

**Young Children's Pro-Social Behavioural Intentions towards Obese Peers**

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## **Abstract**

Stigma against obesity has been demonstrated in children as young as 3 years old. Previous research has emphasised the negative attitudes displayed by young children towards peers with obesity however, far less consideration has been given to positive social interactions, such as pro-social behaviour. The aim of this study was to further explore young children's attitudes towards peers with obesity across a range of pro-social behaviours. Young children (aged 4-6 years old, n=72) were asked to select characters with either healthy weight or obesity in a story involving different pro-social scenarios (helping, sharing & comforting) and asked to give a reason for their character selection. The frequency of character selections were analysed as well as using thematic analysis to identify the themes in children's reasoning. Comments were also coded for valence and linked to children's character selection. In line with expectations, children were less likely to choose a character with obesity as a playmate. Girls were less likely to help and comfort a character with obesity and boys less likely to share. Overall there was little evidence of negativity towards the characters with obesity within children's reasoning, although two children were consistently negative. These findings indicate that young children may have unconscious bias against obesity or that they are not attuned to obesity any more than other physical differences. This study suggests that for the majority of young children, stigma against obesity is not as pervasive as has been portrayed in earlier research. Young children may not require interventions to reduce obesity stigma, however, promoting pro-social behaviour generally may help with peer acceptance and prevent stigma against obesity from developing.



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## INTRODUCTION

### **Childhood Obesity**

Childhood obesity is defined as, “body mass index (BMI) at or above the 95<sup>th</sup> percentile for children and teens of the same age and sex,” (Centre for Disease Control and Prevention (CDC), 2016). BMI is a calculation involving weight and height and is commonly used to define obesity (World Health Organisation (WHO), 2018). However, amongst the literature exploring obesity a range of terminology is used e.g. ‘overweight’ and ‘fat’ (Puhl & Latner, 2007). This study uses the term ‘obesity’ to refer to children whose BMI exceeds the limit described by the CDC however, it is acknowledged that the literature in this field may be using different definitions to that set out in this study.

Childhood Obesity has been described as, “one of the most serious global public health challenges for the 21st century” (WHO, n.d.). Obesity in childhood is known to increase the likelihood of becoming an adult with obesity and is linked to health problems such as diabetes and heart disease (Sahoo et al., 2015). Amidst growing concerns across many western countries, the National Child Measurement Programme started in the UK in 2005 to monitor children’s weight during their primary school years in an effort to raise awareness to families and support lifestyle changes (NHS Digital, n.d.). The most recent statistics for children attending schools in England revealed that 10% were classified as overweight or obese in their first year of primary school, rising to 20% in their final year of primary school (National Statistics, 2018). More recently the UK government unveiled their Childhood Obesity Strategy (HM Government, 2016) which includes further measures to tackle

obesity such as a ‘sugar tax’ on soft drinks high in sugar content, which came in to force in the UK in April 2018.

The increase in childhood obesity has been attributed to a number of factors. Early risk factors include low birthweight, smoking during pregnancy and parental obesity (Hawkins, Cole, & Law, 2008). The prevalence of childhood obesity has also been found to vary across different parts of the country, with the most economically deprived areas showing the highest level of severe obesity (defined as body mass index (BMI) in 99.6<sup>th</sup> percentile; Ells et al., 2015). The link between obesity and poverty has been demonstrated across a number of studies (Drewnowski & Specter, 2004; Stamatakis, Wardle & Cole, 2009). Other factors related to an increase in childhood obesity are changes in children’s lifestyle, such as increasing amounts of time spent doing sedentary activities such as TV viewing (Reilly et al., 2004) and diets high in sugar and fat (Bowman et al., 2004; Drewnowski & Specter, 2004).

### **Obesity Stigma in Childhood**

#### **Definition of Stigma**

The term ‘stigma’ is defined in the dictionary as, “a mark of disgrace associated with a particular circumstance, quality, or person,” (Oxford English Dictionary, 2018).

However, stigma has been explored across different academic disciplines and in relation to a wide-range of populations (e.g. mental health difficulties, physical disability etc.) and as such has been characterised in different ways (Link & Phelan, 2001). Link and Phelan (2001) argue that because of the range of definitions and

understandings used, our understanding of 'stigma,' should be broadened to include labelling, stereotyping and discrimination.

### **Definition of Obesity Stigma**

Obesity stigma has been described as, "...negative weight-related attitudes and beliefs that are manifested by stereotypes, bias, rejection and prejudice...because they are overweight or obese" (Puhl & Latner, 2007, p. 558). The evidence base exploring obesity stigma uses a range of terminology in relation to this concept such as, 'bullying,' 'victimisation,' or 'anti-fat' prejudice (Crandall & Schiffhauer, 1998; Griffiths, Wolke, Page, & Horwood, 2006; Pearce, Boergers, & Prinstein, 2002). For the purpose of the study, a broad definition of obesity stigma is accepted to incorporate the different ways in which the literature describe this issue.

### **Prevalence of Obesity Stigma in Childhood**

Stigma towards children with obesity has been highlighted in a number of studies across different parts of the world (Almenara & Jezek, 2015; Kim, Yun, & Kim, 2016). Research has also suggested that stigma against children with obesity has become more prolific over time. Latner and Stunkard (2003) replicated a study originally carried out in the 1960's and found that compared to the levels of stigmatisation recorded previously, there was a significant decrease in children's preference for the drawing of a child with obesity. This suggests that not only is the stigmatisation of children with obesity a cross-cultural experience, but in western societies it is also becoming a bigger problem.

The results of studies into children's attitudes towards peers with obesity have consistently demonstrated that children with obesity are associated with negative qualities, are less preferred and experience greater exclusion. This finding has been replicated across studies involving hypothetical and real-life scenarios. For example, Zeller, Reiter-Purcell and Ramey (2008) found that amongst 8-16-year-old children, peers with obesity were the least preferred and viewed as displaying more negative characteristics such as being less physically attractive and more aggressive. Children aged 9-13 years old have also been found to endorse weight stigmatisation of children with obesity in physical activities such as sports (Nguyen & Malti, 2014). In a study involving exploration of children's real-life preferences for friendships with their classmates, Kornilaki and Cheng (2017) found that children with obesity were not rated as popular across any of the age groups included in the study (5, 7 and 9 year olds), suggesting that the rejection of obese peers demonstrated in hypothetical studies is translated in real-life scenarios.

Stigma continues in adolescence and teenagers with obesity have been found to be less likely to have romantic relationships compared to their peers with healthy weight (Pearce, Boergers, & Prinstein, 2002). In a study of adolescent experiences of weight-based bullying, Puhl, Luedicke and Heuer (2011) found that 84% of participants had witnessed teasing towards peers with obesity. Other anti-social behaviours frequently witnessed by participants were ignoring and exclusion of peers with obesity. Although teenagers in this study reported that they saw these kinds of incidents often, only 50% reported that they did something to help a peer with obesity. This suggests that by the time children reach secondary education, stigma against obesity is common but that there is also a degree of indifference towards the social exclusion of peers with obesity. A recent study also found that not only were adolescents with obesity experiencing increased levels of traditional

bullying, but cyber-bullying was also higher amongst this population compared to peers with healthy weight (DeSmet et al., 2014). Longitudinal studies have also indicated that the interpersonal difficulties experienced by adolescents with obesity persist into young adulthood (Ames & Leadbeater, 2016).

As well as being victims of bullying, children and adolescents with obesity have also been found to be the perpetrators of bullying (Jansen et al., 2014). Research has highlighted that children who are involved in bullying often have low self-esteem (Tsaousis, 2016), a characteristic that is commonly found amongst children with obesity (Strauss, 2000). The robust nature of the findings from this research suggests that stigma against children with obesity is a significant issue. Children with obesity from across different parts of the world are at increased risk for bullying and the negative psychosocial consequences that arise from this.

### **Young Children and Obesity Stigma**

Young children do not appear to have escaped the negative stereotypes associated with obesity and there is now a substantial amount of research demonstrating stigma and rejection of peers with obesity within pre-school and young children.

Baxter, Collins and Hill (2015) found that young children aged 4-7 years old understood the negative consequences of being obese, such as obesity being linked to illness. Research has shown that young children are aware of and endorse these 'anti-fat' messages from a young age. Cramer and Steinwert (1998) found that 3-5-year-old children attributed more negative characteristics to a character with obesity and were less likely to want to play with them; these findings were repeated in a

similar study by Turnbull, Heaslip and MacLeod (2000). Su and Aurelia (2011) found that pre-school children rated an obese character in a story as ‘mean’ significantly more often than ‘nice.’ Children with obesity have also been found to be least preferred when ranked amongst children with other physical differences such as those in a wheelchair or with facial disfigurements (Sigelman, Miller, & Whitworth, 1986). However, a study involving British school children found that the methodology used to elicit children’s responses influenced the level of negativity displayed towards characters with obesity (Harrison, Rowlinson, & Hill, 2016). In this study children were asked to rate characters with healthy weight and obesity across a range of activities (e.g. how likely would they be to win a race, be naughty etc.) and also make selections between the characters, e.g. friendship. Although children rejected the characters with obesity in forced-choice tasks (e.g. friendship selection), children’s ratings of the characters did not reflect this negativity. In a similar study, Charsley, Collins and Hill (2018) asked young children to pick between figures with obesity, healthy weight and physical impairment (wheelchair) in terms of who was most similar to them, who they would like to be friends and other questions relating to children’s preferences for the characters. They found that when obesity was placed amongst other physical differences, such as physical impairment, children did not comment on obesity as the feature that made these characters different, any more than other physical differences such as gender.

Thus, it appears that stigma towards obesity not only appears early in children’s development, but also persists throughout childhood. However, more recent research suggests that the methodology used to elicit children’s views about obesity should be given consideration and that obesity should be placed within a wider context of physical differences (Charsley et al., 2018; Harrison et al., 2016).

## **Gender Differences**

Although studies exploring obesity stigma have shown that this issue affects both boys and girls, there are some indications to suggest that there are gender differences with regards to being the perpetrators and also victims of obesity stigma.

Latner and Stunkard (2003) found that girls in their study aged 10-12 years old showed significantly more dislike of a picture of a child with obesity compared to boys in their study. Studies involving pre-school aged children have also found that girls show a preference for thin body shapes over average sized body shapes. For example, Harriger, Calogero, Witherington and Smith (2010) found that 3-5 year old girls were more positive about thin body shapes rather than average sized body shapes and more likely to choose a character with a thin body shape as a friend. This suggests that even very young girls are developing bias towards thin body shapes.

Studies have indicated that although both boys and girls describe concerns about body image, there are gender differences. For example, Jones (2001) found that girls' comparisons with others about their body shape was significantly correlated to body satisfaction, however the same relationship was not found amongst the boys. Similar studies have highlighted that body satisfaction in girls was related to contact with fashion magazines (Jones, Vigfusdottir, & Lee, 2004). Studies have also indicated that girls are more sensitive to parental feedback about weight and also parental concerns about their own weight (Smolak, Levine, & Schermer, 1999). Interestingly, Parker et al. (1995) found cultural differences in the adolescent girls body satisfaction. African American girls were found to be more accepting of different shape types, whereas White girls were found to be more inflexible in their beliefs about physical attractiveness. This suggests that girls more



so than boys, are sensitive to the messages about body shape that are present in different aspects of their environment for example, parents and the media.

A review of the literature regarding weight-based stigmatisation in children found that girls with obesity were more likely to be victims of stigmatisation than boys, particularly with regards to the amount of friendships they had and teasing from peers about their body shape (Tang-Péronard & Heitmann, 2008). Griffiths et al (2006) found similar gender differences in their study of 7.5-8.5 year olds. In their study girls with obesity were more likely to be victims of bullying, whilst boys with obesity were more likely to be perpetrators of bullying. This suggests girls may also experience more obesity stigma than boys and that exploring gender differences in relation to obesity stigma may be important.

### **Development of Obesity Stigma**

The influence of the media has been shown to be an important factor in the development of stigma towards obese children (Eisenberg, Carlson-McGuire, Gollust, & Neumark-Sztainer, 2015; Latner, Rosewall, & Simmonds, 2007). In a recent study of pre-school children, Burmeister, Zbur and Musher-Eizenman (2016) found that boys rated pictures of obese children engaged in an active activity more positively than pictures where they were not active. This suggests that stereotypical images of obese people being lazy may be a significant factor in the stigmatisation of this population. Interestingly, girls in the study did not respond as positively to the images of active obese children.

However, children are exposed to a range of influences and it is likely that stigma towards obese peers develops through a combination of factors. Attribution Theory suggests that “individuals make a distinction between controllable and

uncontrollable causes of events. If a controllable attribution is made (e.g. lack of willpower), anger and social distancing may result. If the condition is attributed to an uncontrollable source (e.g. biology), sympathy and help may follow.” (Weiner, 1995, as cited in Musher-Eizenman et al., 2004, p. 614). Research has found that even young children believe that obesity is a controllable attribute and these beliefs are related to negative attitudes towards obese peers (Musher-Eizenman et al., 2004). However, despite these findings, interventions designed to provide education about the causes of obesity (including factors that are out of the individuals control such as genetics) did not reduce children’s negative attitudes towards obese peers (Anesbury & Tiggerman, 2000; Fitzgerald, Heary, & Roddy, 2013). Suggesting that stigma towards obesity is more complex than the attributions made towards this population.

The influence of adults on children’s attitudes cannot be ignored. Ecological Systems Theory (Bronfenbrenner, 1986) suggests that the family is a primary influence on children’s attitudes and behaviour. Thomas et al. (2014) found that conversations between parents and children typically included messages about the negative consequences of obesity and these conversations also included comments about the personal control of weight. Many parents in this study also reported that they had conversations with their children that included negative messages about eating unhealthy food and gaining weight. Another study found that within families, mothers and older brothers most frequently engaged in negative conversations about weight (Berge et al., 2016). A study involving 10-year-old children found that those who had the strongest negative stereotypes in relation to obesity were more likely to have parents who attributed obesity to personal control and who had a healthy weight (Hansson & Rasmussen, 2010). A further study by Lydecker, O’Brien and Grilo (2017) also suggests that parents are a source of implicit bias towards obesity,

suggesting that parents may shape children's attitudes through both explicit and implicit attitudes about obesity.

The influence of families on negative attitudes towards obesity has been shown to emerge early in children's development. Recently, it was found that children as young as 2 years old showed a significant preference for looking at an average weight figure rather than an obese figure and that this preference was correlated to the level of weight prejudice shown by mothers (Ruffman et al., 2016). Similarly, Holub, Tan and Patel (2011) found a significant correlation between mother's negative comments about obese children, mother's fat phobia and obesity stereotypes held by children aged 3-6 years old. This suggests that families are an important source of information to children about obesity and may be an important factor in the development of negative attitudes towards this group.

However, children and their families sit within a wider framework of systems, which also influence attitudes and behaviour (Bronfenbrenner, 1986). Media messages about obesity are generally negative; a study of online news websites found that 72% of images on these websites regarding obese people reflected them in a negative way (Heuer, McClure, & Puhl, 2011). These negative attitudes are not effective in reducing levels of obesity and reinforce the societal stigma of this population (Puhl & Heuer, 2010). In a study of children's films, Howard et al. (2017) found that 84% of the films rated by researchers (n=13) included negative messages about obesity and weight-based stigmatisation of characters portrayed as having obesity. This suggests that children are directly exposed to negative messages about people with obesity.

Tackling obesity stigma at every level of influence is clearly an immense task however, gaining a better understanding of attitudes towards obesity at an

individual level is a starting point to develop more effective approaches to tackle this problem.

### **Psychological Effects of Obesity Stigma in Childhood**

The stigmatisation of children with obesity is a significant problem across all age groups with serious consequences on psychological wellbeing. Children with obesity are at risk of developing psychological difficulties such as anxiety and depression (Rankin et al., 2016) and also experience lower quality of life (Griffiths, Parsons, & Hill, 2010; Schwimmer, Burwinkle, & Varni, 2003).

Children with obesity have been found to struggle with relationships with their peers from a young age, which has a significant impact on their social and emotional wellbeing (Harrist et al., 2016). Adolescents with obesity have been found to have increased levels of suicidal ideation (Dave & Rashad, 2009; Eisenberg, Neumark-Sztainer, & Story, 2003), suggesting that stigmatisation can have severe consequences on psychological wellbeing. Comments regarding weight and appearance in childhood have been found to have long-lasting effects on psychological wellbeing. Grandparents and parents of pre-school age children were interviewed about their experiences of becoming aware of their body size as children. The sample included a range of BMIs including those classed as obese. Participants reported that comments about their weight as children had long-term negative effects, such as developing eating disorders and enduring low self-esteem (Eli et al., 2014).

However, a recent systematic review revealed that although the correlation between childhood obesity and psychological problems has been robustly demonstrated in the research literature, the direction of the relationship between

these issues remains unclear (Rankin et al., 2016). Therefore, it is not known which of these factors precipitates the other. However, regardless of the direction of this relationship it remains important to tackle the stigmatisation of children with obesity.

Not only does childhood obesity have negative consequences for children's psychological wellbeing, but physical wellbeing also suffers. Tomiyama (2014) found a cyclical effect for weight-based bullying and weight, and longitudinal studies have shown that weight-based bullying reinforces obesity throughout childhood (Qualter et al., 2015). Children with obesity are also more likely to have friendships with other children with obesity and share eating behaviours such as dieting and eating junk food within these friendships groups (Fletcher, Bonell, & Sorhaindo, 2011). This suggests that the impact of weight-based bullying has enduring effects on physical and psychological wellbeing.

Alongside the negative psychological consequences discussed above, the stigma experienced by children with obesity also has a significant effect on body satisfaction and body esteem.

Worryingly, research has demonstrated that children are aware of their body shape from a very young age and present with dissatisfaction of more overweight body types. Tremblay, Lovsin, Zecevic and Lariviere (2011) found that preschool children aged 3-5 years old were able to correctly identify their body size and that there was greater dissatisfaction with body shape from girls as opposed to boys. Davsion, Markey and Birch (2000) also found that a small percentage of 5-year-old overweight girls in their study were unhappy with their body size and Williams et al. (2013) found that girls with higher BMIs were more likely to be bullied and have lower body-esteem. Similar findings have been found with older children. Duchin et al.

(2015) conducted a longitudinal study of children (aged 5-12 years old) and found that increases in children's body mass index (BMI) was correlated to their satisfaction with body shape.

These findings are particularly concerning when considering research that has shown a vicious cycle for weight-based bullying and subsequent weight-gain (Tomiyama, 2014). This suggests that stigma towards children with obesity could contribute to poor body satisfaction, increased weight-gain and further stigmatisation. It is clear that obesity stigma has significant effects on psychological and physical wellbeing, not only in childhood but also in adulthood as well. Developing effective interventions to reduce stigma against children with obesity could have a significant impact on mental health, psychological wellbeing and body satisfaction.

### **Obesity Stigma in Childhood: Factors to Consider**

However, although stigmatising behaviour and attitudes towards children with obesity have been demonstrated across a number of studies, there is also evidence that suggests that this process may not be as simple as it has been portrayed. Charsley et al. (2018) found that young children did not reject a figure with obesity any more than a figure with a physical impairment (wheelchair) and that children's comments about the differences between characters referred less to the body shape of the characters compared to other physical differences such as gender. This suggests that for young children at least, obesity is no more relevant than other physical differences.

In Zeller et al's (2008) study it was found that although obese children were perceived more negatively by peers, they did have friendships within their class,

suggesting that obese children were not completely rejected by their classmates. Similarly, Philips and Hill (1998) found that there were no differences in the amount of friendships for girls with obesity and girls with healthy weight. Older children have also indicated that they feel it is important not to judge a person solely based on their weight (Dixey, Sahota, Atwal, & Turner, 2001). Nguyen and Malti (2014) found that children's attitudes towards exclusion were different depending on the context; children approved less of excluding peers with obesity in less physically active and social activities e.g. school work and birthday parties.

Other studies have indicated that the methods used by researchers can affect how much stigma children present towards peers with obesity (Harrison et al., 2016). For example, observational studies looking at the relationships between obese children and healthy weight children have shown that there are differences in the social interactions of children with obesity. Observations of pre-school children have shown differences in the way that children with obesity interact with children with healthy weight. Green (2015) found that preschool children with obesity were not rejected by peers but that these children were less self-confident and therefore were more likely to be on the edge of social groups. This suggests that children with obesity are not necessarily rejected, but have different patterns of social interactions with their peers. These patterns of relationships with peers with obesity may develop early in children's development and affect how they interact with peers throughout childhood.

These findings suggest that although negative attitudes towards obese children do exist, there are a number of factors to consider in the presence or absence of these and that the methodology used by researchers can have important bearing on the level of stigma displayed.

### **Summary of Research Exploring Obesity Stigma in Childhood**

In summary, research has indicated that obesity stigma is present from a very young age (Cramer & Steinwert, 1998) and persists as children grow older (Nguyen & Malti, 2014). Gender differences have also been highlighted, with girls indicating greater preference for thin body shapes (Harriger et al., 2010) and also being more likely to experience weight-based bullying (Tang-Péronard & Heitmann, 2008).

There are likely a number of factors influencing the development of obesity stigma in childhood including parental attitudes (Lydecker et al., 2017) and the media (Howard et al., 2017). However, research has also indicated that children with obesity are not entirely rejected by peers (Philips & Hill, 1998; Zeller et al., 2008) and that young children with obesity also have different patterns of interaction with their peers (Green, 2015), suggesting that obesity stigma is a complex issue.

There are also a number of limitations to this research, particularly in terms of ecological validity, which are important to consider. A number of studies have used line drawings of different sized figures to prompt children's attitudes towards obesity, which have been criticised for lacking generalisability to children's actual attitudes (Harrison et al., 2016). Less realistic materials, such as line drawings have also been found to inflate children's negativity towards obesity, when compared to photographs (Meers et al., 2011). Similarly, the use of forced-choice methodology has also been criticised for inflating children's bias against obesity (Harrison et al., 2016), suggesting that many of the studies in this field do not give an accurate representation of stigma. Charsley et al. (2018) also highlighted the importance of having conversations with young children in order to understand how obesity perceive is perceived alongside other physical differences.



### **Pro-Social Behaviour**

Much of the previous research regarding children with obesity has focused on the presence and impact of negative attitudes towards this population. However, the focus on the negative aspects of children's attitudes towards obesity does not account for the evidence demonstrating children's relationships with their obese peers or how these develop, which could help to develop effective interventions to reduce stigma against obesity.

One area of intervention that has not been explored in relation to children's attitudes towards peers with obesity is pro-social behaviour. Research has indicated that encouraging pro-social behaviour can increase social inclusion amongst primary school age children (Layous et al., 2012), suggesting that this may be an effective area to focus interventions on for reducing discrimination and rejection of children with obesity. Irving (2000) found that an educational programme promoting pro-social behaviour (e.g. 'being a good friend') increased children's (aged 9-10 years old) acceptance of different body shapes. It is clear that interventions should start early as research has indicated that young children are aware of weight change and the motivations for this (Baxter et al., 2015) and are beginning to develop attitudes towards children with a range of physical differences (Nabors & Keyes, 1997).

Pro-social behaviour has been defined as, "voluntary, intentional behaviour that results in benefits for another," (Eisenberg & Miller, 1987, p. 92). This broad definition includes a range of different behaviours including helping, sharing, comforting and cooperating. Pro-social behaviour has been distinguished from altruistic behaviour, which is defined as, "voluntary behaviour intended to benefit

another, which is not performed with the expectation of receiving external rewards or avoiding externally produced aversive stimuli or punishments.” (Eisenberg & Miller, 1987, p. 92).

A range of pro-social behaviours are present very early in children’s development (Dunfield, Kuhlmeier, O’Connell, & Kelley 2011). Dunfield (2014) suggests that different pro-social behaviours require children to understand and recognise a range of needs in others, which then produce different pro-social responses e.g. helping, sharing and comforting. These behaviours will develop at different stages in a child’s development, depending on when the child acquires the understanding of the underlying need in others (Dunfield, 2014). These findings are consistent with research suggesting that the development of pro-social behaviour cannot be explained by a single, unified theory (Paulus, 2014). Paulus (2014) states that pro-social behaviour includes a number of distinct behaviours and therefore it is likely that there are a variety of different processes and pathways involved in their development.

Research exploring children’s understanding of pro-social behaviour suggests that they generate responses that reflect the traditional categories of pro-social behaviour such as helping, sharing and comforting. Greener and Crick (1999) found that responses to the question “what do nice boys/girls do,” changed as children got older. Young children (aged 6-7 years old) were more likely to give responses relating to playing and sharing with others, whereas older children’s responses indicated that they considered behaviours that maintained friendships with others as pro-social. In a similar study, Tisak, Holub and Tisak (2007) found that preschool children were able to identify different pro-social behaviours and were able distinguish between what might be expected in different environments, such as

home and school. Children in this study were found to report more pro-social behaviour in the home environment, rather than school.

Children's motivation for behaving pro-socially appears to be in part, an instinctive process. Warneken and Tomasello (2006) found that at just 20 months old children were highly motivated to help, even in situations where no extrinsic reward was available. Although, Thompson and Newton (2013) state that research exploring pro-social behaviour in very young children suggests that this is a complex process influenced by the type of situation, emotional understanding and social context. Therefore, stating that pro-social behaviour is an innate process is somewhat simplistic.

Emotional states are believed to be important to the development of pro-social behaviour. The emotional state of guilt has received much attention in the research literature. Hoffman (as cited in Eisenberg, 1982) states that in order to feel guilty for their actions children must be aware of themselves in relation to other people. Infants aged under 2 years old (22 months) have been found to display the physiological markers associated with guilt such as body tension (Kochanska, Gross, Lin, & Nichols, 2002). The presence of guilt has been found to motivate pro-social behaviour in pre-school children. Young children aged 3 years old have been found to respond pro-socially to situations where they have directly caused harm to another, suggesting that guilt is a powerful emotion involved in the provision of pro-social behaviour, even at a young age (Vaish, Carpenter, & Tomasello, 2016).

Research has demonstrated that pro-social behaviours differ throughout the trajectory of childhood. Children aged 4-5 years old have been found to exhibit quite low levels of spontaneous pro-social behaviour (Eisenberg-Berg et al., 1981). Similarly, Yarrow et al. (1976) found that children aged 3-7.5 years old were able to

respond in situations that involved helping, sharing and comforting, although children were found to have more difficulty responding in the comforting situation compared to the situations involving helping and sharing. However, by age 7 children can discriminate between different pro-social behaviours and are developing different attitudes regarding presenting these behaviours to others (Jackson & Tisak, 2001). In this study it was found that children aged 7-10 years indicated that helping, sharing and cooperating were more favourable than comforting however, 11-12 year olds were less approving of cooperating with a friend. This suggests that there are differences in how children perceive and provide different pro-social behaviours however, it is not known if these differences affect children's intentions to provide pro-social behaviours to peers with obesity.

### **Helping**

Helping behaviours are demonstrated early in children's development. Warneken and Tomasello (2006) showed that children aged 18 months helped adults in a variety of situations e.g. passing an adult a pen that they could not reach. Similar findings were demonstrated by Hepach, Kante and Tomasello (2016) for 2 year olds placed in situations where a peer needed help (could not reach toys). In this study rates of helping were lower in the condition where a peer did not need help (had access to various toys), suggesting that children were able to discriminate between situations where help was and was not needed.

Like other pro-social behaviours, helping becomes more discriminate as children grow older. Vaish, Carpenter and Tomasello (2010) found that 3-year-old children showed a greater preference for helping an adult who was shown as helpful than an adult who was shown being unhelpful. These findings are similar to those

found for other pro-social behaviours in which children take into account characteristics of the recipient (Kenward & Dahl, 2011). These findings are interesting when considering children's attitudes towards peers with obesity as it suggests that children are aware of the characteristics of the recipient and make judgements regarding providing pro-social behaviour.

There has been some research exploring young children's attitudes towards helping peers with obesity. Young children aged 4-8 years old were found to be less willing to help a peer with obesity when faced with a choice between helping this child and one of average weight (Patel & Holub, 2012). In this study children were required to choose from a figure with healthy weight and a figure with obesity across seven stories that involved helping one of these figures. The rejection of the figure with obesity was shown across a range of contexts in which young children might demonstrate helping behaviour e.g. helping a peer complete a puzzle. This suggests that not only do young children express less preference for peers with obesity but that this also transcends into their pro-social behavioural intentions towards these children.

However, a limitation with Patel and Holub's (2012) study is that children were asked to respond to several similar vignettes (all involved a helping behaviour). Research has indicated that repeating questions with young children can be problematic (Fivush & Schwartzmueller, 1995) and that young children are susceptible to changing their responses when asked repeated questions (Brady, Poole, Warren, & Jones, 1999), possibly because they think they have given an incorrect response. This suggests that future research should consider these factors in order to gain a more valid insight into children's attitudes.

## **Sharing**

Like other pro-social behaviours, sharing is also evident from a very young age. Infants have been found to demonstrate sharing of food and toys with adults from around 18 months old (Brownell, Iesue, Nichols, & Svetlova, 2013). Infants aged 1 and 2 years old have been found to have similar levels of spontaneous sharing with peers, however; in situations where peers request toys, 2 year olds have been found to share less than 1 year olds (Hay, Caplan, Castle, & Stimson, 1991) suggesting that sharing behaviour becomes more sophisticated as children grow older.

The concept of fair-sharing has also been found to exist in children as young as 2 years old (Ulber, Hamann, & Tomasello, 2015). Although 3-8 year olds have been found to approve of fair sharing with peers, this was not demonstrated in actual levels of sharing until children reached 7-8 years of age (Smith, Blake, & Harris, 2013). This suggests that as children develop they become more aware of the social context and complexities of sharing behaviour. Children's ability to understand situations where sharing equally may not apply increases between the ages of 5-8 years old (Schmidt, Svetlova, Johe, & Tomasello, 2016). In this study it was found that children were less likely to share equally as they grew older however, 5 year old children were less likely than 8-year-old children to discriminate between deserving and non-deserving recipients (Schmidt et al., 2016).

Research has found that children's sharing behaviour is affected by a number of factors. Malti et al. (2016) found that young children aged 4-8 years old are affected by certain characteristics of the recipient when making decisions regarding sharing. In their study both 4 and 8-year-old children shared more in vignettes where

the recipient was portrayed as more deserving e.g. a child who shares with others. Children in this study also demonstrated increased sharing in vignettes in which the recipient was presented as in need e.g. this child does not have any toys. In a similar study, Kenward and Dahl (2011) found that when 3 and 4-year-old children had a limited resource (unequal number of biscuits) they gave more to a character portrayed as a helper than to a character displayed as aggressive.

However, younger children's (4-7 years old) preference for fair sharing has been found to vary depending on whether they are the advantaged (have more than the other person) or disadvantaged (have less than the other person) recipient; by age 8 however, children refuse both advantaged and disadvantaged situations in preference for fair sharing (Blake & McAuliffe, 2011).

However, it is unclear how young children perceive peers with obesity in situations that involve sharing. Young children may view peers with obesity as being less deserving as previous research has indicated that young children attributed more negative characteristics to obese children such as being mean (Su & Aurelia, 2011). On the other hand, young children may have sympathy for obese peers, as has been demonstrated with older children (Dixey et al., 2001). Increased sympathy in childhood has been shown to motivate sharing (Malti et al., 2012). The current study aims to understand how children perceive peers with obesity in situations that involve sharing a limited resource.

### **Comforting**

Infants and young children have been found to start displaying concerns to the presence of distress in others around them from the age of 1, but this develops greatly around age 2 (Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992).

As children grow older they have been found to display a range of behaviours indicating concern for another child's distress, such as offering toys and approaching the distressed child (Nichols, Svetlova, & Brownell, 2015). Pre-school children aged between 18 months-3 years have been found to hug peers who have shown distress by crying (Howes & Farver, 1987). Interestingly, Caplan and Hay (1989) found that 3-5-year-old children were less likely to comfort a peer in the presence of an adult. Although children in this study demonstrated that they understood how to comfort a peer who was upset, the majority of children stated that it would be a teacher who should provide comfort to the child, suggesting that children take in to account the context of the situation when providing comforting behaviour.

Comforting involves sympathy on behalf of the individual giving the response. As previously stated, there is some evidence that children have sympathy for obese peers (Dixey et al., 2001; Nabors, Marionas, & Olsen, 2016), which may elicit more comforting responses. Nabors et al. (2016) found that girls were more likely to have sympathy for both characters with obesity and average weight who were depicted as victims, suggesting that there may be a gender difference in how young children respond with comfort towards a peer with obesity. Unlike other pro-social behaviours, comforting can involve physical contact with others (e.g. hugging), however, it is not known if this will influence children's intentions to provide comfort to a peer with obesity. Some studies have suggested that children are affected by the 'proximity effect' in their attitudes towards peers with obesity (Penny & Haddock, 2007). The 'proximity effect' describes how mere association with stigmatised groups can increase stigmatisation towards a non-stigmatised individual (Hebl & Mannix, 2003). For example, Penny and Haddock (2007) found that children rated a figure with healthy weight more negatively when viewed in a picture where the background contained figures with obesity.



However, there is little known about young children's intentions to comfort a peer with obesity and whether there are differences when compared to intentions towards peers with healthy weight. Gaining an accurate understanding of children's provision of different pro-social behaviours towards peers with obesity could be important when considering interventions to promote inclusion.

### **Stealing**

Understanding the circumstances in which young children behave in an anti-social manner is equally as important as understanding how and why young children behave pro-socially. The current study aims to provide some exploration of anti-social behaviour towards peers with obesity.

For the current project, stealing has been chosen as the anti-social behaviour for further exploration as young children have been found to understand and respond to situations in which possessions are stolen. For example, children aged around 3 years old have been found to understand rules around possession and ownership. Rossano, Rakoczy and Tomasello (2011) found 3-year-old, but not 2-year-old children responded when the property of a third party was taken or thrown away. This suggests that children understand rules regarding ownership and become distressed when these are not followed.

Research has also demonstrated that young children have a bias towards first ownership of objects (Malcolm, Defeyter, & Friedman, 2014). Interestingly, in this study it was found that children also use stereotypes when allocating ownership of an object and that these stereotypes overshadow the first ownership bias. Children were found to assign ownership of toys based on whether these were stereotyped girl or boy toys, regardless of who was seen playing with the toy first (Malcolm, et al.,

2014). Research has also discovered that young children (aged 4-5 years old) understand the difference between giving an object away, such as a gift and stealing an object (Blake & Harris, 2009). This suggests that children aged 4-6 years old would understand and respond to a vignette involving stealing an object from another child.

Previous research has demonstrated that young children endorse the rejection of peers with obesity (Cramer & Steinwert, 1998) however, it is not known if young children will behave in other anti-social ways towards a peer with obesity, such as stealing from them. The current study hopes to extend on previous research findings by exploring other types of anti-social behaviour in relation to peers with obesity.

### **Theory of Mind and Pro-social Behaviour**

Theory of Mind (TofM) is a concept used to describe the ability to, “impute mental states to himself and others,” (Premack & Woodruff, 1978, p. 515). Children’s abilities to understand the thoughts and needs of others is an important aspect of their social learning. It is thought that this ability to take the perspective of others is important to the development of pro-social behaviour (Eisenberg & Miller, 1987) and by the age of 4 most children will have developed early Theory of Mind skills (Baron-Cohen, Leslie, & Frith, 1985).

A number of studies have demonstrated that children with higher levels of Theory of Mind are more pro-social (Caputi, Lecce, Pagnin, & Banerjee, 2012) and also have higher levels of peer acceptance (Slaughter, Dennis, & Pritchard, 2002). A longitudinal study of children aged 5-7 years old found that early abilities in Theory of Mind at age 5 were related to higher levels of peer acceptance and pro-social

behaviour at age 7 (Caputi et al., 2012). The authors suggest that Theory of Mind mediates the relationship between peer acceptance and pro-social behaviour, so that children who are better at Theory of Mind are more likely to behave pro-socially and therefore become more popular amongst their peers (Caputi et al., 2012).

In a study of 4-6 year olds Badenes, Clemente and Garcia (2000) found that boys with high levels of peer rejection performed similarly to their accepted peers in most of the Theory of Mind tasks with the exception of one task involving stories about telling a 'white lie'. However, this task also involved having to respond in a pro-social manner and the authors suggest that the difference in performance between accepted and rejected children could actually reflect poorer pro-social abilities in the rejected children, rather than deficits in Theory of Mind. Lapan and Boseovski (2016) explored the relationship between young children's (aged 3-6 years old) Theory of Mind ability and trait attributions made to stigmatised children (children with physical disabilities, foreign accents and obesity) and non-stigmatised children. Children with better ToFM made more positive attributions, suggesting that the ability to understand another person's perspective is important in children's attitudes towards stigmatised groups such as children with obesity. However, a recent study by O'Toole, Monks and Tsermentseli (2017) found no relationship between Theory of Mind and pro-social behaviour in their sample of 3-6-year-old children. O'Toole et al. (2017) suggest that the variability in findings in this area may be reflective of the methods used to measure pro-social behaviour in children, which differ greatly between different studies.

In a recent meta-analysis of research in this area, Imuta et al. (2016) found that Theory of Mind was related to different types of pro-social behaviour (i.e. helping, comforting & cooperating) and that this relationship was stronger for 6-12-

year-old children compared to children under 6 years old. Imuta et al. (2016) argue that this may reflect the fact that pro-social behaviour in younger children may not rely entirely on Theory of Mind ability and may also reflect other processes such as social norms and the motivation for social interaction. This suggests that children's ability to act pro-socially towards peers may be related to their Theory of Mind capabilities although, this is not the only process involved in these behaviours.

### **Empathy and Pro-social Behaviour**

Empathy has been defined as, “an affective state that stems from the apprehension of another’s emotional state or condition,” (Eisenberg & Miller, 1987, p. 91). More recent research has acknowledged that empathy is a multidimensional trait that includes both cognitive and emotional components that require the recognition of different emotions in others and also the ability to feel these emotions (Lawrence et al, 2004). Stephan and Finlay (1999) go further in describing how emotional empathy can be divided into parallel and reactive empathy. Parallel empathy describes the ability to feel a similar emotional state to another person, reactive empathy refers to being able to hold the perspective of another person in mind and respond to their emotional state.

Strayer and Robert’s (1989) model of pro-social behaviour suggests that there are number of factors involved in the relationship between empathy and pro-social behaviour, such as the ability to role take and have insight into these roles. This suggests that children need to develop a number of skills in order to be able to use empathy to motivate their pro-social behaviour.

The relationship between pro-social behaviour and empathy in children has been demonstrated across different stages of children’s development. Svetlova,

Brownell and Nichols (2010) found that older infants aged 30 months were able to demonstrate empathic helping such as passing a blanket to an adult who indicated that felt cold and were distressed, a skill that was displayed less in the younger infants in the study (aged 18 months). The younger infants in this study responded in situations that required instrumental helping, such as passing a peg that was out of reach to an adult hanging items on a clothes line, but were unlikely to respond in situations that required them to understand the emotional state of the adult who needed help. This study demonstrates how pro-social behaviour becomes increasingly sophisticated as children grow and the central role of empathy in the development of these skills.

In a longitudinal study, Eisenberg, Lennon and Roth (1983) found further development of children's pro-social reasoning between the ages of 4-6 years old. During this time children's use of self-focused reasoning (e.g. helping motivated by selfish reasons such as concerns about having help reciprocated in the future) decreased and the ability to use empathic reasoning, such as expressing concern for others in situations that conflicted with their own needs, increased. This suggests that the ability to empathise with others continues to play an important role in children's pro-social behaviour and reasoning as they grow older. In a similar longitudinal study following children from 5-12 years of age, Eisenberg et al. (1987) found that for pro-social behaviour involving greater sacrifice such as donating, older children (11-12 years old) were more likely to use empathic reasoning in their justifications.

Gender differences in empathy in relation to pro-social behaviour have also been demonstrated at various stages of children's development (Schwenck et al., 2014). Eisenberg et al. (1987) found that for girls, the use of empathy in pro-social

reasoning increased as they grew older, but this same pattern was not found for boys. Similarly, in a more recent study Warden and McKinnon (2003) found that 9-10-year-old girls had greater empathic awareness compared to boys of the same age. Roberts and Strayer (1996) also found that girls at age 5, 9 and 13 years old were more empathic than boys, but that empathy had greater influence in the pro-social behaviour of boys compared to girls. A possible reason for this may be that girls are expected to behave pro-socially and therefore the gender role motivates pro-social behaviour even without having empathy (Roberts & Strayer, 1996).

### **Empathy and Stigma**

The ability to evoke empathy has also been found to be important in reducing stigma towards people who are typically the receivers of discrimination and prejudice (Batson et al., 1997), suggesting that it may be an important factor to consider in children's attitudes towards obese peers.

However, Stephan and Finlay (1999) argue that the relationship between empathy and reducing discrimination is complex and is dependent on what the goal of the intervention is e.g. to increase understanding or improve inclusion of a stigmatised group. They also argue that increasing empathy for stigmatised groups does not always have the desired outcome as some interventions can increase avoidance of a particular stigmatised group as people can become anxious that they might develop the stigmatised characteristic; this could be particularly relevant for obesity, which can be caused by lifestyle factors.

Studies that have explored the effects of interventions aimed at reducing stigma towards obese people have focused on increasing understanding about the causes of obesity, specifically medical causes. DeJong (1980) found that vignettes

involving a teenager with obesity who gave a medical reason for their weight, such as a glandular problem, were rated more positively than vignettes who did not give a medical reason for their obesity. In a similar study involving children, Anesbury and Tiggerman (2000) found that regardless of whether children received information about the causes of obesity (not in personal control) both groups of children attributed negative stereotypes to the figures with obesity, suggesting that increasing understanding and empathy towards obesity is not enough to modify negative attitudes towards this population.

Studies that have focused specifically on increasing empathy for individuals with obesity have also experienced problems in reducing stigma. Teachman et al. (2003) attempted to increase empathy for people with obesity by exposing participants to first hand stories about the discrimination people with obesity experience. However, there was no difference in the bias shown towards vignettes with obesity in the participants who received the empathy-evoking stories. A recent study by Khan et al. (2018) found that when participants were given a vignette that explained that obesity was caused by psychological problems such as an eating disorder that resulted from a traumatic experience, this was effective in reducing bias against obesity compared to when a behavioural cause was given for obesity. This suggests that when a reason for obesity is given that can increase empathy, stigma may be reduced. However, both of these studies involved adults and therefore it is not unknown if increasing empathy in the same way would be effective in reducing obesity stigma in children.

### **Summary of Research on Children's Pro-Social Behaviour**

Previous research exploring children's pro-social behaviour suggests that this is a multi-dimensional concept including a number of different behaviours (Paulus, 2014). Children start to develop different pro-social behaviours from infancy and throughout childhood and begin to discriminate and develop different attitudes towards the provision of these behaviours (Jackson & Tisak, 2001).

Factors such as empathy and Theory of Mind may play an important role in the provision of pro-social behaviours (Capri et al., 2012; Eisenberg, et al., 1983), particularly towards groups of children who are typically stigmatised (Lapan & Boseovski (2016). However, there is some variability in the findings regarding young children in this area (O'Toole et al., 2017). Although empathy and Theory of Mind are important factors in the provision of pro-social behaviour, research has indicated that there are likely a number of other social and cognitive processes involved, including social norms (Imuta et al., 2016).

Previous research has indicated that children with obesity may be less likely to receive help from their peers (Patel & Holub, 2012) however, little is known regarding children's attitudes towards providing other pro-social behaviours to peers with obesity. Research has indicated that some children feel sympathy towards peers with obesity (Dixey et al., 2001), which may motivate them to comfort or share with these peers. However, research has also indicated that children's decisions to share with peers are influenced by the attributions they make to others e.g. 'nice' (Kenward & Dahl, 2011), suggesting that children will be less likely to act in pro-social ways towards peers with obesity as studies have shown that figures with obesity are typically given more negative attributes (Cramer & Steinwert, 1998; Su



& Aurelia, 2011). This suggests that there is value in exploring children's pro-social behavioural intentions towards peers with obesity.

### **Rationale for the Current Study**

The current study aims to address some of the limitations of previous research and provide greater insight into children's pro-social behavioural intentions towards peers with obesity. Previous research has suggested that children discriminate against peers with obesity when being asked to provide help (Patel & Holub, 2012). However, developmental research suggests that pro-social behaviour is made up of distinct pathways (Paulus, 2014) and requires children to develop different skills and abilities (Dunfield, 2014). This suggests that pro-social behaviour is multi-dimensional and therefore young children may have different attitudes towards providing different types of pro-social behaviours to peers with obesity.

To explore if there are differences in children's attitudes, children in this study will be asked to respond to a range of pro-social vignettes. As well as helping, sharing and comforting have been included in the current study to provide greater insight into a range of pro-social behaviours. A stealing scenario has also been added to provide a contrast to the pro-social behaviours.

The current study also aims to improve on some of the methodology of previous research, for example by taking place in the school environment, which is more familiar to children. The use of a story book with good quality illustrations is also an advantage of the current study. The style of questioning within the current has also been considered to reduce the effects of social desirability (Barter & Renold, 2000) and repeat questioning on children's responses (Brady, et al., 1999).

The aim of this study is to further explore children's pro-social intentions towards peers with obesity, specifically with regards to helping, sharing and comforting. The following hypotheses have been made with regards to children's responses across the pro-social, stealing and playmate scenarios:

- 1) Children will choose the characters with obesity (Alfie and Alfina) significantly less than the characters with healthy weight (Holly and Thomas) in the helping, sharing and comforting scenarios.
- 2) Children will choose the characters with obesity as a playmate significantly less than the characters with healthy weight.
- 3) In the helping, sharing and comforting scenarios girls will choose the characters with obesity significantly less frequently than the characters with healthy weight.
- 4) Children will choose to steal from the characters with obesity significantly more often than the characters with healthy weight in the stealing scenario.

For the qualitative element of the study, the aim is to explore children's reasoning for their character selection across the pro-social, antisocial and playmate conditions. This study aims to give a broad overview of the themes within each pro-social and stealing scenario as well as exploring how children's justifications correlate to their character choices.

## **METHOD**

### **Ethical clearance**

This study was approved by the School of Medicine Ethics Committee at the University of Leeds (Ref: MREC 16-119, see Appendix A). Consent to participate in this study was sought from parents/legal guardians and children's assent was sought before administering any part of the procedure (see Appendix B for Assent Procedure). Children's assent was sought on a one-to-one basis. The researcher monitored children throughout the study to ensure children did not become distressed. All the children who participated in this research engaged with the story and seemed to enjoy the reading activity.

### **Participants**

Primary schools from the West Yorkshire area were identified using the local authority website. Schools were deemed suitable for the study if their demographic characteristics were broadly average e.g. average number of pupils receiving pupil premium (additional funding given to children who are in local authority care or whose families are in receipt of benefits). In total 35 suitable primary schools were identified and sent written information about the study (see Appendix C). These schools were then followed up with a telephone call to discuss if they wanted to participate and a mutually convenient time for the study to take place was arranged. A total of two schools were recruited in this way and a further two schools were recruited through contacts known to the researcher.

The participating schools were situated in different areas of West Yorkshire (three in the suburbs of Leeds, one in a rural area outside Leeds). Information taken from the local authority website showed that three of the selected schools had below average levels of children who speak English as a second language, with the majority of pupils from a White British ethnic background. One of the selected schools had above average numbers of pupils speaking English as a second language; around half of the pupils were of White British background, whilst around a third were of Pakistani/Indian background.

From these schools, 259 Reception and Year 1 children were invited to participate in the study (see Appendix D for Information Letter given to parents). A total of 76 (29%) parents gave consent for their children to participate. Of these, 29 were female and 47 were male. Data was excluded from four participants due to errors with the recording equipment. This left a total of 72 (25 females, 47 males) children included in the data analysis. All children were recruited from Reception (n=37) and Year 1 (n=35), children in these school years are aged between 4 to 6 years old. The ethnic background of the participants was not recorded, however, information about the ethnic demographic of the participating schools was taken from the local authority website.

## **Materials**

### **Story Book**

A story was created specifically for this study involving four vignettes relating to helping, sharing, comforting and stealing (see Appendix E). The characters in the story were taken from previous research exploring children's attitudes towards

obesity (Harrison et al., 2016). There are four characters in total, two with healthy weight (Holly and Thomas) and two with obesity (Alfie and Alfina).

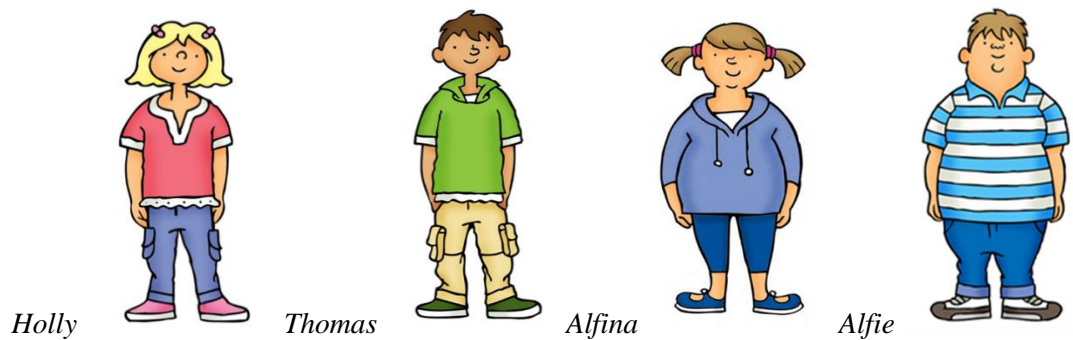


Figure 1. *Example of Illustrations*

These characters were chosen due to being successfully used in previous research involving children of a similar age range (Charsley et al., 2018; Harrison et al., 2016) and because the illustrations are similar to those used in story books for this age group (see Figure 1.).

The story involving the helping, sharing, comforting and stealing vignettes was based on the characters making pictures to go on the classroom wall. The helping vignette was based on previous research by Patel and Holub (2012) who found the highest levels of discrimination in a vignette asking children to help a peer with obesity pick up crayons dropped on the floor. In the sharing vignette children are asked to decide who Holly/Thomas will share a limited resource with (glitter that has almost run out) and in the comforting vignette children are told that paint has spilled all over the pictures and that the characters are upset. Children are asked to decide who Holly/Thomas will give a hug to and finally, in the stealing vignette children are asked to decide who Holly/Thomas will steal a sticker from.

In the story, it was decided to make the recipients of the pro-social (and antisocial) behaviour the same gender as the participant. The decision to use this format of response was based on research showing that children act more pro-socially towards members of their own sex (Tisak, Tisak, & Laurene, 2012). It was also a concern that children might not differentiate between their own opinion and that of the character whose perspective they were being asked to take. Children of this age have been found to have difficulty in assuming a different role to their own, particularly if they have not had direct experience of that role (Chandler & Helm, 1984).

Consideration was given to the length of the story and the complexity of the language used. Story books aimed at young children were explored in the development of the story used in this study. A small pilot study was also carried out with children known to the researcher to ensure that the story was accessible to children in this age range. No changes were made to the story after the pilot study was carried out.

### **Body Shape Ratings**

Children were also given a rating by the researcher with regards to their body shape. Children's body size was compared to a pictorial scale of different body sizes (Collins, 1991, see Appendix F). The scale includes seven figures of ascending body size. The researcher included this measure of body size as there are restrictions on accessing data about children's weight and body mass index.

## **Procedure**

On the day of the study the researcher liaised with the class teacher to arrange how to meet with the children whose parents had given consent. Children's assent was then gained on an individual basis before administering any of the research material.

Children were interviewed on a one-to-one basis in an area outside the classroom. The researcher introduced themselves as a visitor to the school who was reading a story with some of the children. All interviews were audio-recorded. Children were encouraged to lead in the reading of the story as this is a format they are familiar with at school. However, the researcher supported children in reading the story when they were unable to do so. After children had finished reading the story they were presented with the playmate selection task. Characters from the story were presented side by side on an A4 sheet (see Appendix G). Once children had made their playmate selection they were given a sticker for participating and told the activity had finished.

All children were invited to read the same story about friends Alfie, Alfina, Holly and Thomas. This design was chosen to allow greater understanding of each child's responses to the pro-social vignettes. The pro-social vignettes within the story were arranged into three different sequences to counterbalance for any effects caused by the order of the vignettes. The stealing vignette was always presented last within the story as it was expected that this vignette would elicit the biggest difference in terms of response to the character with obesity.

In each vignette children were presented with a forced-choice scenario, being asked who they thought the character would give priority to (i.e. "who is Holly



going to help first, Thomas or Alfie?) Children were then asked why they selected this character. For the playmate scenario children were asked which of the characters they would most like to play with and again asked why they selected this character. For the pro-social and stealing scenarios children were being asked what the character in the story would do as it was envisaged that these scenarios might elicit socially desirable responses and vignettes have been found to be useful in exploring sensitive subjects with children (Barter & Renold, 2000). For the playmate scenario children were asked for their own preference, in order to make direct comparisons with previous studies (Patel & Holub, 2012). The style of questioning in the forced-choice scenario was also modified slightly by asking children to give priority to one character over the other. It was hoped that this style of questioning would reduce the effects of social desirability on children's responses.

### **Analysis**

The frequency of children's character selections was analysed using one-proportion z-score calculations to see if there were significant differences across the pro-social, stealing and playmate scenarios. This analysis was chosen as it is appropriate to the type of data that was collected (categorical, within-subject). An on-line z-test calculator was used ([www.medcalc.org/calc/test\\_one\\_proportion.php](http://www.medcalc.org/calc/test_one_proportion.php)) in order to calculate the proportion of children choosing each character in the pro-social, stealing and friendship scenarios (see Appendix H for full table of z-test results). For each scenario the proportion of children who chose a particular character was compared to the proportion needed in order to accept the null hypothesis (50%). The character preferences for girls and boys were analysed separately.

Children's comments in response to each of the conditions were analysed using thematic analysis. The method outlined by Braun and Clarke (2006) was used to analyse data. This method was chosen due to its flexibility as children were unlikely to give detailed responses, which would make other forms of in-depth qualitative analysis more difficult. The stages below outlined how children's comments were analysed using Braun and Clarke's (2006) method. The data was approached without a theoretical framework so that the themes closely reflected children's comments within the data.

Firstly, data was fully transcribed from recordings. An excel database was created to help the researcher identify which child and scenario the comments related to. This also helped the researcher to become familiar with the data. At the next stage all the children's comments were coded. This was done manually by going through each child's comments and using coloured pens to reflect different codes. The researcher also wrote children's comments on to sticky notes so that they could be used flexibly when generating initial themes. Thirdly, after going through the codes within the data it was decided to continue analysing the whole data set rather than looking separately at children's responses within each pro-social scenario. This was due to the similarities in the codes used throughout the different scenarios. Initial themes were created by looking for patterns amongst the codes and grouping together codes that appeared to have similar meanings. This was again done manually by moving back and forth between children's comments and the initial themes until it was a felt good match was found. Fourthly, an initial thematic map was created outlining the main themes in the data. This was discussed with the research supervisors to ensure that the themes were well-defined and they captured the data appropriately. In the last stages the initial thematic map was refined by going back to the original comments in the data to check that they reflected the

themes accurately. At this stage, some themes were merged or removed if it was felt they did not capture the data well enough. A final thematic map was then produced, providing an overview of salient themes within the data.

Once the thematic map was completed and agreed upon, the frequency of themes and sub-themes within the different conditions was calculated to highlight any patterns or differences. Once the data had been analysed as a whole, further analysis took place to calculate the frequency of the themes within each of the pro-social scenarios.

Children's comments were then coded for positive, negative or neutral valence and also for imaginary and concrete valence. This was done by creating a framework of definitions for different responses (see Appendix I & J).

### **Quality Checks**

The coding of children's responses was checked independently by the research supervisors using the valence framework. Disagreements arose in a minority of comments, which were discussed further until an agreement was reached.

## RESULTS

### Character Selection

Across the pro-social scenarios (helping, sharing, comforting) significantly less children showed a preference for Alfie and Alfina as the recipients of the pro-social behaviour (see Table 1). The girls chose Alfina as the recipient of the pro-social behaviour in 30% of the pro-social scenarios ( $z=3.37, p<0.01$ ) and Alfie was chosen by the boys in 40% ( $z=2.37, p=0.01$ ).

Table 1.

*Frequency of Character Selection across Pro-Social Scenarios*

Character	Helping % (n)	Sharing % (n)	Comforting % (n)	Total % (n)
Holly	71 (17)	61 (14)	79 (19)	70 (50)
Alfina	<b>29 (7)*</b>	39 (9)	<b>21 (5)**</b>	<b>30 (21)***</b>
Don't Know*	(1)	(2)	(1)	(4)
Total n	25	25	25	75
Thomas	60 (28)	64 (30)	55 (26)	60 (84)
Alfie	40 (19)	<b>36 (17)*</b>	45 (21)	<b>40 (57)**</b>
Total n	47	47	47	141

\* $p<0.05$ , \*\* $p<0.005$ , \*\*\* $p<0.001$

\* "Don't Know" responses excluded from analysis

### **Helping, Sharing & Comforting**

In the helping scenario significantly less girls chose Alfina as the character who Thomas would help ( $z=2.05$ ,  $p=0.03$ ), whereas in the sharing scenario significantly less boys chose Alfie as the character who Holly would share with ( $z=1.92$ ,  $p=0.05$ ). Gender differences were also observed in the comforting scenario as significantly less girls chose Alfina as the character who Thomas would give a hug to ( $z=2.84$ ,  $p=0.004$ ).

### **Consistency of Character Selection Responses**

In total, 25% ( $n=18$ ) children were consistent in their character selection across the pro-social scenarios, meaning that they chose the same character as the recipient of the pro-social behaviour in the helping, sharing and comforting scenarios. Significantly fewer children favoured Alfie and Alfina consistently across the pro-social scenarios (17%,  $z=2.80$ ,  $p=0.005$ ). Significantly fewer children also chose Alfie or Alfina in two out of the three pro-social scenarios (31%,  $z=2.74$ ,  $p=0.006$ ).

### **Stealing**

Table 2 shows children's responses in the stealing scenario. In the stealing scenario, children showed a clear preference for stealing from Alfie or Alfina. This difference was significant for both the girls ( $z=3.00$ ,  $p=0.002$ ) and boys ( $z=2.19$ ,  $p=0.02$ ).

Table 2.

*Frequency of Character Selection in the Stealing Scenario*

Character	Stealing % (n)
Holly	20 (5)
Alfina	<b>80 (20)**</b>
Total	25
Thomas	34 (16)
Alfie	<b>66 (31)*</b>
Total	47
<b>Total (n)</b>	<b>72</b>

\* $p < 0.05$ , \*\* $0.005$

**Playmate**

In the playmate scenario (i.e. “who would you most like to play with?”) children could choose from any of the characters (rather than just those of the same gender). Table 3 below shows that none of the girls chose Alfina as a playmate ( $z=5.00$ ,  $p < 0.001$ ). However, for the boys, 34% chose either Alfie or Alfina as a playmate although there was still a preference for Holly or Thomas as a playmate ( $z=2.19$ ,  $p=0.02$ ).

Table 3.

*Frequency of Character Selection in the Playmate Scenario*

	Holly/Thomas <i>n</i> (%)	Alfie/Alfina <i>n</i> (%)	Don't Know	Total ( <i>n</i> )
Girls	25 (100)	<b>0***</b>	0	25
Boys	27 (57.5)	<b>16 (34)**</b>	4 (8.5)	47

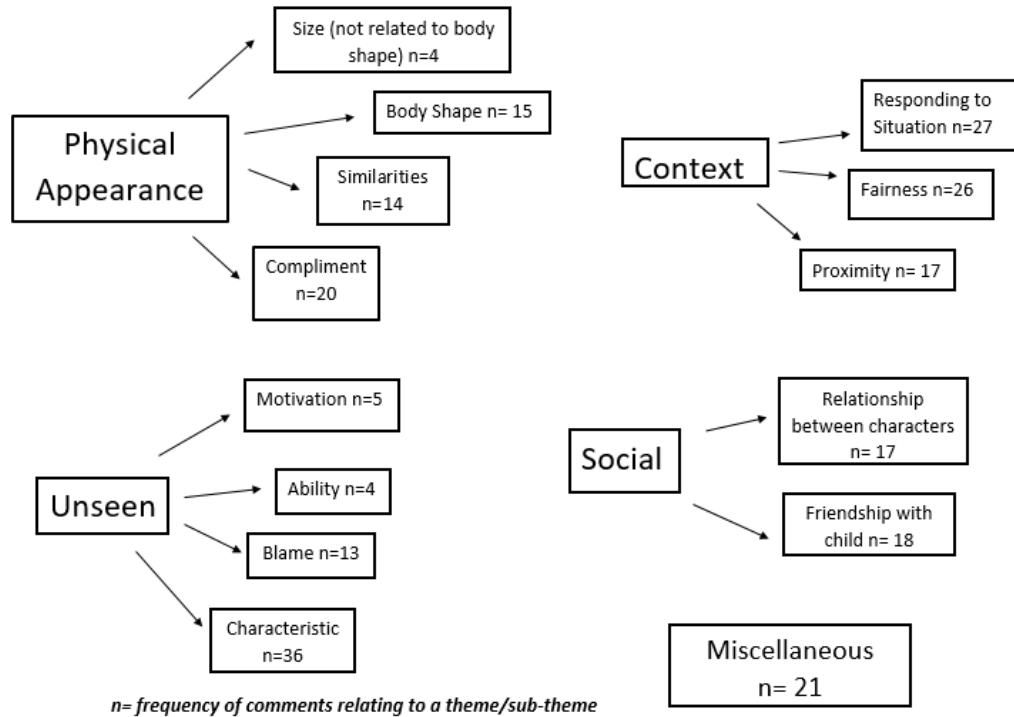
\*\*\* $p < 0.001$ , \*\* $p < 0.005$

**Children's Reasoning**

Alongside children's character selections, a further aim of this study was to explore children's qualitative responses across the pro-social, stealing and playmate scenarios. In each scenario children were asked why they had chosen a particular character. Figure 2 below shows the thematic map of the themes and sub-themes that were created from the comments made by the children across all the scenarios. The overall frequency of these themes and sub-themes across all conditions is also included. A full table of themes including children's comments can be found in the appendix (see Appendix K). From the thematic analysis, four main themes were created; each theme and sub-theme are discussed further below.

Figure 2.

*Thematic Map of Themes including Frequency of Comments*



### **Physical Appearance (sub-themes Size, Body Shape, Similarities, Compliment)**

This theme refers to comments relating to the physical appearance of the characters. The ‘size’ sub-theme refers to comments about the size of the characters that did not specifically include body shape, for example, *“Because Alfie is smaller than Holly.”* The ‘body shape’ sub-theme was used where children specifically referred to this in their comments about the characters e.g. *“There’s only one boy I want to play with [Thomas]. Because Thomas is skinny and that one is fat [Alfie].”* In the ‘compliment’ sub-theme children also made comments that suggested that they liked an aspect of the character’s appearance for example clothing, *“Because I like his [Alfie] t-shirt because it’s all stripes.”* The ‘similarities,’ sub-theme refers to comments where children identified a similarity in the physical appearance of the characters, for example, *“Because they almost have the same pockets [Holly & Thomas].”*



### **Unseen (sub-themes motivation, ability, blame, characteristic)**

All of the comments coded under this theme referred to characteristics or features that were not included in the narrative of the story. The ‘motivation,’ sub-theme referred to comments where children suggested that the characters had a particular motive, for example, *“Because she wants to share with Thomas first.”* Comments coded under the ‘ability,’ sub-theme referred to characters being competent, for example, *“Because I think Holly is better at picking up,”* or characters being incompetent, for example, *“Because Alfie can’t do it by himself.”* Children also made a number of comments that referred to a character being to blame, for example, *“Because he actually pushed them [crayons].”* These type of comments were coded under the ‘blame,’ sub-theme. Some of the comments suggested that the characters had a particular type of personality, these comments were coded under the ‘characteristic’ sub-theme. Children referred to positive aspects of the character’s personality, for example; *“Holly is a nice girl,”* and *“Because Thomas is the bravest,”* however, some comments also implied that the characters had negative personality traits, for example, *“Maybe because Alfie might have hit Holly.”* All of the comments coded under this category suggested that children used their imagination in their responses, which is discussed further in this section.

### **Context (sub-themes responding, fairness, proximity)**

Children’s reasoning also involved comments relating to the context of the situation as it was presented on the page. The ‘responding’ sub-theme referred to comments where children suggested that the character should respond to the situation, for example, *“Because there’s a mess.”* The ‘fairness’ sub-theme was used when children referred to taking turns between the characters, for example,

*“Because she’s [Alfina] not had a go.”* The ‘proximity’ sub-theme refers to children using the proximity of the characters as they appeared on the page in their reasoning, e.g. *“Because Holly is next to Thomas.”*

### **Social (sub-themes relationship between characters, friendship with child)**

Many of the comments coded under this theme also referred to aspects not included as part of the narrative such as a friendship. Children referred both to a relationship between the characters, for example, *“Because Holly might be friends with Alfie,”* and also to having a friendship with the characters themselves, *“Because Holly might be my best friend.”* Some children also referred to actual friends who had the same name as the character in the story for example, *“Because Alfie in my class is my best friend.”*

### **Miscellaneous**

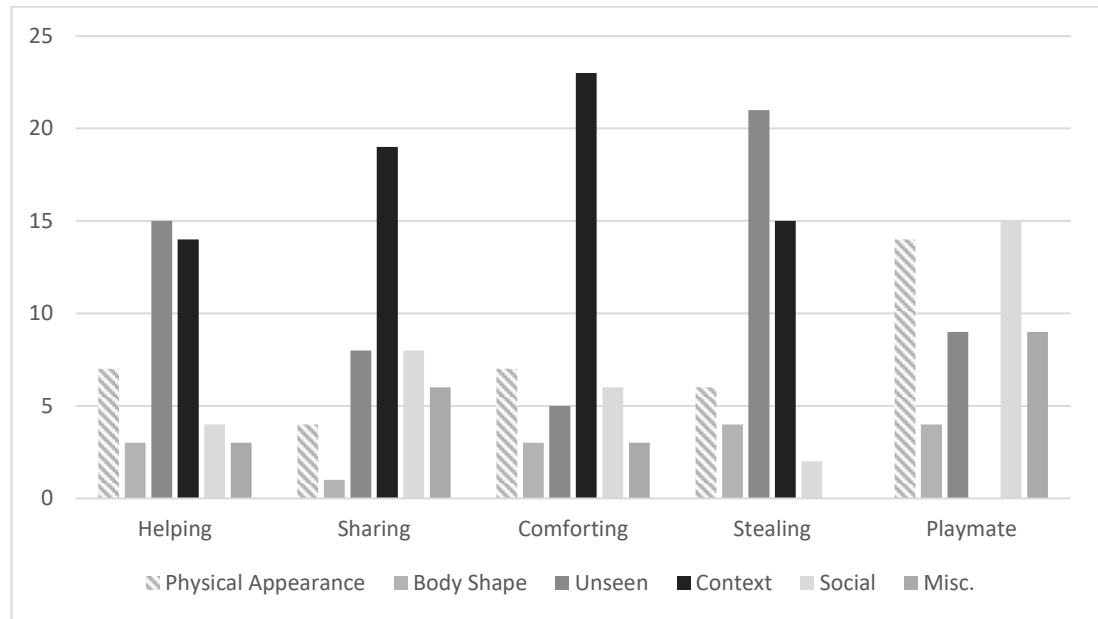
Unfortunately, some of the comments made by the children were unable to be coded into one of the four themes described above. Some of the comments did not seem to relate to the main themes, for example, *“Because I have a fish called Alfie.”* Due to the age group of the children participating in this study, there were also some comments that the researcher was unable to make sense of, for example, *“Because Alfina likes colours.”*

### **Frequency of Themes**

The frequency of the comments relating to the main themes within each scenario was also explored to highlight any patterns or differences in children’s responses to the different pro-social behaviours. For the ‘physical appearance,’ theme, comments about body shape were separated to highlight the frequency of this type of comment within children’s responses (see Figure 3 below).

Figure 2.

*Frequency of Themes in each Scenario*



### **Helping**

Figure 3 above shows the frequency of children's justifications for character preferences within the helping scenario. Children most frequently gave justifications that were coded under the 'unseen,' theme (33%, n=15), for example suggesting that one of the characters was to blame e.g., "*Because Holly dropped all the crayons,*" [blame sub-theme]. Children also frequently made comments that were coded under the context theme (30%, n=14) for example, commenting on the proximity of characters as they appeared on the page e.g., "*Because Holly is next to Thomas,*" [proximity sub-theme]. A total of 7 of the children's comments referred to the physical appearance of the characters, although only 3 (7%) referred to body shape.

### **Sharing**

The frequency of children's comments in the sharing scenario was also calculated (see Figure 3 above). Comments coded under the 'context,' theme accounted for half of the reasons given by children (41%, n=19). Some of these comments reflected children taking turns to choose different characters in the scenarios, for example, "*Because Holly already had her turn,*" [fairness sub-theme]. Children also stated social reasons (17%, n=8) for their character selection for example, friendship between the characters, "*Because Holly and Alfie are best friends,*" [friendship between characters sub-theme] and reasons coded under the 'unseen' theme, e.g. "*Because Thomas is a nice boy,*" [characteristic sub-theme]. The physical appearance of the characters appeared less frequently in children's reasoning in this scenario (9%, n=4).

### **Comforting**

Figure 3 shows that the most popular reason given by children reflected comments coded under the context theme (49%, n=23), for example commenting on the situation as it appeared in the story; "*Because Holly is upset,*" [responding to the situation sub-theme].

Interestingly, comments relating to the physical appearance of the characters, for example, "*Because they have the same colour hair [Alfina & Thomas],*" [similarities sub-theme] appeared more frequently in children's justifications in this scenario (15 %, n=7) and the helping scenario (n=7), compared to in the sharing scenario (n=4).

### **Stealing**

Figure 3 shows that children most frequently gave comments coded under the 'unseen' theme (44%, n=21), for example, "*Maybe because Alfie might have hit*

*Holly*,” [characteristic sub-theme] in the stealing scenario. Children also commented on the context (31%, n=15), for example, “*Because now it’s back to him again*,” [fairness sub-theme]. The physical appearance (including body shape) (21%, n=10) of the characters also appeared frequently in children’s reasoning, for example, “*Because they’ve got the same trousers [Holly & Thomas]*” [similarities sub-theme].

### **Playmate**

Comments regarding the physical appearance of the character (including body shape) were the most frequent answer given when children were asked to give a reason for their selection of playmate (35%, n=18). Many of the children complimented the appearance of the character they chose for example, “*Because I like Thomas’ t-shirt and I like him*,” [compliment sub-theme]. Comments coded under the social theme were also frequently given by children in the playmate scenario (n=15, 29%), for example, “*Because Holly might be my best friend*,” [Friendship with child sub-theme]. Children also made comments coded under the unseen theme (18%, n=9), for example, “*Because Thomas is the bravest*,” [characteristic sub-theme]. No comments relating to the context theme were made.

### **Comments about Body Shape**

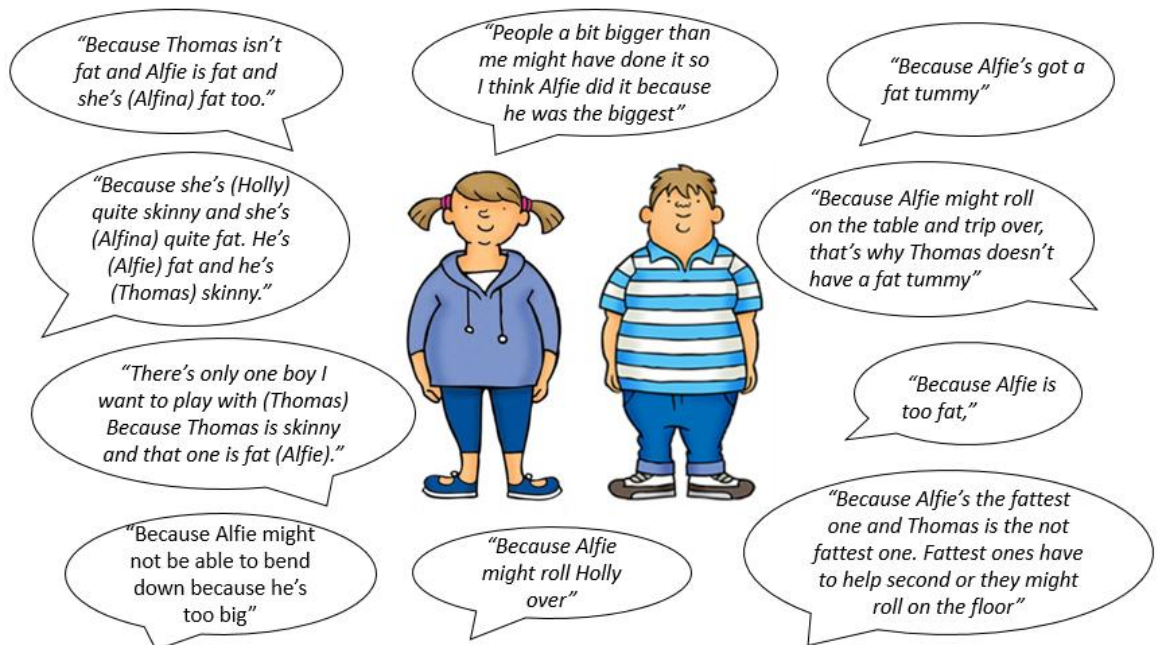
Across all scenarios a total of 11% (n=8) of the children commented on the body shape of the characters. Children’s comments described Alfie and Alfina as “fat,” and Thomas and Holly as “skinny.” These comments accounted for 6.7% (n=15) of the total number of comments made. Half of the children who commented on body shape were male and were in year 1 (n=4). It was also noted that 2 children commented consistently on the body shape of Alfie across all scenarios. Both of these children were male, one was in Reception and the other Year 1.

A total of 8 comments referred to the body shape of Alfie and Alfina as impacting negatively on their ability for example, *“Because Alfie has a big belly...because if we were playing...if we were running together...if we were playing football Alfie would cover up the football,”* and *“Because Alfie might roll on the table and trip over, that’s why. Thomas doesn’t have a fat tummy.”*

In 7 comments, the body shape of Alfie and Alfina was used as a justification for the children’s preference of Thomas or Holly for example, *“There’s only one boy I want to play with [Thomas], because Thomas is skinny and that one [Alfie] is fat,”* and *“Because Thomas isn’t fat and Alfie is fat and she’s [Alfina] fat too.”*

Figure 4.

*Examples of Comments about Body Shape*



### **“Don’t Know” Responses**

Across all scenarios there were 123 “don’t know,” responses, the majority of these were made by Reception aged children (67%). Boys also gave more “don’t know,” (68%) responses compared to girls (32%).

A total of 42% of the “Don’t Know” responses were made when children chose Alfie and Alfina in the pro-social and playmate scenarios. In the stealing scenario, 68% of “Don’t Know,” responses were made when children chose Alfie and Alfina.

### **Positive vs Negative Valence**

Children’s comments across all pro-social, antisocial and playmate scenarios were coded as having either positive, negative or neutral valence. Across all scenarios the majority of children’s comments were coded as neutral ( $n=122$ , 52 %), with a similar number of comments coded as positive ( $n= 60$ , 25%) and negative ( $n= 55$ , 23%).

Across the pro-social and playmate scenarios 59 positive comments about the characters were made. Significantly less of these comments (35%,  $n=21$ ) were given when children selected either Alfie or Alfina as the character they thought would be helped, shared, comforted and played with ( $z=2.30$ ,  $p=0.02$ ). Interestingly, significantly more negative comments were also given when children chose Thomas or Holly in the pro-social scenarios ( $z=3.03$ ,  $p=0.02$ ).

In the stealing scenario a total of 20 negative comments about the characters were made, 85% of these were made when children chose either Alfie or Alfina as the character they thought would have a sticker stolen from them ( $z=3.13$ ,  $p=0.001$ ).

### **Imaginary vs Observation**

It was also recognised that many of the comments made reference to children's observation of the scenario as it appeared in the story, e.g. "*Because Alfie's has a stripy t-shirt,*" or to an aspect of their own experience for example, "*Because I've got a fish called Alfie.*" Although these comments reflected an aspect of children's observations, they did not necessarily correspond to children's choice of character, for example, "*Because all the paint spilled.*"

Other comments referred to imagined aspects of the story that were not part of the narrative, for example, "*Maybe because Thomas might be Holly's best friend.*" A number of comments were also coded as avoidant where children gave a "don't know" response (see Appendix J for Valence Framework).

A total of 30% (n=72) were coded as observation and 57% (n=136) of the children's comments were coded as imaginary. Avoidant reasoning accounted for 12% (n=29) of the comments made.

The proportion of imaginary, observation and avoidant comments made for each of the character types (Holly/Thomas versus Alfie/Alfina) was also calculated across the pro-social scenarios (helping, sharing, comforting and playmate) and for the stealing scenario (see Table 3 below). Children made significantly more imaginary comments when choosing Alfie and Alfina in the stealing scenario ( $z=2.82, p=0.004$ ). A significant difference was also found for the proportion of observation comments made in the pro-social scenarios when children chose Alfie and Alfina ( $z=4.41, p=0.001$ ).



Table 3.

*Proportion of Imaginary, Observation and Avoidant Comments across Pro-Social & Stealing Scenarios*

	Imaginary % (n)		Observation % (n)		Avoidant % (n)	
	Thomas/ Holly	Alfie/ Alfina	Thomas/ Holly	Alfie/ Alfina	Thomas/ Holly	Alfie/ Alfina
<i>Pro-Social</i>	57% (77)	43% (59)	76% (55)	<b>24%</b> <b>(17)**</b>	62% (13)	38% (8)
<i>Total</i>	136		72		21	
<i>Stealing</i>	25% (8)	<b>75%</b> <b>(24)*</b>	42% (5)	58% (7)	25% (2)	75% (6)
<i>Total</i>	32		12		8	

*\*p<0.005, \*\*p<0.001*

### **Body Shape Ratings**

The majority of children (96.1 %) were given a rating of 4, which is average body size on the body shape rating scale used in the current study (Collins, 1991). There were few children who were given a rating outside of this, four children were given a rating of 5 and one child a rating of 6, suggesting that these children were overweight. One child was given a rating of 3, suggesting they were underweight. No differences were observed in the character selections or comments made by children who were given different body shape ratings.

## **DISCUSSION**

### **Summary of Results**

#### **Character Selection**

The following hypotheses were made with regards to children's character selection.

- 1) Children will choose the characters with obesity (Alfie and Alfina) significantly less than the characters with healthy weight (Holly and Thomas) in the helping, sharing and comforting scenarios.
- 2) Children will choose the characters with obesity as a playmate significantly less than the characters with healthy weight.
- 3) In the helping, sharing and comforting scenarios girls will choose the characters with obesity significantly less frequently than the characters with healthy weight.
- 4) Children will choose to steal from the characters with obesity significantly more often than the characters with healthy weight in the stealing scenario.

Consistent with the first hypothesis, across the pro-social scenarios both girls and boys chose to help, share and comfort with the characters with obesity significantly less than would be expected. Significantly fewer children chose the characters with obesity consistently across the pro-social scenarios, suggesting a robust bias against the character with obesity. The characters with obesity were also

chosen significantly less in two out of three pro-social scenarios, also suggesting rejection of the characters with obesity.

However, there were also some differences between the pro-social scenarios; girls rejected the characters with obesity in the helping and comforting scenarios, whereas only boys rejected the characters with obesity in the sharing scenario.

The findings of the study were also consistent with the second hypothesis as significantly less children chose the characters with obesity as a playmate. Interestingly, when the girls' and boys' responses were separated, only the girls were found to reject the characters with obesity as a playmate. The third hypothesis can be partially accepted as significant differences were found in the girls' responses to helping and comforting characters with obesity. However, gender differences were also observed in the sharing scenario with the boys' responses, indicating that they would share with the characters with obesity significantly less than would be expected. Finally, consistent with the fourth hypothesis, children chose to steal from the characters with obesity significantly more than would be expected.

### **Children's Reasoning**

The aim of this study was to explore children's responses across the pro-social and stealing scenarios. This study also intended to explore in more detail how children's reasoning related to their character selection. Children's comments were organised into four main themes, physical appearance, unseen, context and friendship. A miscellaneous theme was created for comments that were not able to be coded.

Across all scenarios only a small number of children commented on the body shapes of the characters and used this in their reasoning for their character selection. However, comments about other aspects of the physical appearance of the characters (e.g. clothing, hair colour) were more frequent, particularly in the playmate scenario. In the stealing scenario comments relating to the theme of unseen (i.e. attributes of the characters) were most common and in the helping and comforting scenarios comments relating to the context theme (i.e. feature of the scenario) were most frequent.

Comments were also coded for positive, negative and neutral valence. There was some evidence of bias against the characters with obesity in children's reasoning for their character selections. In the pro-social scenarios (helping, sharing, comforting and playmate) significantly less positive comments were made about the characters with obesity and in the stealing scenario significantly more negative comments were made for these characters. Interestingly, children also made significantly more negative comments about the characters with healthy weight in the pro-social scenarios.

A valence framework was also created for imaginary versus observation comments. Significantly less children made observation comments when selecting characters with obesity in the pro-social scenarios. However, in the stealing scenario, significantly more children used imaginary reasons when choosing the characters with obesity. This suggests that children were more likely to invent a reason (e.g. making up a characteristic) when showing bias against the characters with obesity.

This suggests that whilst children in this study showed bias against obesity in character selection responses, rejection of the characters with obesity was far less

clear in children's reasoning for their responses. In order to understand this discrepancy further, the findings of this study are discussed within the context of the previous literature.

## **Results in Context of the Literature**

### **Pro-Social Behaviour**

The current study found an overall difference in the way children responded to the characters with healthy weight and with obesity across the different pro-social scenarios however, when the responses in these scenarios were analysed separately, some interesting differences emerged.

In contrast to the previous literature exploring young children's pro-social behavioural intentions towards peers with obesity (Patel & Holub, 2012), the current study found that only girls rejected the character with obesity in the helping scenario. This is interesting as the current study replicated the scenario used by Patel and Holub (2012) in their study (i.e. helping to pick up crayons that were dropped on the floor). However, Patel and Holub (2012) did not report children's responses based on gender, so it is not known if the same differences between the girls and boys were found in their study. In the current study, although girls character selection suggested rejection of the character with obesity, this was not demonstrated as clearly in their reasoning. In fact, none of the girls commented on the body shape of the characters in the helping scenario.

Boys in this study showed a significant preference for sharing with the characters with healthy weight, compared to helping and comforting. This suggests that when it comes to sharing, boys are biased against peers with obesity. However,

it is difficult to interpret this finding in light of the current literature as previous research has not specifically explored pro-social behaviour in this way. Patel and Holub (2012) focused on helping behaviour in their study of young children's responses to figures with healthy weight and with obesity. Other studies have explored sharing behaviours in young children generally (Yarrow et al., 1976) and considered factors such as the deservedness of the recipient (Malti et al., 2016) however, previous studies have not considered sharing within the context of peers with obesity

Despite clear evidence demonstrating bias against the character with obesity in boys' character selections, boys' reasoning for their choices did not reflect this. Only one boy commented on the body shape of the character in their reasoning and a further three comments were given negative valence. This suggests that the majority of the reasoning used by the boys did not reflect the bias against the character with obesity that was evident in their character selections.

Therefore, it is difficult to conclude from the girls' and boys' responses in the helping and sharing scenarios that these children rejected the characters with obesity. The discrepancy between the character selection and reasoning in the helping and sharing scenarios could be explained by unconscious bias. Patel and Holub (2012) also found that children rarely commented on the body shape of character in their reasons for character selection and suggested that young children may have an unconscious bias against obesity and therefore their reasoning for character selection is unlikely to allude to the body shape of the characters. The use of unconscious bias is discussed further down.

However, the significant difference that was observed in the girls' character selection responses to helping and comforting the character with obesity is

consistent with some previous research showing that girls have greater bias against obesity. Latner and Stunkard's (2003) found that girls showed greater bias against obesity compared to boys, when asked to rank figures with healthy weight, obesity and physical impairment. Similar findings were also found by Durante et al. (2014), although many of the children in these previous studies were older than those who participated in the current study.

The difference observed in the girls' character selection in the comforting scenario could be understood within the 'proximity effect,' for individuals with obesity. The 'proximity effect,' describes how non-stigmatised individuals who are seen in the same vicinity with a stigmatised group are themselves judged more negatively (Hebl & Mannix, 2003). This effect has been demonstrated in adults, who rated a male with healthy weight more negatively when he was viewed sitting next to an individual with obesity (Hebl & Mannix, 2003). The same effect has also been demonstrated in children. Penny and Haddock (2007) found that girls aged 5-10 years old liked characters portrayed with healthy weight significantly less when they were presented in a picture alongside characters with obesity. It could be that girls showed greater bias against the character with obesity in the comforting scenario as this involved the characters with obesity physically touching the character with healthy weight (hugging), which may have been seen to increase the chances of stigma by association.

It is also argued that children view obesity in a similar way to illness and that children understand the contagious nature of illnesses (Klaczynski, 2008). Klaczynski (2008) found that children aged between 7-10 years old rated soft drinks that had been created by children with healthy weight and with obesity differently. Drinks that were created by children with obesity were rated as tasting less good and

exposure to these drinks was rated as being more likely to lead to illness. In the current study, it could be that the comforting scenario evoked beliefs regarding obesity as an illness because it involved physical touch, which increased girls bias against the characters with obesity. Interestingly, Lieberman, Tybur and Latner (2012) found that women also display more ‘pathogen disgust,’ towards obesity compared to men. Pathogen disgust describes revulsion in response to illness, which is thought to serve an evolutionary purpose to give protection from contamination (Lieberman et al., 2012). This suggests that females in particular may be more vulnerable to this type of bias against obesity.

However, it is not clear from the results described here whether the girls in this study were displaying beliefs regarding the proximity effect or contagion of obesity. Despite clear evidence of bias against the character with obesity in girls’ character selection, girls’ reasoning in the comforting scenario did not suggest this. None of the girls commented on the body shape of the character in the comforting scenario and only one comment that was coded as having negative valence was made when the character with healthy weight was chosen to receive a hug first. This suggests that although girls show a clear bias in their character selection, it is not clear from the reasoning used whether this bias is due to the body shape of the characters or other factors.

### **Friendship with Obese Peers**

Consistent with previous research involving children of various different ages, Reception and Year 1 children in this study showed rejection of the characters with obesity as playmates (Cramer & Steinwert, 1998; Patel & Holub 2012). However, when responses were analysed separately by gender, only the girls



rejected the character with obesity. The finding that girls showed more bias against the characters with obesity than boys is consistent with studies involving older children (Durante et al., 2014; Latner & Stunkard, 2003). A study involving pre-school aged girls (3-5 years old) also found that figures with obesity were rejected as playmate however, figures with average body shapes were also rejected more than those with thin body shapes, suggesting that young girls prefer thin over average size body shapes (Harriger et al., 2010). The authors suggest that this reflects how thin body shapes are idealised, even in very young children. In another study involving 3-5 year old girls, Harriger (2015) found some age-related differences in children's character selection and attributions given to thin, average and obese figures. Three year old girls gave more negative attributes to the average figure, compared to 5 year olds, suggesting that younger children had more pro-thin bias. However, 3 year olds were more likely to choose the figure with obesity as a playmate compared to 5 year olds. Taken together, the author suggests that these results show that younger children may have developed bias towards thinness, before developing bias against obesity, as evidenced in the discrepancy between younger children's attributions and friendship selection.

Previous studies regarding friendship selection highlight the difficulty of inferring children's reasoning from forced-choice tasks and the value of including conversations with children in this research field. In the current study children's reasoning for their playmate choices did not show the same levels of stigma against the characters with obesity. Although more comments were made about the physical appearance of the characters compared to the other pro-social and stealing scenarios, very few of these referred to the body shape of the characters. Many of the comments made about the characters referred to another aspect of their appearance, for example an item of clothing they were wearing or their hair, e.g. "*because Holly*

*is wearing a pink dress,” and “because she’s got nearly the same colour as my hair.”* This suggests that in this study, children were more attuned to other physical differences between the characters, such as their clothing than to their body shape.

These findings are similar to other studies involving discussions with children about body shape. Charsley et al. (2018) found that children did not comment on the body shape of the characters any more than other physical differences, for example gender. In this study discussions took place with children using illustrations of characters with obesity, with healthy weight and with a physical impairment (wheelchair). Children were asked to talk about physical differences between the characters, who they would like to be friends and who they were most similar to. Charsley et al. (2018) suggest that in light of other physical differences (such as a physical impairment and gender), bias against obesity is not evident. This suggests that it is important to put young children’s views at the forefront of research in order to better understand how they perceive physical differences (Charsley et al., 2018).

The findings of this study suggest that the methods used by researchers to explore stigma against obesity have an important bearing on the level of stigma displayed. This is similar to other studies that have found that children’s rejection of characters with obesity is moderated by whether or not children have to make a forced-choice or give ratings (Harrison et al., 2016).

### **Explicit & Implicit Bias**

The findings of this study suggest that although children showed bias against the characters with obesity in their character selections, little evidence of this bias was found in children’s reasoning. This suggests that children may have had an

unconscious bias against the character with obesity and therefore struggled to articulate this in their reasoning.

Studies suggest that levels of explicit bias towards people with obesity tend to decrease as children grow older, but implicit bias towards obesity remains stable (Solbes & Enesco, 2010). This is likely due to a number of factors, for example Solbes and Enesco (2010) suggest that as children grow older they are motivated to seek positive social interactions with others and also have more developed reasoning skills. Similarly, Durante, et al. (2014) found that explicit bias against obesity amongst 6-11 year olds declined as children grew older. In this study children were asked to rate thin, average and obese figures as either 'warm' or 'competent.' Older children were found to give ratings of 'competent' and 'warm' to the average weight figure but more ratings of 'warm,' to the figure with obesity and 'competent' to the thin figure. Durante, Fasolo, Mari and Mazzola (2014) suggest that older children become more aware of social desirability, which motivates them to appear less biased. In the current study, the explicit comments made about the body shape of the characters were found evenly across both Reception and Year 1 children, suggesting that the age difference was perhaps not great enough to detect the differences in explicit bias described in previous studies (Durante et al., 2014; Solbes & Enesco, 2010).

There was some evidence of explicit bias against the characters with obesity, which was mainly found in the stealing scenario. Significantly more children chose the characters with obesity to be stolen from and also made significantly more negative comments about these characters in this scenario, although only a very small proportion of the negative comments referred to body shape. This is consistent with the literature suggesting that young children attribute more negative

characteristics to obese figures (Musher-Eizenman et al., 2004; Patel & Holub, 2012; Su & Aurelia, 2011). The findings in the current study may reflect an aspect of the stealing scenario itself, which made it more acceptable to express explicit bias against the characters with obesity. It is also interesting to consider that in the current study children were able to give their responses in relation their character selection, rather than choosing from a given set of positive and negative attributes, as has been done in previous studies (Cramer & Steinwert, 1998; Patel & Holub, 2012; Harriger, 2015). However, despite having autonomy over their responses, children in the current study still referred to some of the negative stereotypes of obesity that are found when children are forced to choose between particular attributes.

However, overall there was little evidence of explicit bias against the characters with obesity. Very few children commented on the body shape of the characters and a minority of comments were given negative valance (23%). The findings described here are consistent with the findings of Patel and Holub's (2012) study, who also found that very few children commented on body shape and majority gave "don't know," responses. Patel and Holub (2012) suggest that children in this age range have difficulty giving reasons for their character selections because bias in young children is largely unconscious. In the current study it was also recognised that many children used their imagination to create a reason for their character selection (57% of the overall comments made), which also suggests that children may have had difficulty understanding their character selections. Interestingly, a significantly greater proportion of imagined comments were made when children chose the characters with obesity in the stealing scenario. This is consistent with the idea that children's character selection may have been driven by

implicit bias against obesity, which meant that children needed to invent a reason for this.

It is also important to consider the developmental level of the children who took part in the current study. Research suggests that young children have difficulty differentiating between stereotype knowledge and personal beliefs. Augoustino and Rosewarne (2001) found that younger children (aged 5-6 years old) were not able to differentiate between knowledge of racial stereotypes and their own views about race, whereas older children (8-9 years old) were able to describe common race stereotypes and also what their own views on race were. Interestingly, older children were found to endorse more positive statements as personal beliefs when describing minority ethnic groups. Black-Gutman and Hickson (1996) also found that cognitive development was related to levels of racial prejudice shown by 5-9 years old children, as children are more able to use more sophisticated reasoning when making judgements about others, i.e. internal as well as external characteristics. However, older children in this study did not display lower levels of racial prejudice as would be expected from a cognitive development perspective. Black-Gutman and Hickson (1996) argue that this demonstrates the role of social and environmental factors in the development of racial prejudice. In a study involving 3-5 year old children, Harriger (2015) found that 3 year olds were more likely to choose the obese figure as a friend compared to 4 and 5 years old children, but assigned more positive adjectives to the thin figure. The author suggests that the discrepancy between 3 years old's adjective assignment and friendship selection suggests that they have knowledge of obese stereotypes, but have not developed personal views about these. These findings are consistent with previous research that has indicated that young children are knowledgeable about obesity and the negative consequences that can arise from this (Baxter et al., 2016). It is worth considering that the

discrepancy between children's character selection and reasoning found in the current study, may also reflect that participants held knowledge of obese stereotypes, but had not yet formed personal opinions, as evidenced by the quantity of "don't know," responses and those where children invented a reason.

### **Gender Differences**

The pattern of gender differences that were found in this study, with respect to the sharing, comforting and playmate scenarios, are of interest. As already discussed, girls were found to have more bias against the characters with obesity in the comforting and playmate scenarios, whilst boys displayed more bias in the sharing scenario. Although some previous studies involving older children have highlighted greater bias against obesity in girls (Latner & Stunkard, 2003), the pattern of gender differences found in this study do not appear to have been reported elsewhere.

It is difficult to attribute the pattern of gender differences found in this study to more general gender differences found in children's pro-social behaviour as research exploring gender differences and pro-social behaviour is inconclusive. Some studies have highlighted gender differences in older children (van der Graaff et al., 2018) and younger children (Baillargeon et al., 2011) however, others have not (Yarrow et al., 1976). Interestingly, Baker, Tisak and Tisak (2016) found that there were no gender differences in young children's perceptions of pro-social behaviour; both boys and girls equally shared expectations that they should help, share and be kind to others.

Interestingly, research has also highlighted that young children perceive pro-social behaviour differently dependent on the context and that girls are expected to be more helpful at school (Tisak, et al., 2007). This suggests that the pattern of

gender differences found in this study may have been affected by the context of being at school. Further research is necessary to validate the gender differences found in this study and explore possible processes for this.

### **Individual Differences in Stigma**

The current study also highlights the importance of taking into account individual differences when considering obesity stigma. Much of the previous research has largely reported on the responses of groups of children (Cramer & Steinwert, 1998; Patel & Holub, 2012), which overlooks the individual differences in children's attitudes towards obesity. However, the design of the current study allowed individual character selections and reasoning to be explored in more detail.

It was noted that there were two children who were consistently negative about the characters with obesity. Little is known about these children other than their gender and school year. Previous research with older groups of children has indicated that individuals from higher social classes are more likely to hold stigmatising beliefs towards people with obesity (Davison & Birch, 2004). However, given that the sample in the current study is much younger it is not known if social class affected children's responses in the same way. Other factors such as parental bias against obesity have also been found to have an important influence on the attitudes developed by children (Lydecker et al., 2017; Thomas et al., 2014) and messages about obesity in the media area also a significant factor (Howard et al., 2017). Recognising that some children do have particularly negative attitudes towards obesity is helpful when considering interventions to reduce stigma, although further research is needed to understand how these peers potentially influence the views of their wider peer group.

It is also useful to consider the children who chose the characters with obesity in the pro-social scenarios, particularly those who chose these characters as playmates. There were five children (all male) who gave positive reasons for choosing either Alfie or Alfina as a playmate; one child commented, “*because I like Alfina.*” Previous research has indicated that children who perceive their body size as bigger tend to have more favourable attitudes towards peers with obesity (Holub, 2008). In the current study children’s perceived body size was not recorded. Actual body size was recorded using a scale of ascending body sizes (Collins, 1991). There were five children who were given a body shape rating above 4 (average body size). All of these children chose a character with healthy weight as a playmate (one gave a “don’t know,” response) and none of the reasons given by these children suggested that the characters with obesity were favoured. It is not clear whether the children who favoured the character with obesity were displaying less bias against obesity or whether these children favoured other aspects of the character’s appearance, as was demonstrated by Charsley et al. (2018).

### **Limitations & Strengths**

Although the findings of this study add to the current understanding of young children’s stigma towards peers with obesity, there are a number of limitations that should be taken into account.

It was noted that some of the children referred to actual classmates with the same names as the characters in the story, which reduces the validity of their responses as it is not clear if children’s character selection and reasoning referred to the character in the story or a person in real-life. Future studies should consider changing the names of the characters, possibly using fabricated names such as



'Alfina,' to avoid invalidating children's responses. It was also not clear whether children were basing their character selection choices on the body shape of the characters or other factors such as their hair colour or clothing. Children's reasoning indicated that they observed a number of physical differences between the characters, aside from body shape. Using illustrations where all the characters look the same apart from their body shape would help in understanding whether children are basing their decisions on body shape.

The sample size in this study, particularly regarding the small number of girls (n=25) who participated may have impacted on the power of the z-score analysis and therefore prevented some of these analyses from reaching statistical significance. This may have affected the reliability of the results from the girls' data and also some of the differences highlighted between the boys' and girls' character selection responses. Future studies with larger samples of children, and particularly girls, would help to increase the reliability of the results highlighted in this study.

The difference in the number of girls who participated compared to the number of boys (n=47) was considered. It was wondered whether parents may feel more protective over girls than boys, particularly because this study involved body shape and appearance. Previous research has indicated gender differences in the way that mothers perceive the body weight of their children, for example, Maynard, Galuska, Blanck and Serdula (2003) found that mothers tended to over-rate the body size of daughters compared to sons. This suggests that parents may be more aware of the body weight and appearance of daughters and may feel greater protection regarding issues of body size and appearance.

Of course it is difficult to know from these findings how children's attitudes translate in real-life pro-social situations in which children might help, share or

comfort a peer with obesity. A study involving 8-16 year old children found that there were no differences in the number of friendships held by children with healthy weight and those with obesity (Zeller et al., 2008), suggesting that children's negativity in experimental tasks does not translate directly to real-world situations, for older children at least. Pro-social scenarios also involve a number of other psychological processes, for example the bystander effect (Darley & Latane, 1968). This describes how when in a group, individuals feel less responsible to go to the aid of a person in need due to the responsibility being shared amongst the group. This effect has been demonstrated in numerous studies, including with children aged 5 years old (Plötner, Over, Carpenter, & Tomasello, 2015). Such psychological processes may affect children's responses to peers with obesity in real-life pro-social scenarios.

However, there are also several strengths of the current study. The use of different pro-social scenarios expanded on the previous research by Patel and Holub (2012) and allowed greater insight into a range of pro-social behaviours. Also, the combination of data gathered regarding character selection alongside children's reasoning allowed for better understanding of children's obesity stigma in the context of pro-social behaviour. Previous research has indicated that having discussions with young children can give different insight into how children view physical differences (Charsley et al., 2018). Similarly, the use of a within-group design allowed for individual responses to be analysed in more detail, a feature that is novel to the current study.

The use of a story book created with good quality illustrations is also a strength of this study. Previous research has indicated that pre-school children show more bias towards line drawn figures, compared to photographs (Meers et al., 2011).

This suggests that it is important to include realistic visual materials when conducting research in this area with children. The illustrations used here are more realistic than simple line drawings and are also familiar to young children as they are similar to those used in other story books. These illustrations have been also used successfully in previous studies exploring this area of research (Charsley et al., 2018; Harrison et al., 2016).

A modified forced-choice methodology was also developed for this study. Forced-choice tasks have been shown to inflate young children's stigma against obesity (Harrison et al., 2016). In this study children were asked to decide who a character (Holly or Thomas) would give priority to in the pro-social scenario (i.e. who will they help/share/comfort first). This created a situation whereby children were asked about the character's behavioural intentions, rather than their own personal intentions. It is known that the use of such vignettes are useful in reducing social desirability when discussing sensitive subjects, whilst giving insight into personal views and attitudes (Barter & Renold, 2000). This style of questioning also implied that both the character with healthy weight and the character with obesity would be helped, shared with or comforted by the other character, which it was hoped would also reduce the need to give a socially desirable responses. Therefore, whilst children in the current study were still required to choose between characters with healthy weight and obesity, it was hoped that by asking children indirectly as well as introducing the element of giving priority to one character over another, that this would detect any stigma against the character with obesity whilst also controlling for the effects of social desirability.

### **Practical Implications**

The current study suggests that whilst children in Reception and Year 1 may discriminate against peers with obesity in pro-social scenarios that involve forced choice, this bias likely operates at an unconscious level. Children's reasons for being biased against the character with obesity very rarely included comments about the body shape of the characters. This is consistent with previous studies that have shown that for young children, obesity is not necessarily given precedence when viewed within a range of physical differences, such as gender (Charsley et al., 2018). This suggests that children's intentions to act pro-socially towards peers may not necessarily be impacted by obesity to the extent that has been suggested in previous studies (Patel & Holub, 2012), which draws into question whether interventions to reduce stigma against obesity are necessary within this age group.

Although the majority of children in this study did not comment on the body shape of the characters, two children were particularly negative about the characters with obesity. Whilst this is a minority of the sample who took part in the study (n=72), it is a concern to think about how the attitudes of these children may influence others in their peer group. It may be helpful for teachers to be aware of the individual differences in stigma against obesity, so that they can prevent these views from influencing other children in the peer group. For example, studies have shown that the classroom can be an influential environment for promoting pro-social behaviour and peer acceptance (Layous et al., 2012). Teachers already promote pro-social behaviour in the classroom from an early age however, it may be helpful to highlight to teachers the importance of including attitudes towards obesity within this in order to increase the acceptance of peers with obesity as well as preventing the negative views of the minority from influencing the wider peer group.

Although the findings of this study suggest that interventions with Reception and Year 1 children to reduce stigma against obesity may not be necessary, this does not mean that this issue should be ignored completely. The responses of children who took part in this study suggested that at this age, implicit bias against obesity may already be established and research suggests that implicit bias against obesity remains robust as children grow older (Durante et al., 2014; Solbes & Enesco, 2010). In order to address implicit attitudes it is important to challenge the sources of negative stereotypes about obesity, such as those that have been highlighted in children's films (Howard et al., 2017), as well as addressing influences from parents (Lydecker et al., 2018). This study suggests that more awareness of the messages, both explicit and implicit, that are given to young children about body shape and weight is important. Interventions such as story books promoting positive body image have been found to be successful in changing of some of the negative stereotypes associated with obesity children aged 5-9 years old (Dohnt & Tiggermann, 2008). Girls who read the positive body image story book were found to rate healthy weight and obese figures more equally in terms of the number of friends they might have, compared to girls who did not read the positive body image story. This suggests that there is scope for changing negative stereotypes against obesity in childhood.

### **Recommendations for Future Research**

Further research to explore how the attitudes towards peers with obesity in pro-social scenarios demonstrated here translate in the real-world would be beneficial. Observational research has indicated that children with obesity socialise in different ways to children with healthy weight, which impacts on their ability to form relationships (Green, 2015). It may also be the case that children with obesity

socialise differently in pro-social situations, which affects how other children respond to them. Social processes such as the bystander effect may also impact on children's pro-social responses towards peers with obesity in the real-world (Caplan & Hay, 1989; Plötner et al, 2015). Future research could involve naturalistic observations of children in their classrooms and other social contexts to explore pro-social behaviours towards peers with obesity.

Exploring the developmental trajectory of pro-social behaviour towards peers with obesity would also be helpful, perhaps replicating the study here with older age groups of children. Studies have indicated that explicit bias against obesity declines as children grow older (Solbes & Enesco, 2010); it would be interesting to see if this also effects children's provision of pro-social behaviours. Future research could compare children of different ages in tasks that involve acting pro-socially as well as comparing their levels of explicit bias against figures with obesity, to see if their performance of these tasks is correlated.

Repeating this study with larger, more diverse groups of children in different areas of the UK would also be helpful. Social class and ethnicity have both been found to impact on attitudes towards obesity in older children (Davison & Birch, 2004) and adults (Hebl & Heatherton, 1998; Latner, Stunkard, & Wilson, 2005) and it could be that research with more diverse groups of children exposes a different pattern of results. It is also acknowledged that very few children who took part in this study were obese themselves, although previous research has indicated that body size perception is more salient in children's attitudes towards obesity, rather than actual body size (Holub, 2008). Future research could also include children's perceived body size, alongside measures of pro-social attitudes towards peers with obesity.

Aspects of children's cognitive development, such as Theory of Mind were not taken into account in the current study and previous research has indicated that these processes also influence children's ability to act pro-socially. For example, previous research has shown that children who perform better on ToFM tasks tend to behave more pro-socially towards others (Caputi et al., 2012) and recent research has indicated that ToFM ability is related to positive attitudes towards obese characters in a story (Lapan & Boseveski, 2016). Future research could replicate parts of the current study and also include tasks measuring ToFM to see if children's attitudes towards figures with obesity in pro-social scenario are correlated to their ToFM ability.

### **Conclusions**

The aim of this study was to further explore young children's pro-social behavioural intentions towards peers with obesity. This was done by analysing children's forced-choice character selections across a range of different pro-social scenarios and their reasoning for these. Consistent with previous research, the results suggest that in forced-choice scenarios children show bias against the character with obesity (Patel & Holub, 2012). However, girls showed more bias in their character selection than boys in the helping, comforting and playmate scenarios, whilst boys showed more bias in the sharing scenario. This study partially supports the findings of Patel and Holub (2012) with regards to helping a peer with obesity, as only girls were found to demonstrate bias against the character with obesity in this scenario.

Connecting children's reasoning to their character selections revealed that children generally had difficulty providing a reason for their character selection and that when a reason was given, the body shape of the characters featured very little.

This is consistent with Patel and Holub's (2012) study with children of a similar age. These findings could reflect that for children of this age, bias against obesity operates largely outside of conscious awareness. However, it could also be argued that children's character selection responses were influenced by the forced-choice methodology that was used in this study and that the reasoning that was used for these choices reflects how children actually view obesity alongside a range of other physical differences (Charsley et al., 2018).

This study has highlighted that young children's attitudes towards peers with obesity are perhaps not as negative as those portrayed in earlier research (Cramer & Steinwert, 1998; Patel & Holub, 2012; Su & Aurelia, 2011) and the value of including young children in discussions about stigma. In terms of the practical recommendations that can be made from this research, the current study suggests that young children may have already developed implicit negative attitudes about obesity. It is important to address the messages that young children receive about body shape from the media and at home in order to prevent negative stereotypes from forming. Research has indicated that interventions to promote positive body image can be helpful in changing attitudes towards obesity (Dohnt & Tiggermann, 2008).

Future research needs to address children's behavioural intentions towards peers with obesity in natural settings, for example observing children's pro-social behaviour within the classroom. Studies with older children would also be beneficial to establish how the findings here fit within a developmental trajectory of children's pro-social behavioural intentions towards peers with obesity. This study has also highlighted the advantages of using qualitative methodology with young children, a message also echoed in previous research from this field (Charsley et al., 2018).



Given the clear discrepancies between children's character selections and reasoning, the current study emphasises the need to have conversations with young children in order to understand how they perceive physical differences such as obesity.

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## Appendix A. Ethical Approval



**UNIVERSITY OF LEEDS**

**Faculty of Medicine and Health Research Office  
School of Medicine Research Ethics Committee (SoMREC)**

Room 9.29, level 9  
Worsley Building  
Clarendon Way  
Leeds, LS2 9NL  
United Kingdom

☎ +44 (0) 113 343 1642

05 May 2017

Miss Gemma Dearing  
Psychologist in Clinical Training  
Leeds Institute of Health Science  
School of Medicine and Health  
Clinical Psychology  
Level 10, Worsley Building  
University of Leeds  
Clarendon Way  
LEEDS LS2 9NL

Dear Gemma

Ref no: **MREC16-119**

Title: **Young Children's Pro-Social Behaviour Towards Obese Peers: Helping, Sharing & Comforting**

Your research application has been reviewed by the School of Medicine Ethics Committee (SoMREC) DClin Psych Sub-REC and we can confirm that ethics approval is granted based on the following documentation received from you and subject to the following condition *which must be confirmed as fulfilled prior to the study commencing*:

- Evidence of managerial permission from the each school / site must be submitted

Document	Version	Date Submitted
thesis ethics app v2	2.0	10/04/2017
Information Sheet Ethics V2	2.0	10/04/2017
thesis story	1.0	10/04/2017
Field Work Assessment	1.0	06/03/2017
thesis consent form v2	2.0	10/04/2017
Research Protocol 3	3.0	06/03/2017
headteacher letter	1.0	06/03/2017
Protocol for gaining assent	1.0	06/03/2017

Please notify the committee if you intend to make any amendments to the original research ethics application or documentation. All changes must receive ethics approval prior to implementation. Please contact the Faculty Research Ethics Administrator for further information ([fmhuniethics@leeds.ac.uk](mailto:fmhuniethics@leeds.ac.uk))

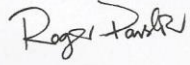
Ethics approval does not infer you have the right of access to any member of staff or student or documents and the premises of the University of Leeds. Nor does it imply any right of access to the premises of any other organisation, including clinical areas. The committee takes no responsibility for you gaining access to staff, students and/or premises prior to, during or following your research activities.

**Please note:** You are expected to keep a record of all your approved documentation, and all other documents relating to the study, including any risk assessments. These should be kept in your study file, which should be readily available for audit inspection purposes. You will be given a two week notice period if your project is to be audited.

It is our policy to remind everyone that it is your responsibility to comply with Health and Safety, Data Protection and any other legal and/or professional guidelines there may be.

We wish you every success with the project.

Yours sincerely



**Dr Roger Parslow**  
Co-Chair, SoMREC, University of Leeds

*(Approval granted by Co-Chair Dr Roger Parslow on behalf of the committee).*

## **Appendix B. Assent Protocol**

### **Protocol for gaining assent from children**

Hello, my name is Gemma. I have a story for us to read this morning/afternoon. Is that ok?

In my story, there are some questions for you to answer. There are no right or wrong to these questions, I'm just interested in what you think. You don't have to answer any of the questions if you do not want to. Is that ok?

I would like to record your answers so that I can listen back to these later. Is that ok?

## Appendix C. Letter to Headteachers



**UNIVERSITY OF LEEDS**

Doctor of Clinical Psychology Programme

Clinical Psychology Training Programme  
Institute of Health Sciences  
Level 10, Worsley Building  
Clarendon Way  
Leeds  
LS2 9NL  
Tel: 0113 343 2734

Dear Headteacher

My name is Gemma Dearing and I am graduate psychologist studying at the University of Leeds.

I am writing to you regarding a research project I am undertaking as part of a Doctorate of Clinical Psychology qualification. The project is exploring young children's understanding of different body shapes, specifically how young children feel about helping, sharing and comforting peers of different body shapes. I am hoping to recruit children aged 4-6 years old from primary schools in the local area and would be most grateful if your school would agree to take part.

The project involves children reading a story and answering some questions about the characters. I have enclosed an information sheet which will explain in more detail what children are required to do. From pilot trials with the story I have found that children have engaged well with task and enjoyed reading the story.

I would like to ring you within the next two weeks to talk about this further and hopefully arrange a time to meet with you. If you would like to contact myself or my supervisor Professor Andrew Hill our telephone contact details and email addresses are included in this letter.

Thank you for taking the time to read this letter,

Yours Sincerely

A handwritten signature in black ink, appearing to read "Gemma Dearing".

Gemma Dearing  
Psychologist in Clinical Training  
[umgd@leeds.ac.uk](mailto:umgd@leeds.ac.uk)

Professor Andrew Hill  
[A.J.Hill@leeds.ac.uk](mailto:A.J.Hill@leeds.ac.uk)

## Appendix D. Information Letter for Parents



**UNIVERSITY OF LEEDS**

Doctor of Clinical Psychology Programme

Dear Parent/Guardian

### **Who am I?**

My name is Gemma Dearing and I am currently studying for a doctoral degree in Clinical Psychology at the University of Leeds. As part of my degree I am conducting a research project looking at young children's attitudes towards peers who are different body shapes. I have spoken to your child's Head teacher, who has kindly agreed for the school to help me with this research and given me permission to contact you.

This project has been approved by the University of Leeds Ethics Committee, project reference: MREC16-119.

### **Why am I writing to you?**

For this study I will be asking children in Reception and Year 1 about what they would do in different scenarios that involve stealing from, helping, sharing or comforting peers who are different body shapes. I hope to include over 100 children from different schools in West Yorkshire. This letter is intended to give you some information about the research and ask for your permission for your child to take part.

### **What will I be asking your child to do?**

I will ask your child if they would be happy to read a story with me. I will tell them that I will be asking them some questions and would like to know what they think, but that there are no right or wrong answers. If they agree to take part I will ask them to read a story with me about 4 friends; Holly, Thomas, Alfie and Alfina. These characters are depicted as having different body shapes.



These characters will appear in a story that will include scenarios where one character will need to help, share, comfort or steal from another character. Your child will be asked who they think the character will help, share, comfort or steal from first. I will also ask them about their friendship preferences for the characters displayed above. The task should take around 10 minutes.

### **What else is involved?**

To help me write up the research all interviews will be audio-recorded. These recordings will be anonymised (i.e. your child's name will not appear on the recording). All recordings will be stored securely so that only myself and research supervisor will have access to them. I will also need to record your child's age and gender. All data from the study will kept anonymous (your child's responses will

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be identified using a number) and confidential. All audio-recordings will be deleted after I have transcribed them. Transcriptions will be anonymous and stored securely on the University's shared drive.

After the task has been completed I will be unable to withdraw your child's responses as the data will be recorded and stored anonymously.

**Where and when will the study take place?**

The study will take place during normal school hours. I will arrange a time and date when it is convenient for me to visit the school. All interviews will be carried out in a quiet area of the classroom with a member of school staff present.

**What if I agree but my child does not want to take part?**

Your child will only take part if they are happy to do so. I will make sure that they are comfortable talking to me and tell them that can stop at any time without giving me a reason. If they do change their mind and decide not to take part they will return to their usual classroom lesson.

**Are there any benefits for my child?**

The task is designed to be fun! By taking part your child will have an extra opportunity to practice their reading skills. Your child will also be given a sticker at the end of the task to thank them for taking part.

**I have some more questions, how can I contact you?**

I am happy to answer any further questions you may have. You can contact me or my supervisor (Prof. Andrew Hill) on the email address and telephone number below.

Thank you for taking the time to read this letter.

Yours Sincerely

Gemma Dearing  
Psychologist in Clinical Training

Clinical Psychology Training Programme, Institute of Health Sciences, Level 10, Worsley Building,  
University of Leeds, Clarendon Way, Leeds, LS2 9NL. 0113 343 2736 [umgd@leeds.ac.uk](mailto:umgd@leeds.ac.uk)

Prof. Andrew Hill, Institute of Health Sciences, Level 10, Worsley Building, University of Leeds,  
Clarendon Way, Leeds, LS2 9NL. 0113 343 2734 [A.J.Hill@leeds.ac.uk](mailto:A.J.Hill@leeds.ac.uk)



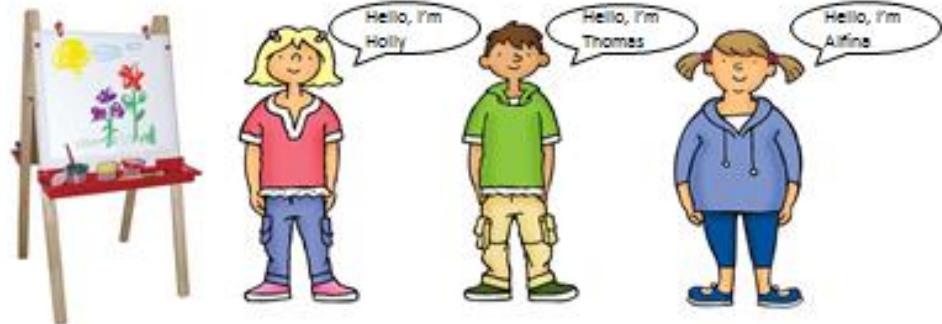
## Appendix E. Example Story Book

The following pages show the story that was given to female participants

Today at school the children are making pictures.



The teacher said that all the children's pictures can go on the classroom wall.



Holly, Thomas and Alfina love making pictures.

Holly, Thomas and Alfina are using crayons to draw their pictures.



"Oops!" Alfina and Holly drop the crayons on the floor.



*Thomas*



*Holly*

Or



*Alfina*

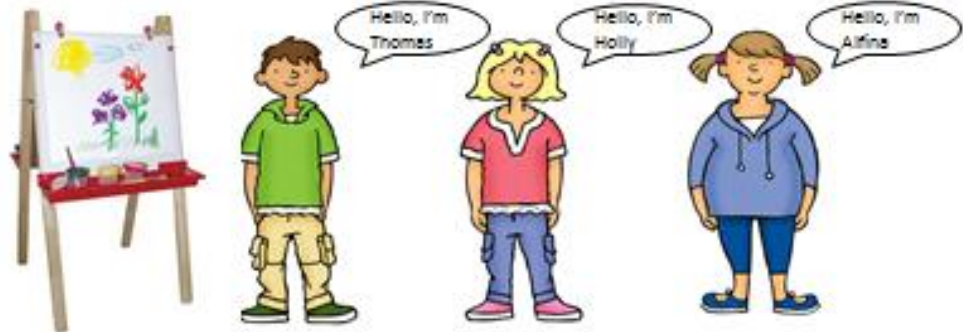
Who do you think Thomas will help to pick up the crayons first? Holly or Alfina?

Why do you think Thomas helped that girl?

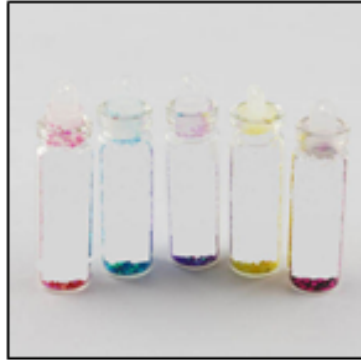




All the crayons have been picked up and put back in the tub.



Thomas, Holly and Alfina are using glitter on their pictures.



The teacher asks Thomas to share the glitter, but there's only a little bit left.



*Thomas*



*Holly*

Or



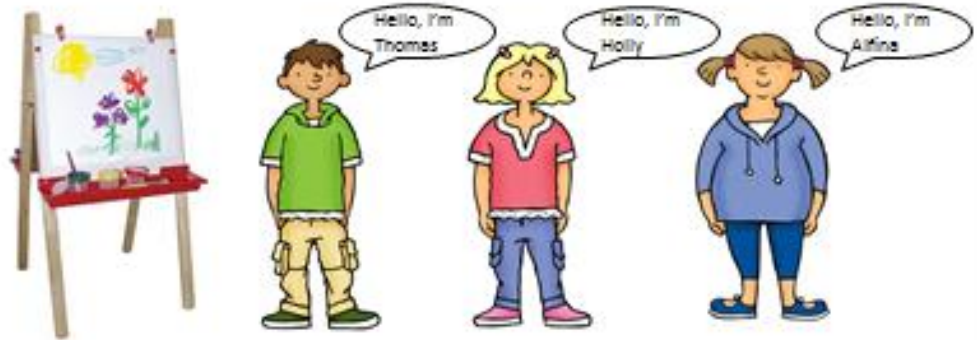
*Alfina*

Who do you think Thomas will share the glitter with first? Holly or Alfina?

Why do you think Thomas shared with that girl?



The teacher finds some more glitter for the children's pictures. Now there's enough for everyone.



Holly, Thomas and Alfina are using stickers on their pictures.



Next, Thomas, Holly and Alfina are using paints to make their pictures.

"OH NO!" says Holly and Alfina. Somebody has spilled paint all over the pictures.





"Now our pictures are ruined!" Holly and Alfina are upset and start to cry.

Thomas sees that Holly and Alfina are upset and decides to give them a hug to cheer them up.



Thomas



Holly

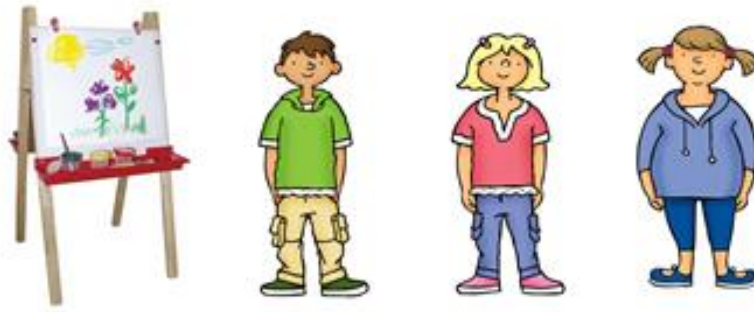
Or



Alfina

Who do you think Thomas will hug first, Holly or Alfina?

Why do you think Thomas will hug that girl?



Next, Thomas, Holly and Alfina are using stickers on their pictures.

Holly and Alfina have taken their stickers.



It's Thomas' turn to take a sticker, but there isn't any left!







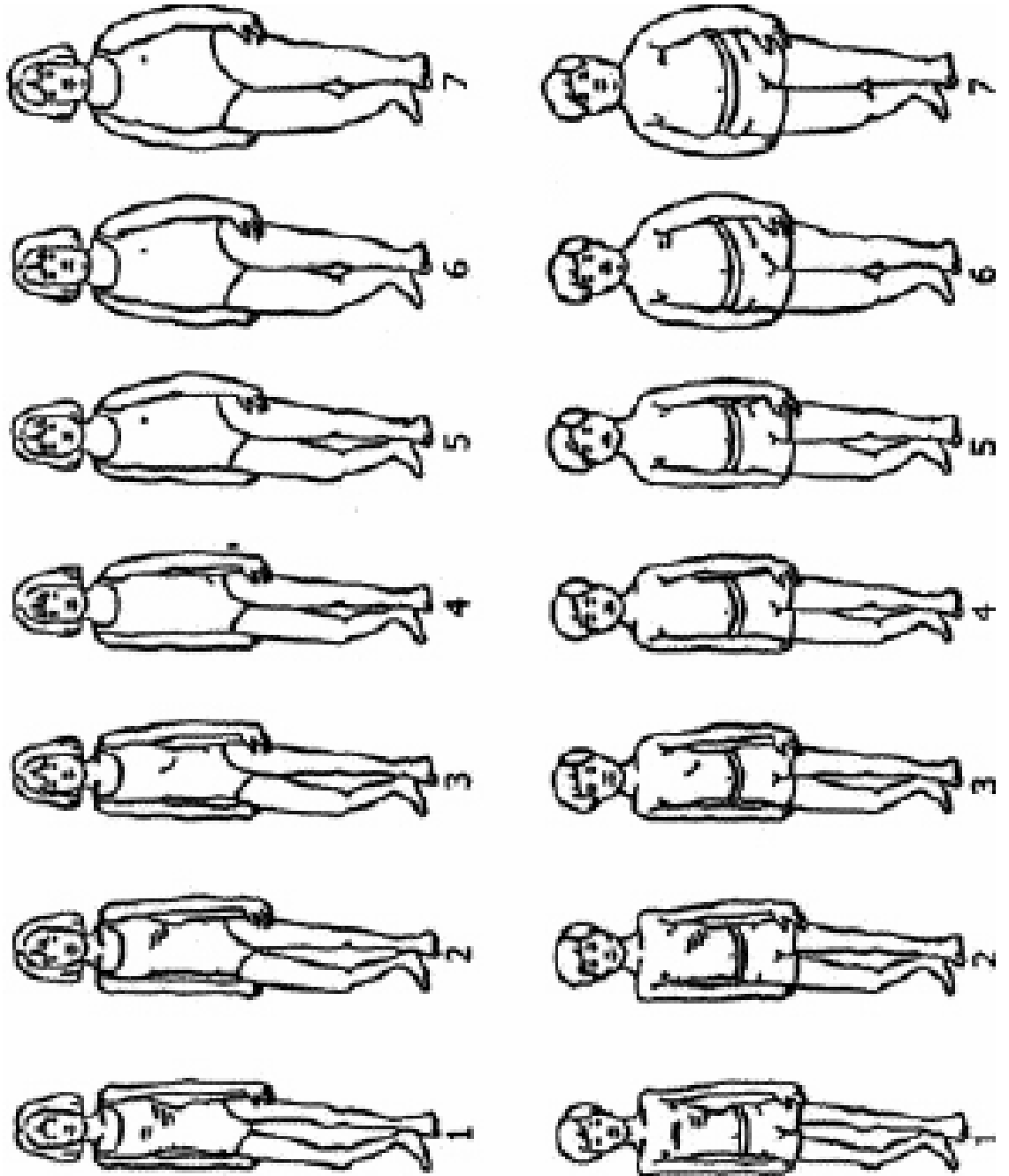


The teacher sees all the pictures the children have made.  
"Oh, what lovely pictures!" says the teacher and puts all the children's pictures on the wall.

**THE END**



**Appendix F. Body Shape Rating Scale (Collins, 1991)**



Appendix G. Friendship Selection



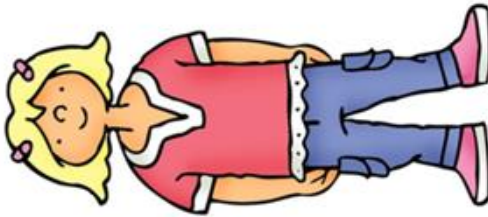
Thomas



Alfie



Alfina



Holly

Who would you like to play with?

## Appendix H. Z-Test Results

### Z-Test Results for Character Selection

*Significant results are highlighted bold*

Character	Helping %	z score	P
Holly	71	<b>2.05</b>	<b>0.03</b>
Alfina	29	<b>2.05</b>	<b>0.03</b>
Don't Know	4		
Total	25		
Thomas	60	1.37	0.17
Alfie	40	1.37	0.17
Don't Know	0		
Total	47		

Character	Sharing %	z score	P
Holly	56	0.60	0.54
Alfina	36	1.40	0.16
Don't Know	8		
Total	25		
Thomas	64	<b>1.92</b>	<b>0.05</b>
Alfie	36	<b>1.92</b>	<b>0.05</b>
Don't Know	0		
Total	47		

Character	Comforting %	z score	P
Holly	79	<b>2.84</b>	<b>0.005</b>
Alfina	21	<b>2.84</b>	<b>0.005</b>
Don't Know	4		
Total	25		
Thomas	55	0.68	0.49
Alfie	45	0.68	0.49
Don't Know	0		
Total	47		

Character	Stealing %	z score	P
Holly	20	<b>3.00</b>	<b>0.002</b>
Alfina	80	<b>3.00</b>	<b>0.002</b>
Don't Know	0		
Thomas	34	<b>2.19</b>	<b>0.02</b>
Alfie	66	<b>2.19</b>	<b>0.02</b>
Don't Know	0		
Total (n)	72		

Character	Playmate %	z score	P
Holly	61	<b>1.86</b>	<b>0.06</b>
Thomas			
Alfina	24	<b>4.41</b>	<b>0.001</b>
Alfie			
Don't Know	6		
Total (n)	72		

Character	Helping+Sharing+Comforting %	z score	p
Holly	70	<b>3.37</b>	<b>0.0008</b>
Alfina	30	<b>3.37</b>	<b>0.0008</b>
Thomas	60	<b>2.27</b>	<b>0.01</b>
Alfie	40	<b>2.27</b>	<b>0.01</b>

### Character Choice Consistency

	%	z score	p
Chose Holly or Thomas 3/3	<b>83</b>	<b>2.80</b>	<b>0.005</b>
Chose Holly or Thomas 2/3	<b>69</b>	<b>2.74</b>	<b>0.006</b>
Choose Alfie or Alfina 3/3	<b>17</b>	<b>2.80</b>	<b>0.005</b>
Choose Alfie or Alfina 2/3	<b>31</b>	<b>2.74</b>	<b>0.006</b>

### Positive/Negative Valence across Pro-Social and Stealing Scenarios

Positive	Pro-Social %	z score	p	Stealing %	z score	p
Thomas/Holly	<b>64</b>	<b>2.3</b>	<b>0.02</b>			
Alfie/Alfina	<b>35</b>	<b>2.30</b>	<b>0.02</b>	1		
Negative	Pro-Social %	z score	p	Stealing %	z score	p
Thomas/Holly	<b>76</b>	<b>3.03</b>	<b>0.002</b>	<b>15</b>	<b>3.13</b>	<b>0.001</b>

Alfie/Alfina	<b>24</b>	<b>3.03</b>	<b>0.002</b>	<b>85</b>	<b>3.13</b>	<b>0.001</b>
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**Imagined/Observation Valence across Pro-Social and Stealing Scenarios**

<b>Imagination</b>	<b>Pro-Social %</b>	<b>z score</b>	<b>p</b>	<b>Stealing %</b>	<b>z score</b>	<b>p</b>
Thomas/Holly	57	1.63	0.01	25	2.82	0.004
Alfie/Alfina	43	1.63	0.10	75	2.82	0.004
<b>Observation</b>	<b>Pro-Social %</b>	<b>z score</b>	<b>p</b>	<b>Stealing %</b>	<b>z score</b>	<b>p</b>
Thomas/Holly	76	4.41	0.001	42	0.55	0.57
Alfie/Alfina	24	4.41	0.001	58	0.55	0.57

## **Appendix I. Valence Framework**

### **Valence Framework-Positive vs Negative**

#### **Positive**

- Comments that give a compliment to the character, either by physical appearance or characteristic e.g. “
- Comments that describe friendship between characters or between the child and the character e.g. “Because Holly might be Alfie’s best friend.”
- Comments that suggest favouritism e.g. “Because I love Holly.”
- Comments that describe a friendship in real-life e.g. “Because Thomas is in my class.”

#### **Negative**

- Comments that describe the character as fat e.g. “Because Thomas isn’t fat and Alfie is fat and she’s fat too.”
- Comments that describe any of the character has having a negative quality e.g. “Maybe because Alfie might have hit Holly.”
- Comments that blame a character e.g. “Because Thomas made the mess.”
- Comments that suggest a character is distressed e.g. “Because Thomas might be the saddest.”
- Comments that are negative about Alfie/Alfina.

#### **Neutral**

- Comments that neither obviously positive or negative.
- Comments that refer to the proximity of the characters e.g. “Because Holly is next to Thomas.”
- Comments that reflect turn-taking e.g. “Because she’s already done it with Thomas.”
- Comments that describe the appearance of the character e.g. “Because Thomas has a green t-shirt.”
- Comments that describe the situation e.g. “Because they need to pick up the mess.”
- Miscellaneous comments that do not relate the characters e.g. “Because I’ve got a fish called Alfie.”
- Comments that mention the size of the characters, but with no reference to body shape e.g. “Because Alfie is smaller than Holly.”

## **Appendix J. Valence Framework 2**

### **Valence Framework-Observation vs Imaginary**

#### **Observation**

Comments were coded under this theme if they referred to an element of the character or story as it appeared in the story.

- Comments that refer to a characteristic of the characters as seen on the page e.g. “Because Alfie has a stripy t-shirt”
- Comments that refer to body shape/size of characters e.g. “Because Thomas isn’t fat and Alfie is fat and she’s (Alfina) fat too.”
- Comments that refer to the position of the characters as they appear on the page e.g. “Because she’s standing at the front.”
- Comments that refer to an aspect of the story e.g. “Because Alfina is crying.”

#### **Imaginary**

This category referred to comments that reflected children’s imagination i.e. an element of the story or characters that did not appear in the story.

- Comments that refer to an unseen characteristic e.g. “Because Holly is a nice girl.”
- Comments that refer to friendship between characters e.g. “Because Holly might be Alfie’s best friend.”
- Comments that refer to an action made by the character that was not set out in the story e.g. “Because Holly dropped all the crayons”
- Comments that refer to an intention of the character e.g. “Because he wants to share with Holly.”
- Comments that refer to friendship with the character (where unclear if this might be a friendship in real-life) e.g. “Because he’s (Thomas) my friend.”

#### **Avoidant**

This category was used to code comments where it was unclear whether children were using their imagination or where their reasoning was unclear.

- Comments where it is not clear what type of reasoning is being used e.g. “Because Holly is in the lead still.”
- Comments where children do not use any clear reasoning e.g. “Because I would.”

## Appendix K. Table of Theme and Quotations

Theme	Sub-Theme	Comment
Physical Appearance	Body Shape	<p>13. Male, Year 1: "Because Alfie won't get through the little gaps but Thomas doesn't have a big belly so he can fit through the gaps first"</p> <p>"Because Alfie has a big tummy and then she has small arms so she can't hug all the way around and Thomas has not a big belly so she can hug Thomas"</p> <p>"Because remember the same thing I said last time and Alfie will be covering his picture with all his body"</p> <p>"Because Alfie has a big belly. Because if we were playing, if we were running together, if we were playing football Alfie would cover up the football"</p> <p>15. Female, Year 1: "There's only one boy I want to play with, because Thomas is skinny and that one (Alfie) is fat"</p> <p>18. Female, Year 1: "Because she's quite skinny (Holly) and she's quite fat (Alfina). He's fat (Alfie) and he's skinny (Thomas)"</p> <p>21. Male, Year 1: "Because Thomas isn't fat and Alfie is fat and she's fat too (Alfina)"</p> <p>27. Male, Year 1: "People a bit bigger than me might have done it so I think Alfie because he's the biggest"</p> <p>29. Male, Year 1: "Because Alfie might not be able to bend down because he's too big"</p> <p>"Because that guy is fatter (Alfie)"</p>



		<p>47: Male, Reception:          "Because Alfie is too fat"          69: Male, Reception:          "Because Alfie's the fattest one and Thomas is not the fattest one. Fattest ones have to help second or they might roll on the floor"          "Because Alfie might roll on top of the table and trip over, that's why. Thomas doesn't have a fat tummy"          "Because Alfie might roll Holly over"          "Because Alfie's got a fat tummy"          n=15</p>
	<p>Size (not related to body shape)</p>	<p>10. Male, Year 1: "Because Holly and Thomas are nearly the same size."          "Because Thomas is bigger than Alfie."          27. Male, Year 1: "People a bit bigger than me might have done it so I think Alfie did it because he was the biggest"          45. Male, Reception:          "Because Alfie is smaller than Holly."          =4</p>
	<p>Similarities</p>	<p>9: Male, Year 1: "Because she's got almost the same colour shoes (Holly &amp; Thomas)"          "Because they almost have the same pockets (Holly &amp; Thomas)"          10: Male, Year 1: "Because he's a boy too"          11. Male, Year 1: "Because they have the same pockets (Holly &amp; Thomas)"          "Because they have the same pockets (Holly &amp; Thomas)"          22. Female, Year 1:          "Because I think Holly is my age...I think Alfie and Alfina are younger than me."          31. Female, Year 1:          "Because Holly has nearly</p>

		<p>the same colour as my hair”            47: Male, Reception:            “Because they have different kinds of shoes,”            (Holly + Thomas have same shoes)            66. Female, Reception:            “Because she (Holly) looks a bit like me.”            71. Female, Year 1:            “Because they have the same t-shirt”            “Because they have the same hair colour”            “Because they’ve got the same trousers”            “Because they look the same size (Thomas &amp; Holly)”            72: Female, Year 1:            “Because they look like brothers &amp; sisters”            n=14</p>
	<p>Compliment</p>	<p>8. Male, Year 1: “Because green is my favourite colour”            9. Male, Year 1: “Because Alfie has a stripy t-shirt”            “Because Thomas has a green t-shirt”            12. Female, Year 1:            “Because Holly has long hair”            16. Male, Year 1: “Because I like his (Alfie) t-shirt because it’s all stripes”            “Because I like his (Thomas) shoes”            19. Male, Year 1: “Because I like Thomas’ t-shirt and I like him.”            22. Female, Year 1:            “Because Holly is a bit prettier.”            23. Male, Year 1: “Because Thomas looks nice”            26. Female, Year 1:            “Because Holly looks nice.”            27. Male, Year 1: “Maybe because his (Thomas) t-shirt is one her (Holly) favourite colours.”            “Maybe because his stripes</p>

		<p>on his (Alfie) t-shirt are her favourite colour.”</p> <p>37. Female, Year 1: “Because Holly has my favourite colour on.”</p> <p>30. Male, Year 1: “Because Holly is wearing a pink dress”</p> <p>37: Female, Year 1: “Because Holly looks nice” “Because Holly has my favourite colour on”</p> <p>38. Female, Year 1: “Because Holly has pink shoes on.”</p> <p>47. Male, Reception: “Because I like Alfie’s jeans.”</p> <p>61. Female, Reception: “Because she’s got pink hair clips.”</p> <p>63. Female, Reception: “She’s (Holly) pretty” n=20</p>
<p><b>Unseen</b></p>	<p>Ability</p>	<p>22. Female, Year 1: “Because I think Holly is better at picking up.”</p> <p>46. Male, Reception: “Because Alfie can’t do it by himself”</p> <p>65. Male, Reception: “Because he (Thomas) might do it quicker”</p> <p>68. Male, Reception: “Because he (Alfie) can’t do it by himself” Total=4</p>

	Characteristic	<p>1. Male, Reception: "Maybe because Alfie might have hit Holly"</p> <p>7. Male, Year 1: "Because Thomas might have took all the greens and Alfie might have took all the blues"</p> <p>14. Male, Year 1: "Because Alfie has lots"</p> <p>20. Male, Year 1: "Because Alfie has all the stickers"</p> <p>21. Male, Year 1: "Because Alfie has been doing something naughty and Thomas is all on his own"</p> <p>"Because Alfie might have used all the stickers"</p> <p>22. Female, Year 1: "Because I think Alfina is a mess"</p> <p>25. Female, Year 1: "Because Holly is a nice girl"</p> <p>28. Female, Year 1: "Because Holly is lovely."</p> <p>"Because Thomas is naughty"</p> <p>31. Female, Year 1: "Because Alfina stole a sticker from Thomas"</p> <p>32. Male, Year 1: "Because Thomas is the bravest."</p> <p>34. Female, Year 1: "Because Holly is happier."</p> <p>35. Female, Year 1: "Because Holly is nice"</p> <p>"Because Holly has the most stickers"</p> <p>36. Female, Year 1: "Because that's mean and you tell a teacher (Alfina)"</p> <p>38. Female, Year 1: "Because Alfina took all the stickers."</p> <p>44: Male, Reception: "Because Alfie has lots of stickers"</p> <p>46: Male, Reception: "Because Alfie wants to steal one first,"</p> <p>51: Male, Reception: "Because Alfie was naughty,"</p>
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		<p>52. Male, Reception: "Because Thomas is a nice boy" "Because Alfie might be a bad guy."</p> <p>55. Male, Reception: "Because Alfie has too much,"</p> <p>56. Male, Reception: "Because Alfie has lots of stickers,"</p> <p>58. Female, Reception: "Because she's (Holly) very nice" "Because she's got too much,"</p> <p>59. Female, Reception: "Because he (Thomas) was doing nice things for the girls"</p> <p>60. Male, Reception: "Because he (Thomas) might like playing tig." "Because he's got the most" (Alfie)</p> <p>65. Male, Reception: "Because he (Alfie) might want to play more games with me." "Because he won't want as much (Thomas)" "Because he might have more (Alfie)" "Because he (Alfie) will want more"</p> <p>68. Male, Reception: "Because he's (Thomas) a nice boy"</p> <p>70. Male, Reception: "Because he had them all (Alfie)"</p> <p>71. Female, Year 1: "Because Holly is more kind than the rest"</p> <p>=36</p>
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	Blame	<p>7. Male, Year 1: "Because Thomas made the mess." 21. Male, Year 1: "Because Alfie dropped them" 25. Female, Year 1: "Because Holly dropped all the crayons" 31. Female, Year 1: "Because Alfina knocked them over." 32. Male, Year 1: "Because Thomas didn't start it" 33. Male, Year 1: "Because Thomas started the mess first" 35. Female, Year 1: "Because I think Holly spilled the crayons" 44. Male, Reception: "Because Thomas might pour them on the floor" 48. Male, Reception: "Because they spilled the crayons" 60. Male, Reception: "Because he (Thomas) actually pushed them (crayons)" "Because she (Alfina) wasted too much and she was thinking who to give it to" 61. Female, Reception: "Because she's (Holly) the first one that made it" "Because she's (Holly) the first one that spilled the paint" n=13</p>
	Motivation	<p>42. Female, Reception: "Because Thomas wants to help Holly" "Because he wants to (Holly)" 46. Male, Reception: "Because she wants to share with Thomas first" "Because Alfie wants to get hugged first" 70. Male, Reception: "Because he wants to" n=5</p>

<p><b>Social</b></p>	<p>Relationship Between Characters</p>	<p>1. Male, Reception:          "Because Holly might be Alfie's best friend"          "Maybe because Thomas might be Holly's best friend"          15. Female, Year 1:          "Because Thomas likes Alfina more"          "Because he's changes his mind and he doesn't like Alfina anymore"          20. Male, Year 1: "Because they're best friends"          "Because she's his (Alfie) best friend"          "Because they're best friends"          43. Male, Reception:          "Because they're friends"          "Because I think they're friends"          "Because I think Holly hates Thomas"          44. Male, Reception:          "Because Holly might be friends with Alfie"          50. Male, Reception:          "Because Holly likes Thomas"          "Because Holly and Alfie are best friends"          "Because Holly loves Thomas"          51. Male, Reception:          "Because she likes Alfie better than Thomas"          "Because she likes Thomas better than Alfie"          "Because Holly likes Alfie better than Thomas"          n=17</p>
	<p>Friendship in Real Life</p>	<p>1. Male, Reception:          "Because Holly might be my best friend"          6. Female, Reception:          "Because I love Holly"          7. Male, Year 1: "Because Thomas is in my class"          11. Male, Year 1: "I like Alfina"          16. Male, Year 1: "Because Alfie is my friend"</p>

		<p>“Because he’s my friend”  “Because Alfie is my friend”  20. Male, Year 1: “Because I love Holly”  27. Male, Year 1: “Because Alfie in my class is my best friend”  “I think Alfie because he’s my best friend and we always play power rangers”  42. Female, Reception: “Thomas is my favourite.”  50. Male, Reception: “Because Thomas is my best friend”  51. Male, Reception: “Because Alfie is my best friend”  57. Male, Reception: “Thomas is my favourite.”  64. Male, Reception: “Because he’s my friend”  67. Male, Reception: “Because he’s in my class”  69. Male, Reception: “Because Alfie is in my class”  70. Male, Reception: “Because I like him (Alfie)”  n=18</p>
<p><b>Context</b></p>	<p>Fairness</p>	<p>7. Male, Year 1: “Because she’s already done it with Thomas.”  11. Male, Year 1: “Because it’s been his go...To make it good”  17. Male, Year 1: “Order”  19. Male, Year 1: “Because he’s not had a turn so it’s his turn”  “Because if he’s had two go’s, it goes back to him”  “Because now it’s back to him again”  29. Male, Year 1: “It’s because I’m doing first, then him”  30. Male, Year 1: “Because ‘erm, he’s the second”  “Because Alfie was last”  34: Female, Year 1: “Because Holly has already</p>



		<p>had her turn”  “Because Alfina is next in queue”  37. Female, Year 1:  “Because Alfina has never had a turn”  “Because she had a turn and she had a turn”  “Alfina’s turn”  39. Male, Year 1: “Because Alfie is next”  “Because Thomas is the next one”  “Because Alfie is the next one”  59. Female, Reception:  “Because that one went first”  “Because that one went after Holly”  “Because that one already went”  61. Female, Reception:  “Because she tidied up second”  “Because she got the paint second”  66. Female, Reception:  “Because she’s not had a go”  “Because Holly was first”  “It’s her go again”  70. Male, Reception:  “Because Alfie did the other one.”  n=26</p>
	<p>Proximity</p>	<p>7. Male, Year 1: “Because Thomas is in front”  10. Male, Year 1: “Because Holly is next to Thomas”  “Because Holly is next to Thomas”  11. Male, Year 1: “Because she’s next to Thomas”  14: Male, Year 1: “Because Thomas is in front”  “Because Thomas is in front”  15. Female, Year 1:  “Because again he’s closer to her”  “Because Thomas is closer</p>

		<p>to Holly”          18. Female, Year 1:          “Because it looks like she’s in front”          “Because Holly is in the lead still”          24. Male, Year 1: “Because Thomas is in front of Alfie”          “Because Thomas is first”          30. Male, Year 1: “Because Thomas is in the first line”          “Because Thomas is there first”          34. Female, Year 1:          “Because Holly is first in line”          39. Male, Year 1: “Because Thomas is next to Holly”          59. Female, Reception:          “Because she’s standing at the front”          66. Female, Reception:          “Because she’s in the middle”          n=17</p>
	<p>Responding to Situation</p>	<p>7. Male, Year 1: “Because Thomas might have took all the greens and Alfie might have took all the blues”          25. Female, Year 1:          “Because Holly is upset”          “Because Holly wants to put it (glitter) on her picture”          26. Female, Year 1:          “Because there has to be some stickers left for other people to take a sticker”          27. Male, Year 1: “Because Thomas is upset.”          28: Female, Year 1:          “Because there’s not enough left”          “Because all the paint spilled”          29: Female, Year 1:          “Because Holly is upset.”          32: Male, Year 1: “Because Thomas stared to get the glitter out first”          33. Male, Year 1: “Because Thomas cried”          34. Female, Year 1:</p>

		<p>“Because Holly was the first to cry” 35: Year 1: “Because Holly is upset.” 42: Female, Reception: “Because Alfina is crying,” “Because Thomas has to help Holly.” 43. Male, Reception: “Because I think Thomas wants them all cleaned up for the teacher” 44: Male, Reception: “Because Thomas might be the saddest” 54. Female, Reception: “To make Holly feel better.” 57. Male, Reception: “Because they need to pick up the mess.” 58. Female: Reception: “Because there was a big mess.” “Because she might be super sad,” 64. Male, Reception: “Because there’s a mess” “To put the crayons away” “Because she’s got to share the glitter” “Because she’s going to take it away” 68. Male, Reception: “Because he’s crying (Thomas)” “Because he doesn’t have one (Thomas)” 70: Male, Reception: “Because he’s crying (Alfie)” n=27</p>
Miscellaneous		<p>3. Male, Reception: “Because I’ve got a fish called Alfie” 5: Male, Reception: “No one” 13: Male, Reception: “Because Alfie didn’t get a choice” “Because I would.” 21: Male, Year 1: “Because I do.” 26. Female, Year 1:</p>

		<p>“Because Holly is a better name.”</p> <p>28. Male, Year 1: “Because I do.”</p> <p>31: “Because Holly chooses the sparkles”</p> <p>38. Female, Reception: “Because Alfina likes colours,” “Because Holly likes colours too”</p> <p>39. Female, Year 1: “Because Holly has an ‘o’ in her name.”</p> <p>40. Female, Year 1: “Because boys can share with girls.”</p> <p>“Because some boys can love girls.”</p> <p>44. Male, Reception: “Because I like Thomas’ name.”</p> <p>47. Male, Reception: “Because her legs are blue”</p> <p>48. Male, Reception: “Because I do”</p> <p>51. Male, Reception: “Because Thomas is green.”</p> <p>52. Male, Reception: “Because I do.”</p> <p>58. Female, Reception: “Because it’s not fair...Because they couldn’t put all the glitter in the spaces they want to,”</p> <p>66. Male, Year 1: “I’d like to play with myself”</p> <p>68. Male, Reception: “Because sharing is caring”</p> <p>n=21</p>
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