$, $df = 2$, $p = .313$) were significant. The reduced model without interaction terms revealed significant main effects of condition ($\chi^2 = 25.87$, $df = 2$, $p < .001$, $r^2 = .3$), test question ($\chi^2 = 47.14$, $df = 1$, $p < .001$, $r^2 = .2$) and order ($\chi^2 = 8.72$, $df = 1$, $p = .003$, $r^2 = .4$; see Supplementary Materials C for the model summary). Both age groups were most trusting in the Baseline condition as compared to the Different Reason ($z = 4.03$, $p < .001$) and Same Reason conditions ($z = 5.35$, $p < .001$). Children's trust between the two reason conditions also varied ($z = 1.99$, $p = .047$), with children trusting the actor more in the Different Reason condition than in the Same Reason condition (see Figure 4.1). Both ages trusted the actor more for the Child question (i.e., whether the participants would trust the actor with their own possessions) than for the Victim question (i.e., should the victim continue to play with the actor). Children became less trusting in later trials.

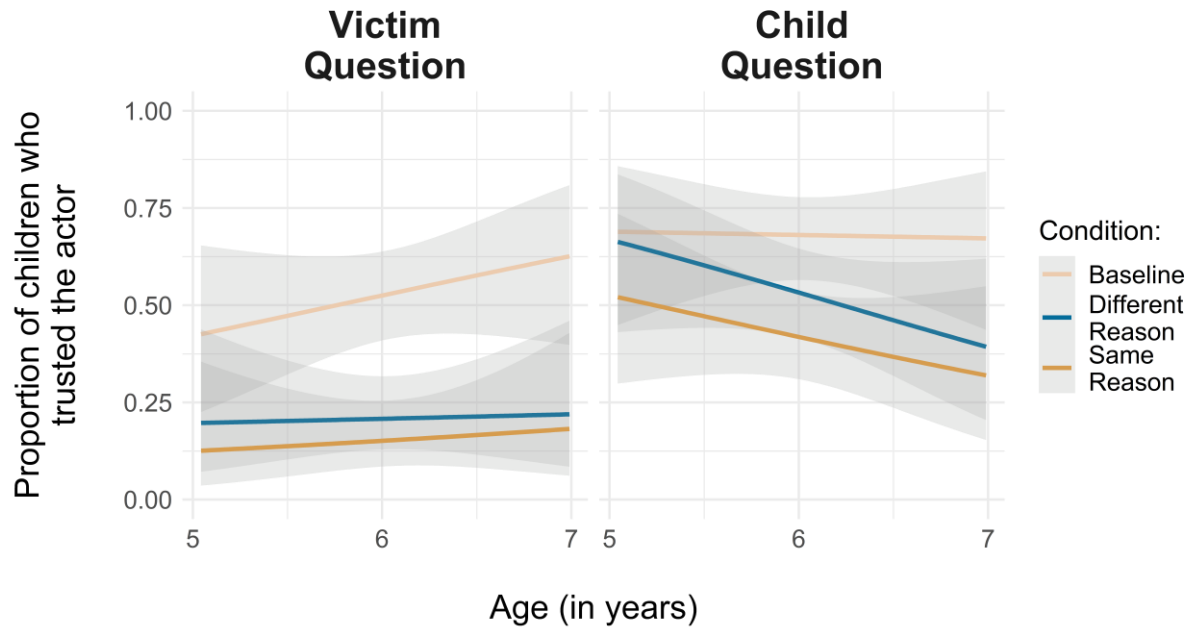


Figure 4.1: Proportion of trust responses.

The proportion of children who trusted the actor by age, condition, and test question. Lines represent fitted data with 95% confidence intervals.

To explore the latency of children’s responses, we fitted a GLMM with Gaussian error distribution using the “nlme” package (Pinheiro et al., 2022)². A total of 432 observations were included in the analyses, with the unit of analysis being children’s responses to each test question (Victim, Child). The response variable was the delay in children’s responses (in seconds) to each question. The models were the same as the previous GLMMs except that children’s trust responses (trust, no trust) was added as a predictor variable, leading to a four-way interaction. The full model improved the fit ($\chi^2 = 343.86$, $df = 23$, $p < .001$). The four-way interaction between age, condition, test question, and response was not significant ($\chi^2 = 1.01$, $df = 2$, $p = .605$). The reduced model without this four-way interaction revealed a significant three-way interaction between condition, test question, and response ($\chi^2 = 10.45$, $df = 2$, $p = .005$, $r^2 = .6$; see Supplementary Materials E for the model summary). The pattern of results

² The model was initially built in the “lme4” package (Bates et al., 2015). This model, however, was also subject to singular fit, which was not the case when using the “nlme” package (see Supplementary Materials D for the “lme4” analysis of children’s latency). The results were the same across both model types.

was the same for the Baseline and Different Reason conditions: children were equally fast to trust, and slow to distrust, the actor across both test questions (see Figure 4.2). In the Same Reason condition, on the other hand, children were faster to distrust the actor across both test questions, and were slower to trust her, especially when answering the Victim question.

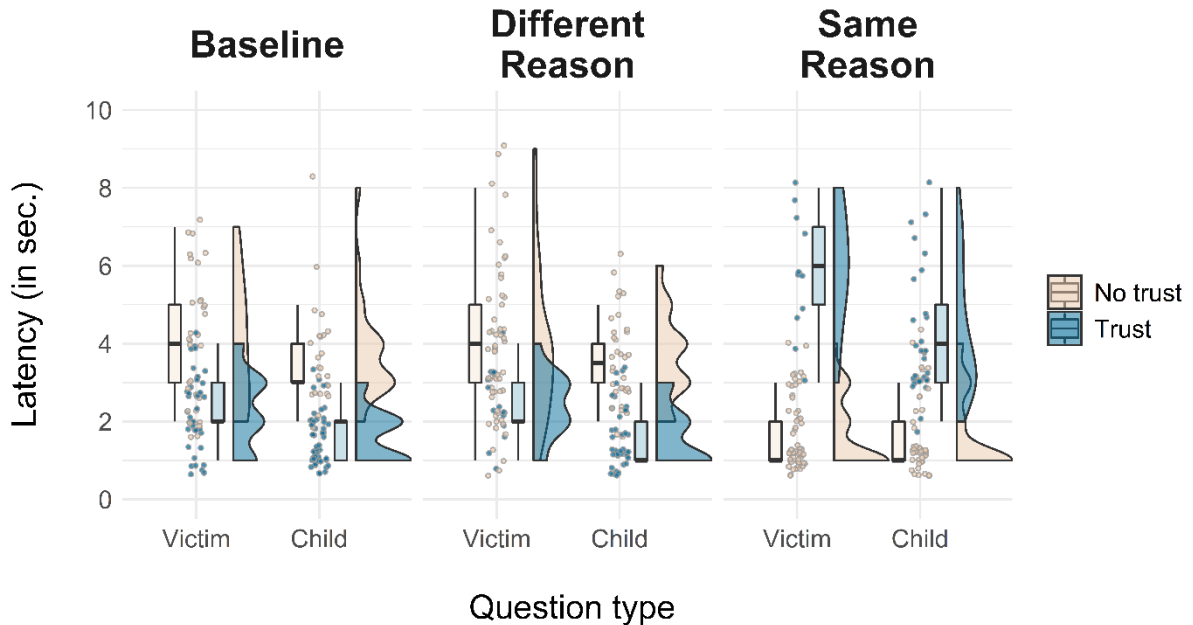


Figure 4.2: Delay in children's responses.

The latency of children's responses by condition, test question, and whether or not they trusted the actor. For each grouping, coloured dots show the individual datapoints. In the box-plots, the bold black lines show the median. Curves represent the probability distribution of the data.

Discussion

In the present study, 5- and 6-year-old children witnessed a victim being repeatedly harmed by an apologetic actor who either gave the same reason for harming them on both occasions, different reasons for each occasion, or by an apologetic actor who was present but not personally responsible for the damage done. When the recurring harm was not caused directly by the actor but happened under her watch, children were most trusting. When the actor was responsible for the recurring harm, both ages trusted her more when she gave different reasons for each transgression than when she repeated the same reason. Thus, when the

actor doubly transgressed, children evaluated her second apology more positively and were more trusting where different reasons were provided.

We further found both age groups were faster to trust, and slower to distrust, the actor who gave different reasons for her transgressions compared to the actor who gave the same reason. The latency of children's responses in the Different Reason condition actually mirrored that of the Baseline condition, in which the actor was not directly responsible for the damage done. For the Same Reason condition, on the other hand, children showed the reverse pattern; slower to trust, faster to distrust. Children are known to take longer to respond to events within which they feel uncertain or conflicted (e.g., Lyons & Ghetti, 2011; Waddington et al., 2022). Children's delay in trusting the actor in the Same Reason condition might thus reflect a decision made with less confidence that it was the "correct" answer. Taken together, these findings suggest that by age 5, children recognise that giving different reasons in one's apologies is a better or more appropriate response to justify reoffending.

Our findings have a number of implications. First, previous work by Oostenbroek and Vaish (2019) found 4-year-olds, and especially 5-year-olds, recognise that apologies discourage repeat offences. In that study, however, children only *imagined* the likelihood of an apologetic transgressor causing future harm. Here, children were *confronted* with such an event. Thus, our study extends previous findings by showing how preschool children respond to transgressors who say the right things (i.e., an apology) but continue to do the wrong things, and thus their awareness of the boundaries or scope of apologies. That is, children by this age have begun to recognise the contexts within which an apology may not be enough to set wrongs right. Apologies are thus not "free passes" that always wipe the slate clean. Moreover, prior research shows young children prefer and are more forgiving of transgressors who have "low" responsibility for a harm caused than transgressors who are directly responsible

(Darby & Schlenker, 1982). Our findings show that this preference also extends to repeat offences.

Second, although 5-year-olds are capable of distinguishing “good” from “bad” reasons for isolated transgressions (Kanngiesser et al., 2021; Köymen & Tomasello, 2020; Mammen et al., 2019), no research had explored their understanding of (in)appropriate reasons for a recurrent harm. In the current study, 5- and 6-year-olds found the actor to be more trustworthy when she gave different reasons for each of her transgressions, suggesting that this was recognised by children to be a better or more acceptable response to reoffending than when she gave the same reason. Children at this age thus realise that sometimes even “good” reasons are not sufficient if they are used repeatedly for the same transgression. Our use of third-party scenarios also shows that preschoolers do not need to be the recipient of harm to identify what is and is not an appropriate justification for it to be repeated. This provides further evidence for their agent-neutral application of social norms by this age, and for the ways in which everyone ought to treat one another (Tomasello & Vaish, 2013). We would predict, however, that the same pattern of results would be found had children been the victims of these repeat offences. Research has shown, for example, that preschool-aged children forgive remorseful transgressors across first- and third-party contexts (Oostenbroek & Vaish, 2019; Vaish et al., 2011) and frequently intervene both as victims of a transgression and as unaffected third parties (Hardecker et al., 2016).

Third, our findings support and add to the literature on young children’s ability to use past information to simulate others’ future conduct. Previously, Boseovski and Lee (2006) found 3- to 6-year-old children were more sensitive to consistency information (e.g., behaviours directed toward the same recipient) than distinctiveness information (e.g., behaviours directed toward different recipients) when predicting how a reoffender might behave in future. When the victim was kept consistent in the present study, 5- and 6-year-olds were able

to use what was both similar (i.e., Same Reason condition) and distinct (i.e., Different Reason condition) about the actor's responses to infer her future behaviour and subsequent trustworthiness.

Although the overall pattern of results was as expected—with children being most trusting in the Baseline condition, followed by the Different Reason condition, and least trusting in the Same Reason condition—children displayed relatively low levels of trust throughout. Moreover, the difference in children's trust responses between the two reason conditions was quite modest (see Figure 4.1). One possible explanation might be that children expected the actors to offer more than merely an apology and explanation, particularly following the reoffence. Previous research has found that children often prefer transgressors who provide some form of compensation over transgressors who only apologise (e.g., Drell & Jaswal, 2016; Irwin & Moore, 1971), and this may be especially true for repeat offenders. Indeed, a small proportion of children spontaneously justified their decision not to trust the transgressor by referring to her lack of restitution (e.g., "She should give [the victim] her balloon"). Alternatively, or additionally, a more elaborate apology from the actor was perhaps needed (e.g., "I'm sorry, [...]. It won't happen again") to better reassure children (Darby & Schlenker, 1982). Thus, although children generally responded more positively when the actor gave different reasons for her harms, it may be that for some participants neither response (i.e., same or different reasons) was enough to re-establish trust.

Children's responses also varied across both test questions. Overall, both ages were less trusting, and in the Same Reason condition, were slower to answer the Victim question (i.e., should the victim continue to play with the actor) than the Child question (i.e., whether the participants would trust the actor with their own possessions). One plausible interpretation could be that children felt concern for the victim, especially following the second offence, and were thus reluctant to subject her to a third potential transgression. Even in the

Baseline condition, in which the actor was not directly responsible for the harm caused, around half of children continued to advocate for the victim to play alone. Conversely, for the Child question, children had not previously been let down by the actor and were thus perhaps more willing to offer the benefit of the doubt and interact with her (Boseovski & Lee, 2008).

Although both age groups were expected to show the same pattern of results, we anticipated the pattern to be clearer for older children. Prior research, for example, shows children's understanding for what makes an (in)appropriate justification continues to develop into the school years (e.g., Schmidt et al., 2016). No age differences, however, were found in the current study. Repeatedly using the same excuse was thus perhaps such an insufficient response that children in the younger age group were able to perform as well as their older peers.

The present findings show 5-year-old children selectively avoid interacting with those who continue to give the same reason in their apologies for repeat offences, and thus recognise the contexts within which apologising may not be sufficient. The underlying reasons behind children's reluctance to engage with the Same Reason actor, however, remain an open question. On the one hand, children may have perceived the Same Reason actor and her apologies to be insincere—that she was not “genuinely” sorry—since she violated her assurance of better behaviour by repeating the harm she had previously apologised for (Oostenbroek & Vaish, 2019). On the other hand, children might have perceived the Same Reason actor as being especially negligent, since she knew the negative consequences of her actions (especially after the first offence) but failed to act with due care to avoid them. Already by 3-years-old, children are sensitive to the carefulness with which an action is performed (Nobes et al., 2009). A third possibility is that children may not have been making socially- or morally-relevant judgements at all, but rather evaluated the actor's competence more generally. Under this leaner interpretation, the Same Reason actor lacked the ability or skills necessary to

avoid making the same mistakes and was therefore avoided by children for her ineptitude rather than on some judgement of her character. For example, children aged 3- and 4-years-old are known to view incompetent people more negatively (e.g., Koenig & Jaswal, 2011).

Whether children evaluated the actor in the Same Reason condition to be negligent, incompetent or insincere would have led to exactly the same behaviour (i.e., avoidance) and, therefore, could not be teased apart in our study. Future research could investigate the precise motivation underlying children's wariness and general distrust of those who persistently harm to the tune of the same apology. What our study does show is that apologies do not, by themselves, excuse transgressions equally, otherwise children would not have distinguished between the two actors in the Same Reason and Different Reason conditions.

A potential limitation of the current study were the demands placed on children's memory. Each trial consisted of two transgressions (six transgressions, in total) in which an actor gave either the same reason or different reasons for the hurt she had caused. In their evaluations, children were therefore required to simultaneously keep in mind who was responsible for both outcomes and whether the reasons for these outcomes varied accordingly. To reduce the memory load, however, children were reminded of the culprit of each transgression (i.e., whether it was the actor or the victim's cat) and of the reasons given (i.e., same or different) before the test questions were presented in each trial.

Another possible concern is that not all stories presented to participants resulted in the same kind of damage to the victim's property. In the picture and balloon stories, for example, the actor caused lasting damage (i.e., neither she nor the victim could repair the ruined picture or burst balloon). The damage caused in the necklace story, on the other hand, was reversible, with the victim repairing her possession ahead of the actor breaking it again. The actor in the necklace story, then, was able to repair the damage she had caused, but chose not to. Since children by this age express guilt for their own transgressions and attempt to repair the

damage done (e.g., Vaish et al., 2016), participants in the present study might have evaluated the necklace-breaking actor more harshly. It is important to note, however, that we did not find an effect of story type on either of our measures. Nonetheless, further exploration into children's evaluations of transgressors who are either unwilling or unable to right their wrong would make for interesting future research.

To conclude, apologies often represent assurances of behavioural reform. When these assurances are violated, such as when a transgression is repeated, reasons can be given to explain to victims and others why the transgressor's assurance still stands. Here, we provide evidence that the kind of reasons given by a reoffender matter to children. From age 5, children begin to distinguish between better and worse ways to justify repeating harmful acts and recognise that apologising may not always suffice.

Chapter Five

Summary, general discussion and future directions

The central argument presented in this thesis is that children by the end of preschool are largely moral agents whom evaluate themselves and others normatively. I have reviewed evidence in support of and reported experiments that extend this view. For each of these experiments, I summarise below what significance its findings have for the study of children's socio-moral development and consider some of the issues it brings to the fore, including limitations and possible follow-ups. A brief conclusion then follows to close.

1 Chapter Two: Children's self-evaluations

1.1 Summary

Chapter Two reports an experiment in which 3- and 5-year-old children made a variety of justified and unjustified requests. Children requested resources that they either did or did not need from an experimenter who either did or did not need them. In addition to the hesitation and latency of their requests, children's posture was assessed using depth sensor imaging technology as an index of their emotional expression. The results suggest both age groups were slower and more hesitant to make an unjustified request (i.e., the child did not need the sticker, but the experimenter did), and also showed lowered body posture compared to when making a justified request (i.e., the child needed the sticker, but the experimenter did not). Three-year-olds showed more pronounced changes in their posture, whereas 5-year-old children's emotional expression was overall more blunted. Rather, older children relied more on verbal indirect utterances (e.g., "You've got lovely stickers") as opposed to direct ones (e.g., "Can I have that sticker") when making unjustified requests. Already at age 3, children tease apart their wants from their needs and account for what is expected of them when asking for help.

1.2 Issues raised

The present study shows that during the preschool years, children apply prosocial norms in an impartial and agent-neutral way, such that the same standards for requesting help are understood to apply universally to others as well as oneself—there are no exceptions. Three-year-old children’s normative judgements were previously thought to be limited to collaborative tasks, during which they feel obliged to treat their co-dependent partners fairly (e.g., Hamann et al., 2011). The present findings suggest 3-year-olds extend these moral evaluations beyond the confines of collaboration, namely to parallel, independent activities.

Importantly, children’s judgements in this study were *prospective*. In what is perhaps the first evidence for it in young children, 3- and 5-year-olds showed what Korsgaard (1996) calls “reflective endorsement” when requesting from others. They asked themselves whether their actions were the “right” thing to do *before* acting upon them (e.g., “Do I need this sticker? Is it fair to ask for hers?”). If the answer was “no”, children were more reluctant and expressed negative emotions in either their posture or in the indirect way in which they conveyed their request. If “yes”, on the other hand, children showed none of the above. Preschoolers, then, already simulate their interpersonal actions ahead of time and feel guilty³ for transgressions that have yet to come to pass.

This study also makes a methodological contribution. Previous studies using the Kinect have largely focused on the physiological effects of positive emotions in children (e.g., Hepach et al., 2017b, 2022; Hepach & Tomasello, 2020), with research into negative emotions limited

³ Throughout this study, caution was taken not to label which specific emotion was being expressed by children. But of the three negatively valenced self-conscious evaluative emotions, guilt is the most likely candidate. Embarrassment is usually reserved for minor social *faux pas* with little to no moral implications (Tangney et al., 1996). Distinctions between shame and guilt are more opaque. However, shame typically follows the failure to live up to one’s perception of the self, questioning one’s core ideals and resulting in social withdrawal (“I can’t believe I did that”), whereas guilt pertains only to the harmful act itself (“I can’t believe I did *that*”) which motivates reparation but spares one’s core identity from scrutiny (e.g., Barrett et al., 1993; Lewis, 1971; Tangney & Dearing, 2004). Since children were not directly responsible for their requests, their evaluations most likely focused on the acts they were made to make rather than on their sense of self.

mostly to adult populations (von Suchodoletz & Hepach, 2021) and to the use of manual coding procedures which are more subjective (Lewis et al., 1992; Montepare et al., 1987). Using the Kinect to identify changes in children's posture in response to negative affect (e.g., guilt) extends and further validates the use of this technology, and provides us with a more holistic understanding for how different emotions manifest in children's outward displays.

More recently, researchers have begun to use the Kinect to measure postural markers of negatively valenced emotions in young children, which has led to debate around how these emotions are displayed. A study by Gerdemann et al (2022a), for instance, found guilt-inducing situations led to a decrease in children's upper-body posture only (see also Hepach & Tomasello, 2020). This conflicts with the current study's findings which suggest negative emotions result in global changes (lower body and upper body) in children's posture. These discrepant findings warrant explanation.

The key to understanding this discrepancy is in the way both studies processed its posture data. In the present study, changes in hip height and chest height were analysed separately. The study by Gerdemann and colleagues (2022a) used a single measure of "chest expansion" which subtracted changes in hip height from changes in chest height. Though a novel way to quantify postural change, this method also limits the authors' interpretation of the data. To explain, when using a measure of "chest expansion", changes in the upper body can be observed both when hip height remains stable (and chest height changes), and when hip height and chest height change (to varying degrees). The point being, which of these two possibilities is true, we cannot say. Thus, having two separate analyses (usually hip and chest) is advised, as it provides a fuller picture of how emotions present themselves throughout a person's body (see Hepach et al., 2015). To add, also, that since this chapter was published, a recent Kinect study which analysed hip height and chest height independently from one another found that children's entire posture (lower body and upper body) varied in response to unfairness

(Gerdemann et al., 2022b). As a measure of emotional expression, this technology and how best to use it is thus clearly still in its infancy, and is, therefore, subject to future research. How the Kinect pairs with other well-established measures of physiological arousal like pupil dilation (Bradley et al., 2008), heart rate (Libby et al., 1973), and skin conductance (Gummerum et al., 2020) will be of particular interest moving forward. This study also raises four further questions for future studies.

Objective or second-personal normativity. During preschool, children transition from a second-personal morality to a norm-based one (Tomasello, 2019). This transition gives rise to the question of whether children’s responses while making an unjustified request in the current study was a kind of second-personal guilt (based on a sense of self-other equivalence) aimed only at the requestee, or a more “objective” guilt from failing to conform to the moral norms at large. This is an important yet potentially challenging question to answer empirically. However, one approach might be to use a group norm creation paradigm (e.g., Friedrich & Schmidt, 2022; Schmidt et al., 2016b), wherein participants witness peers or puppets make unjustified requests that are agreed to be acceptable. If children are subsequently less reluctant to make unjustified requests and their posture remains relatively stable, this might suggest a more “objective” judgement from children since these requests were the suggested norm.

Role of reputation. Another open question is the possible role that reputation plays in young children’s requests. Preschool children’s help-giving is often motivated by a desire to enhance the impression made on others (Hepach et al., 2022). At a similar age, children also work hard to avoid developing a bad reputation (e.g., Evans & Lee, 2013). With the effect of reputation so wide-ranging, it is worth asking whether the present findings are related to or interdependent from children’s reputational concerns. It is certainly plausible that children’s reluctance to engage with unfair requests is based on both moral and strategic principles. Perhaps the simplest way to approach this question is to have children make a variety of justified and unjustified

requests in the presence or absence of a (peer) audience. This might enable future researchers to tease apart and identify whether and to what extent preschoolers have an additional, strategic motivation to safeguard their reputation when requesting from others.

Significance of postural displays. Using depth sensor imaging technology (i.e., Kinect), young children's posture was found to decrease in response to making unjustified requests. This study, however, leaves open whether these bodily changes are identifiable to the naked eye (with changes in chest height of less than a cm) and, if so, whether these changes convey the right messages to others independent of other emotional cues (e.g., facial expressions). Research using coding procedures suggest that adult raters can identify emotions from gait information (Montepare et al., 1987), and research with children shows 3- to 7-year-olds can detect pride from still-images (Tracy et al., 2005). But no research, to date, has explored whether the same is true for young children when emotions turn negative. To present preschool children with video recordings of peers making various justified and unjustified requests (with the subject's facial expressions obscured) would go some way toward addressing whether children can correctly identify others' negative emotional states based solely on their posture.

Cultural differences. The participants of this study were predominantly from middle-class families living in a WEIRD culture. Cross-cultural research has identified nuances in how individuals from different cultures make and perceive requests (e.g., Blum-Kulka et al., 1989; Brown & Levinson, 1987; Economidou-Kogetsidis, 2010; Kim & Wilson, 1994). For example, children from certain Latin American cultures (e.g., Mexico, Guatemala) are expected to ask for help unobtrusively (e.g., standing quietly beside the teacher) out of respect—or *respeto*—for the requestee (Ruvalcaba et al., 2015; see also Gallimore et al., 1974 for similar findings with Hawaiian children). To disrupt others in order to secure help is discouraged and might be considered a reflection of the child's upbringing and broader family environment (Calzada et al., 2010; de Guzman et al., 2012). It is reasonable, then, to think that cultural differences specify

and define what kind of requests are justified and how requesters might respond when they are not. This would seem to be an important avenue for future empirical investigation.

1.3 Limitations

Free versus forced requests. Children in this study were encouraged by an experimenter to make a variety of (un)justified requests to a requestee. This was an intended feature of the study, with the experiment modelled closely on fieldwork done by Milgram and Sabini (1978), whom instructed students to make unreasonable requests of fellow NYC subway commuters. The distinction between “free” and “forced” requests is important, however. Although no child reasoned with or conveyed to the requestee that her request was at the experimenter’s behest, simply knowing this was the case might have made children feel less responsible for their actions. For researchers interested in how and whether young children freely and spontaneously make unjustified requests for themselves, one might choose to replicate the present study but without the experimenter’s suggestions. How might this affect children’s responses? On the one hand, being solely responsible for the request might result in children expressing higher levels of reluctance and negative emotion. On the other hand, children might react similarly whether the unjustified request was their idea or not. Though able to distance themselves from the act (i.e., it was not their idea), Milgram’s students still reported feelings of considerable unease while requesting because they remained the face of the request (Milgram & Sabini, 1978). Appearing as though the “owner” of a request might be enough for individuals to evaluate them as precisely that—their own.

Requesting from peers. In the present study, the experimenter and the requestee were both *adults*. This raises another concern as to whether children would behave in the same way if making unfair requesting of a peer. As documented above, adults are viewed as authority figures whose presence leads young children to adapt their behaviour accordingly (Shaw et al., 2014). Thus, participants’ emotional responses in this study might have been amplified

compared to how they might feel requesting from another similarly-aged child. However, children's early requests are primarily directed toward caregivers and other adults (e.g., Ervin-Tripp & Gordon, 1986). Testing children's responses to making unjustified requests in this context was thus a natural starting point from which additional research might explore peer-on-peer requesting behaviour.

2 Chapter Three: When justifications become necessary

2.1 Summary

Chapter Three reports two experiments that required children to embed their normative judgements into a partner-choice task. In Study 1, 4- and 5-year-old children were presented with two intent-based or belief-based accidents. Both transgressors apologised for the harm they had caused, but one also gave a reason for her transgression. The results found that 5-year-olds, but not 4-year-olds, favoured the reason-giving transgressor after witnessing belief-based accidents, whereas no preference was found for either transgressor following the intent-based accidents (meaning only an apology was needed). In Study 2, to ensure that children paid attention to the content of the reasons given, the quality of the reasons were manipulated. One transgressor gave a "good" reason for a belief-based harm, the other gave a "bad" reason. The results show 5-year-olds distinguished between and preferred the "good" reason over the "bad" reason. Thus, children at age 5, and possibly no earlier, recognise that some mistakes warrant further explanation or justification, while others do not.

2.2 Issues raised

An essential part of reasoning is knowing what information, values and beliefs are shared in one's common ground and which are not (Köymen & Tomasello, 2020). This study shows 5-year-old children can identify which transgressions warrant further explanation based on what is and is not in their moral common ground. During the intent-based accidents, it was already mutually understood through facial expressions (i.e., shocked expression) and other

cues (i.e., gasps) that the harm was accidental, meaning no further explanation was needed. The same cannot be said, however, when the accidents were belief-based. Here, children's normative judgements relied upon the transgressor's reason for the hurt caused because without it her intentions—whether she meant the harm or not—remained unclear. This marks a clear contribution to the literature. Most research has explored how children present and respond to reasons that are based on appropriate common ground assumptions (e.g., Köymen et al., 2014; Mammen et al., 2018). In this study, however, children used common ground information to gauge whether or not reasons were needed in the first place.

When reasons were necessary, children distinguished between their quality. They did not show a simple preference for whomever had the most to say, as has been previously documented in children of this age (e.g., Mercier et al., 2014). Neither did they accept whatever justification was put forward, since giving a “bad” reason had a negative impact on children's normative judgements. Five-year-olds, then, paid close attention to whether the transgressor's justification aligned with shared values (e.g., respecting property rights) and judged her harshly if it did not. Together, these findings add to a growing body of evidence which suggests children's sensitivity to (un)acceptable reasons during moral discourse is already surprisingly sophisticated by the preschool years (Kanngiesser et al., 2021; Mammen et al., 2018, 2021).

But evaluating the reasons that others give is only half the story. Oftentimes, we are expected to explain or justify why we chose to endorse or refute a prior reason—a process known as “meta-talk” (Köymen & Tomasello, 2020). Providing reasons for reasons is a special kind of reasoning found in children from age 5 (Hartwell et al., 2022; Köymen & Engelmann, 2022; Köymen et al., 2020; Köymen & Tomasello, 2018). However, studies of children's “meta-talk” have focused almost exclusively on its use in collaborative problem-solving paradigms. In this study, children were asked to justify why they had chosen to help, play with, and trust one of the transgressors over the other, which led many 5-year-olds to reference the transgressor's

reason in their reasons (e.g., “Because she thought it was hers”). These justifications show that preschool children also engage in “meta-talk” when reasons turn moral.

The pattern of findings described above were not found across both age groups, however. Unlike their older peers, 4-year-olds in Study 1 were seemingly unaware and unmoved by the reasons provided by the transgressor. This age-related difference might thus indicate a turn in preschool children’s reasoning about belief-related harms and the reasons that help to justify them. Whether 4-year-olds’ at-chance performance relates to a lack of competency around moral argumentation (Kanngiesser et al., 2021), morally-relevant false beliefs (Killen et al., 2011), or both, is an interesting question for future research. Further directions for future study are described below.

“Happy” accidents. The focus of the present study was on children’s responses to intent-based and belief-based accidents. There is, however, a third kind of accident that has yet to be explored empirically. Like belief-based accidents (intended action-unintended outcome), the intention and outcome are unmatched but in the reverse. A transgressor might, for example, intend to dispose of a vase belonging to another individual but then accidentally drop it on the way to the trash. The action is unintended—the goal was to throw the object away—but the overall outcome—to be rid of the vase—is satisfied. How preschool children evaluate these “happy” accidents and how effective reasons or justifications might be for such transgressions remain open questions.

Cultural differences. Cultures vary in the degree to which they are “mind-minded” (Barrett & Saxe, 2021). This, in turn, shapes the moral judgements made by its group members. In “opacity of mind” cultures, for example, adults prominently feature the outcomes of others’ actions in their appraisals (i.e., the damage) and largely forgo mental state information (i.e., intentions and beliefs), whereas in traditionally WEIRD societies the reverse pattern of intentions over outcomes is dominant (Barrett et al., 2016; McNamara et al., 2019). By the age of

5, children are well-versed in their particular culture's norms and values (e.g., Trommsdorff et al. 2007). Thus, to make sweeping conclusions about how all 5-year-old children evaluate apologies and moral justifications in relation to intent-based and belief-based accidents would be inappropriate. For a more holistic understanding, further cross-cultural research into how children living in different societies process and prioritise this information is needed.

2.3 Limitations

Free versus forced choice. This study used a partner-choice paradigm in which children selected one of two candidates to help, play with, and trust with a toy. Forced-choice tasks commonly feature in developmental research (e.g., Oostenbroek & Vaish, 2019; Vaish et al., 2011) because these methods typically place fewer demands on participants and allow researchers to identify systematic preferences in what are often complex decision-making processes for children. Forced-choice questions, however, also restrict and make certain assumptions about how participants might respond (Festinger, 1964). For example, asking the question “Whom would you rather play with, Person A or Person B?” presumes, perhaps erroneously, that children only want to play with one of these agents when, in fact, they might prefer to play with both or neither.

Children respond differently to tasks in which a single agent is presented rather than two contrasting agents (Boseovski & Lee, 2006; Ronfard & Lane, 2018). Most notably, Proft and Rakoczy (2019) found 5-year-olds evaluated belief-based accidents similarly to intent-based ones when a direct comparison between the two was absent. This was not the case in this study. In Study 2, 5-year-old children perceived the intent-based mistake (unintended action–unintended outcome) to be “more” of an accident than the belief-based one (intended action–unintended outcome). Different results from different paradigms may be expected, but future work would do well to explore the influences that free and forced choices have on children's responses during moral reasoning tasks.

A better “bad” reason. To ensure children paid attention to the quality of the reason given, a “good” reason for a belief-based accident (“I thought this was my picture”) was compared to a markedly “bad” reason (“I thought your picture wasn’t good”), which made the act and outcome appear intended. This seemed like the logical first step to identify whether children during preschool are sensitive to the ways in which a belief-related harm should and should not be justified by others (e.g., Mercier et al., 2014). Had children failed to distinguish between these two distinct reasons, future inquiry into their evaluations of more nuanced justifications would seem futile. Others might argue, however, that this comparison between clearly “good” and obviously “bad” stacked the deck too much in our favour. As such, a task for future research will be to investigate the extent to which children can evaluate other justifications for belief-related mistakes that are not so clearly “bad”. This could involve adapting the poor reason above to retain an element of false belief concerning whose artwork was thought to be substandard (e.g., “I thought the picture wasn’t good”). Based on the findings of the first experiment in this study, however, I would expect the same overall pattern of results. The transgressor who only apologised for her belief-based harm was selectively avoided by 5-year-olds, presumably because it remained unclear to them whether or not she meant the hurt caused. By extension, the explanation “I thought the picture wasn’t good” leaves open whether or not the transgressor knew the outcome of her actions—that is, that it was the victim’s picture she had damaged. Children’s uncertainty would unlikely bode well for this obscure offender.

3 Chapter Four: Reasons for reoffending

3.1 Summary

The study reported in Chapter Four had children evaluate the quality of reasons given for a repeat offence. Five- and 6-year-olds witnessed a recurring harm that was caused either by an apologetic actor who gave different reasons after each offence (Different Reason condition), the same reason (Same Reason condition), or who was present but not responsible for

the damage done (Baseline condition). The results show children were most trusting of the actor in the Baseline condition, followed by the Different Reason condition, and least trusting in the Same Reason condition. Both ages were also slower to trust, and faster to distrust, the actor in the Same Reason condition compared to the other two conditions. From age 5, children tell “good” reasons apart from “bad” reasons for repeat offences, with giving different accounts recognised to be a better or more appropriate response to causing the same harm.

3.2 Issues raised

Transgressions can and sometimes are repeated for one reason or another. The present study shows that around school entry, children can identify and collate the reasons given by a serial offender and use them to evaluate her trustworthiness in future activities. Five-year-old children are known to apply their group’s shared hierarchy of moral values to decide what makes an (un)acceptable reason for a single-issued transgression (e.g., Kanngiesser et al., 2021). But in this study, 5- and 6-year-olds went a step further and extended the use of this hierarchy to include reasons given for a repeated moral offence. In doing so, children of both ages recognised the limits or boundaries of moral justifications—that “good” reasons can turn “bad”. What is normally an appropriate reason, they understood, can become less appropriate under certain conditions—in this case, giving the same justification time and again. Thus, children’s moral reasoning during these later preschool years is already remarkably sophisticated, as they become increasingly skilled at integrating and evaluating past and present behaviour to infer and simulate future conduct (Boseovski & Lee, 2006).

Few studies into children’s understanding of remorse have looked beyond individual transgressions, which limits what can be said about its longer-term impact. Of those studies that have, preschool children were shown to treat apologies as implicit promises of more acceptable behaviour in future (e.g., Oostenbroek & Vaish, 2019). But the role that reason-giving plays in such assurances has received scant attention. Like apologies, the present findings

suggest that moral justifications can add to and strengthen a transgressor's pledge of better future behaviour depending on its quality. Transgressors who gave different reasons in their apologies were trusted more by both age groups than transgressors who offered up the same reason each time. With little research looking beyond single-issued transgressions, there remains much to explore in children's responses to repeat offenders and what effects remedial acts have on their moral judgements.

Global or local assurances. What this study leaves open, for one, is how children respond to a reoffender who causes multiple *different* transgressions. A transgressor might apologise and excuse herself after ruining a peer's picture before later apologising and excusing herself for another unrelated transgression (e.g., breaking a necklace). On the one hand, children might judge this kind of transgressor more favourably as her promise of better conduct technically holds true—she does not repeat the harm that she earlier apologised for. On the other hand, children might evaluate reoffenders who perform the same or different transgressions equally poorly if they recognise that apologies (and justifications) represent a general pledge to avoid causing future transgressions, not just *that* particular transgression again. The question comes down to whether or not children limit transgressors' assurances to the particular context from which they come. Future comparisons between apologetic reoffenders who cause the same harm or different harms are welcomed.

To what end. This study focused on the judgements made by children of an actor who repeated her transgression for a second time. However, there is no reason why future research could not explore children's responses to a third, fourth, or even fifth successive harm. In Aesop's Fables, for example, the boy who cried wolf did so countless times, exhausting the townsfolk of their time, goodwill and patience. We observed fairly low levels of trust-related behaviour from children following the second offence. How often, then, can someone continue to repeat their wrongdoing before children feel that enough is truly enough? At what point do the mitigating

benefits of apologies and justifications count for nothing? These are questions ripe for empirical review.

Cultural differences. Almost all penal codes advocate for punishing repeat offenders more severely than first-time offenders. With the law being an extension of cultural values (Mezey, 2003), how we deal with reoffenders might be relatively stable across cultures though the specifics may vary from one to the next. On the other hand, norm enforcement is known to be a culturally variable practice (e.g., Kanngiesser et al., 2022) and different cultures have different hierarchies of moral values, making an acceptable justification in one culture seldom certain of being in another (Haidt, 2012; Schweder, 1991). The reasons used in the present study to justify a recurrent harm might, therefore, have little to no bearing on children's moral judgements outside of WEIRD populations (e.g., McNamara et al., 2019). A question for future work, then, is whether, how and when cultural influences inform the way in which young children evaluate reoffenders and the justifications they give.

3.3 Limitations

Unwilling, but not unable. Not all stories presented to children in this study depicted the same kind of damage to the victim's possessions. Across the picture and balloon stories, the damage was lasting and irreversible—the actor could not repair the damage done (i.e., unwet the picture or unburst the balloon) whether she wanted to or not. In these stories, then, the actor was unable to undo the consequences of her actions. In the necklace story, however, the necklace was able to be repaired. Indeed, the victim herself repaired it before the actor later broke it again. It was thus reasonable for children to assume that the actor in the necklace story was able but unwilling to right her wrong. Her opposition contrasts with the former actors whom could not rectify the damage they had caused. Although no effect of story type was found in this study, whether the actors were unwilling or unable to do right by their victims was a potential confound worth exploring in future experiments.

Insincere, negligent or incompetent? Another constraint of the present study was that it could not answer precisely *why* children distanced themselves from the actor in the Same Reason condition. The dictionary definition of trust states a “firm believe in the reliability, truth or ability of someone or something”. A breakdown in trust, then, is likely to involve the violation of one or more of these qualities.

Someone lacking in “reliability” might be perceived as negligent, for individuals who act without due care and attention (although capable of doing so) cannot be routinely relied upon. Three-year-old children are already sensitive to the carefulness with which an action is performed (e.g., Nobes et al., 2009) and negligence can often be attributed to others even when no negligence information is provided (Nobes & Martin, 2022). Because the Same Reason actor twice caused the exact same harm (e.g., repeatedly knocked over the water because she “Didn’t see the cup”), children might have thus judged her to be especially unmindful and therefore untrustworthy.

Negligence is not alone in being able to explain a lack or loss of trust. As the definition states, there can be an element of “truth” involved. Here, we might interpret “truth” to mean the perceived sincerity of the Same Reason actor’s apologies. School-aged children readily distinguish between genuine, reparatory apologies (e.g., “I’m sorry, I feel bad”) and lesser forms of apology, like perfunctory (e.g., only saying “Excuse me”) and prompted apologies (i.e., those that are solicited by others, “Say sorry”) which are thought to convey less remorse (Darby & Schlenker, 1982; Schleien et al., 2010; Smith et al., 2018). Children, then, are quite good at recognising feigned displays of guilt. Repeating the same apology for her transgressions might, therefore, have led children to judge the Same Reason actor to be more dishonest, and her apologies more insincere.

A third possibility is that children were not making socially- or morally-laden judgements at all. Instead, more general evaluations of competence or “ability” might have been

made. Under this interpretation, the Same Reason actor was missing the skills, capacity and wherewithal necessary to prevent making the same mistakes and was thus avoided by participants not because of the contents of her character but simply because of her ineptitude. By ages 3 and 4, children already view incompetent people through a more negative lens (Heyman et al., 2003; Koenig & Jaswal, 2011) and choose to interact with them less (Corriveau & Harris, 2009; Sierksma & Shutts, 2021).

In any case, since judgements of negligence, insincerity and incompetence would likely result in the same behaviour (i.e., avoidance), this study could not tease these three possibilities apart. Solutions for future studies include specifically controlling for each of these prospects in the stories presented to children. Actors, for example, could be presented as always being “very careful” (negligence), “very honest” (sincerity) or “very skilled” (competence). It is, of course, possible that children perceive those who repeatedly harm to the tune of the same apology as being a combination of all three of these things. However, this simple change may help to unpick which mechanism, in particular, drives children’s distrust of remorseful reoffenders.

4 Practical implications

In addition to the theoretical and methodological implications described above, the present thesis makes two important practical contributions. Firstly, requesting is commonplace among young children (Ervin-Tripp & Gordon, 1986). But at what age children evaluate the fairness of their requests remained unknown. In Chapter Two, the results suggest that the onset of children’s concern with the fairness of their interpersonal requests likely coincides with the preschool period—between the ages of 3 and 5. This finding is especially important as it enables families, teachers and other professionals to better understand when young children should know better than to make unjustified requests of others, potentially informing when appropriate intervention may be necessary.

Secondly, when discussing moral dilemmas with children, well-intentioned parents often adapt and simplify their contributions to match their child's perceived level of cognition (Mammen et al., 2019; Walker & Taylor, 1991). Though this scaffolding is certainly warranted, it also raises the question of whether they underestimate their child's capacity to reason about morality. The findings of Chapters Three and Four suggest that, certainly by age 5, children are sophisticated moralistic thinkers whom are able to engage in and reason about complex moral acts in remarkably mature ways. Parents and other adults should, therefore, be mindful that preschool children's moral reasoning skills are likely more advanced than first thought. Efforts should be made, then, to meet them at this higher cognitive level.

5 Conclusion

A unique feature of human morality is that it is norm-based. Impartial standards are applied to and enforced by all individuals, the self included. And where these standards are not upheld, individuals look for ways to justify their judgements by grounding them in the norms and values of their culture, and express guilt. In this thesis, I have reviewed evidence which outlines how this sense of morality develops in childhood. I have also extended this evidence base by reporting experiments that make two main contributions.

Firstly, children at a surprisingly early age answer to the same standards used to evaluate others and thus begin to behave normatively. In Chapter Two, preschoolers recognised that requesting norms pertain to themselves as much as they do to others, no matter their personal interests and desires for this not to be the case. This was most clearly illustrated in their reluctance to make unjustified requests (i.e., requesting something that they did not need from someone who needed it) and in the guilt displayed over their ill-gotten gains. At the same time, these standards for how we ought to treat one another were understood to operate across all individuals and should be imposed accordingly. In Chapters Three and Four, children were witnesses to (rather than active participants in) third-party moral transgressions. Though these

interactions did not personally affect them (being passive observers), they nonetheless involved themselves behaviourally, emotionally, and through their reasoning. Taken together, these findings show preschool-aged children apply moral norms in an agent-neutral (rather than self-interested) way, something long believed to be the hallmark of true morality.

Secondly, children's understanding of the rational basis of morality is more sophisticated and nuanced than they have previously been credited for. Already children in their fifth year know how to reason and talk about moral acts according to the group and its value system. But the findings of this thesis show that the application of this knowledge is far-reaching and exceeds what has been empirically established. Not only do children at this age recognise when reasons or explanations should be given for moral offences, they also evaluate them in light of previous reasons for past transgressions, and even give "meta-reasons" for their moral judgements. The experiments in Chapters Three and Four thus extend what we can say about young children's moral reasoning and justification.

In sum, with the advent of preschool, young children are besieged by notions of "right" and "wrong" and make mostly moral decisions, most of the time. The findings of this thesis reflect this normative turn, and, together, add to the growing literature on the ontogeny of human morality. And yet, the present findings also point to the many ways in which morality continues to develop across childhood and how this likely varies by culture. It seems only fitting, then, that this thesis raises as many questions as it answers. If morality was a canvas, my contributions might represent the paint in its uppermost corner.

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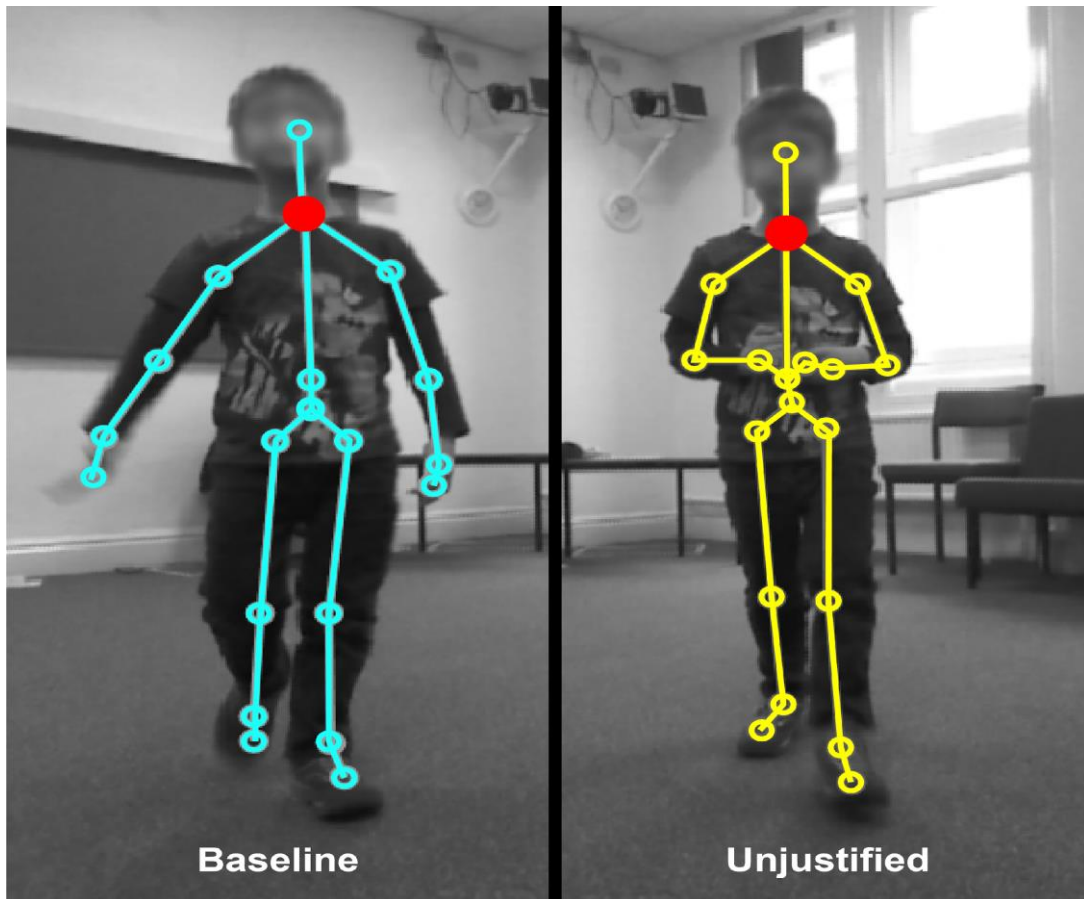
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Appendix A (Chapter Two)

An illustration of the data provided by the Kinect system. A total of 20 body parts are tracked. The joint used for statistical analyses was the chest's centre. The leftmost picture shows the posture of a child in the baseline, whereas the rightmost picture shows the same child's posture when making an unjustified request. Parental consent was obtained for the child's pictures to be published alongside this article/thesis.



Appendix B (Chapter Three: Study 1)

Stimuli and Narration

Warm-up: The “nicer” character



1.1. Some boys were playing outside. One of them fell over and hurt their knee. The boy in red helped his friend. The boy in orange did not.
Which boy do you like more, the one in red or the one in orange?



1.2. Some girls were playing with their toys. Their friend also wanted to play. The girl in green did not share with her friend. The girl in purple shared with her friend.
Which girl do you like more, the one in green or the one in purple?



1.3. Both boys wanted to play with the ball. The boy in blue said “Give me that”. The boy in green said “Can I have that, please?”
Which boy do you like more, the one in blue or the one in green?



1.4. Both girls were given a new toy. The girl in yellow said “thank you”. The girl in green did not.
Which girl do you like more, the one in yellow or the one in green?

Test trial

Intent-based accident condition

Belief-based accident condition



2.1. This is Tom. Tom enjoys drawing pictures.



2.1. This is Tom. Tom enjoys drawing pictures.



2.2. One day, Tom invited his friend Lisa over to play. Tom and Lisa wanted to draw some pictures.



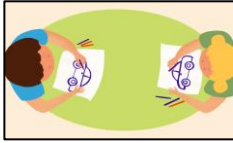
2.2. One day, Tom invited his friend Lisa over to play. Tom and Lisa wanted to draw some pictures.



2.3. Tom and Lisa sat down to do some drawing.



2.3. Tom and Lisa sat down to do some drawing.



2.4. Tom and Lisa decided they wanted to draw cars. Tom and Lisa decided to colour their cars in blue. Tom was very happy with his car. He liked it a lot.



2.4. Tom and Lisa decided they wanted to draw cars. Tom and Lisa decided to colour their cars in blue. Tom was very happy with his car. He liked it a lot.



2.5. When Tom and Lisa were finished. Tom and Lisa put their pictures in the middle of the table.



2.5. When Tom and Lisa were finished. Tom and Lisa put their pictures in the middle of the table.



2.6. Afterwards, Lisa picked up a picture.



2.6. Afterwards, Lisa picked up a picture.



2.7. [Lisa gasps] Lisa ripped the picture. But she did not want to rip the picture. She did it by accident.



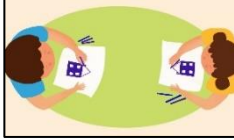
2.8. Tom looked at the ripped picture. "That was my picture!" said Tom. "*I'm sorry*" said Lisa. Tom felt sad.



2.9. The next day, Tom invited his friend Poppy over to play. Tom and Poppy wanted to draw some pictures.



2.10. Tom and Poppy sat down to do some drawing.



2.11. Tom and Poppy decided they wanted to draw houses. Tom and Poppy decided to colour their houses in blue. Tom was very happy with his house. He liked it a lot.



2.12. When Tom and Poppy were finished. Tom and Poppy put their pictures in the middle of the table.



2.13. Afterwards, Poppy picked up a picture.



2.14. [Poppy gasps] Poppy ripped the picture. But she did not want to rip the picture. She did it by accident.



2.15. Tom looked at the ripped picture. "That was my picture!" said Tom. "*I'm sorry, I was trying to see the picture better*" said Poppy. Tom felt sad.



2.7. [Lisa laughs] Lisa ripped the picture. She wanted to rip the picture. She did it on purpose.



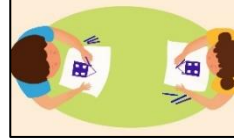
2.8. Tom looked at the ripped picture. "That was my picture!" said Tom. "*I'm sorry*" said Lisa. Tom felt sad.



2.9. The next day, Tom invited his friend Poppy over to play. Tom and Poppy wanted to draw some pictures.



2.10. Tom and Poppy sat down to do some drawing.



2.11. Tom and Poppy decided they wanted to draw houses. Tom and Poppy decided to colour their houses in blue. Tom was very happy with his house. He liked it a lot.



2.12. When Tom and Poppy were finished. Tom and Poppy put their pictures in the middle of the table.



2.13. Afterwards, Poppy picked up a picture.



2.14. [Poppy laughs] Poppy ripped the picture. She wanted to rip the picture. She did it on purpose.



2.15. Tom looked at the ripped picture. "That was my picture!" said Tom. "*I'm sorry, I thought this was my picture*" said Poppy. Tom felt sad.

Partner-choice questions



3.1. Both Poppy and Lisa are doing a puzzle. They are both missing the same piece. Here is the piece. You can decide who will get it.

They both ripped up Tom's pictures, but who would you like to help? Lisa or Poppy?



3.2. Both Poppy and Lisa would like to play with you.

They both ripped up Tom's pictures, but who would you like to play with? Lisa or Poppy?











3.3. This is your new toy train. Both Poppy and Lisa would like to look after it for you.

They both ripped up Tom's pictures, but who would you like to look after your toy? Lisa or Poppy?

Appendix C (Chapter Three: Study 2)

Stimuli and Narration

Test trial	
Unintentional condition	Intentional condition
 <p>2.7. Lisa ripped the picture. But she did not want to rip the picture. She did it by accident.</p>	 <p>2.7. Lisa ripped the picture. She wanted to rip the picture. She did it on purpose.</p>
 <p>2.8. Tom looked at the ripped picture. "That was my picture!" said Tom. <i>"I'm sorry, I was trying to see the picture better"</i> said Lisa. Tom felt sad.</p>	 <p>2.8. Tom looked at the ripped picture. "That was my picture!" said Tom. <i>"I'm sorry, I thought your picture wasn't good"</i> said Lisa. Tom felt sad.</p>
 <p>2.14. Poppy ripped the picture. She wanted to rip the picture. She did it on purpose.</p>	 <p>2.14. Poppy ripped the picture. She wanted to rip the picture. She did it on purpose.</p>
 <p>2.15. Tom looked at the ripped picture. "That was my picture!" said Tom. <i>"I'm sorry, I thought this was my picture"</i> said Poppy. Tom felt sad.</p>	 <p>2.15. Tom looked at the ripped picture. "That was my picture!" said Tom. <i>"I'm sorry, I thought this was my picture"</i> said Poppy. Tom felt sad.</p>

Appendix D (Chapter Four)

Sample of Stimuli and Narration

Test trial - picture

Baseline condition



2.1. Both girls wanted to draw some pictures. "I'm going to draw a car" said the girl in yellow. "And I'm going to draw a house" said the girl in green.



2.2. Suddenly, her cat jumped onto the table and knocked over the cup. Water went all over the picture. The girl in green was shocked. "My picture!" she said.



2.3. "I'm sorry" said the girl in yellow, "**your cat knocked over the cup**". Oh no! The picture was ruined because the cat knocked over the cup.



2.4. The girl in green and the girl in yellow tidied up the mess and then decided they wanted to draw their pictures again.



2.5. Suddenly, her cat jumped back on the table and knocked over the cup. Water went all over the picture. The girl in green was shocked. "My picture!" she said.



2.6. "I'm sorry" said the girl in yellow, "**your cat knocked over the cup, again**". Oh no! Last time, the cat knocked over the cup. And this time, the cat knocked over the cup again. Did the cat ruin the picture both times?

Different Reason condition



2.1. Both girls wanted to draw some pictures. "I'm going to draw a car" said the girl in yellow. "And I'm going to draw a house" said the girl in green.



2.2. Suddenly, the cup was knocked over. Water went all over the picture. The girl in green was shocked. "My picture!" she said.



2.3. "I'm sorry" said the girl in yellow, "**I did not see the cup**". Oh no! The picture was ruined because she did not see the cup.



2.4. The girl in green and the girl in yellow tidied up the mess and then decided they wanted to draw their pictures again.



2.5. Suddenly, the cup was knocked over again. Water went all over the picture. The girl in green was shocked. "My picture!" she said.



2.6. "I'm sorry" said the girl in yellow, "**this time, I was trying to get a crayon**". Oh no! Last time, she didn't see the cup. But this time, she was trying to get a crayon. Did she give the same reason, or were they different?

Same Reason condition



2.1. Both girls wanted to draw some pictures. "I'm going to draw a car" said the girl in yellow. "And I'm going to draw a house" said the girl in green.



2.2. Suddenly, the cup was knocked over. Water went all over the picture. The girl in green was shocked. "My picture!" she said.



2.3. "I'm sorry" said the girl in yellow, "**I did not see the cup**". Oh no! The picture was ruined because she did not see the cup.



2.4. The girl in green and the girl in yellow tidied up the mess and then decided they wanted to draw their pictures again.



2.5. Suddenly, the cup was knocked over again. Water went all over the picture. The girl in green was shocked. "My picture!" she said.



2.6. "I'm sorry" said the girl in yellow, "**I did not see the cup, again**". Oh no! Last time, she didn't see the cup. And this time, she didn't see the cup again. Did she give the same reason, or were they different?

Test questions



Victim:

3.1. The girl in green wants to make another picture. Should she play with the girl in yellow again, or play on her own this time?



Child:

3.2. This is your picture. The girl in yellow wants to look after it for you. Would you let her look after it or not look after it?
