Humour styles and psychosocial adjustment in junior school pupils

Lucy Amelia James

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Abstract

It has been proposed that four main styles of humour exist. Research with adults and older children has identified links between these four styles of humour and psychosocial adjustment. Whilst adaptive humour styles have been found to be positively related to adjustment, maladaptive humour styles have been found to be negatively related. This thesis consists of four studies investigating the relationship between humour styles and adjustment in children aged 8-11 years, an age group which has previously been neglected. **Study One** used an experimental approach whereby children were presented with a vignette describing either a male or female child using one of the four styles of humour. Findings demonstrated that those using adaptive styles of humour were perceived more positively than those using maladaptive styles of humour. **Study Two** involved providing further validation for a measure of the four styles of humour suitable for primary-aged children which was administered alongside measures of psychosocial adjustment. The measure was found to be reliable and valid whilst associations consistent with those found previously were evident between humour styles and adjustment variables. Following on from this, **Study Three** used a longitudinal design to examine the associations between children's humour styles and adjustment over time. Findings suggest that whilst children's psychosocial adjustment may influence their use of humour styles, it may also be that their use of humour impacts upon their adjustment. Finally **Study Four** involved designing and evaluating a short intervention aimed at increasing children's awareness of the different styles of humour. Following the intervention it was found that children's understanding of both adaptive and maladaptive forms of humour increased. Overall the studies in this thesis suggest that younger children may use all four styles of humour and that associations with psychosocial adjustment are also present in this age group.

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1. Introduction

1.1. Summary of Theoretical Framework

The four humour styles model was proposed by Martin, Puhlik-Doris, Larsen, Gray and Weir (2003) who argued that many previous theories of humour were not well-defined. They highlighted that although in the past decades there has been a burgeoning interest in the psychology of humour, there has been far less focus on the functions of humour and the distinction between healthy and potentially harmful uses. Martin et al. (2003) therefore developed a 2x2 conceptualisation of the functions of humour in everyday life. The model makes two key distinctions, firstly whether humour is used to enhance the self or to enhance one's relationship with others and secondly whether humour is benign or potentially harmful. Accordingly, humour that is used to enhance the self in a way that is harmless and accepting is referred to as self-enhancing, on the other hand, humour used to enhance the self in a way that is hostile or harmful to others is referred to as aggressive. In contrast, benevolent uses of humour to enhance one's relationships with others are referred to as affiliative. Lastly, self-defeating humour consists of humour which aims to enhance one's relationships with others in a way that is potentially damaging to the self. This approach will be outlined in more detail and evaluated in section 2.2.3.

1.2. Background

The research for this thesis commenced towards the end of 2013. This followed research to develop a measure of the four humour styles suitable for children aged eleven and above, which also highlighted associations between humour styles and psychosocial adjustment (Fox, Dean & Lyford, 2013). Up to the point at which this research was conducted, the four humour styles model had not been considered with respect to children (see Klein &

Kuiper, 2006). Prior to commencing this thesis, as part of the author's final year project and master's dissertation, work had been undertaken to investigate the feasibility of developing a measure of humour styles suitable for primary aged children. Fox et al. (2013) had questioned whether children younger than eleven are able to use and self-report all four styles of humour. Firstly the work involved trialling a measure including just affiliative and aggressive humour. Subsequently, qualitative work involving interviews was undertaken to explore the potential use of the remaining humour styles in this age group. It was found that some children demonstrated both use and understanding of self-enhancing and self-defeating humour. This led to the initial development of the humour styles questionnaire for younger children (HSQ-Y), a measure including all four humour styles. At this point further research was required to provide further validation for the measure and to investigate potential associations with psychosocial adjustment in younger children.

1.3. Aims

As discussed, the research for this thesis was carried out due to the noticeable lack of research exploring different styles of humour in younger children below the age of eleven. As will be discussed in section 2.3., previous research suggests there may be important links between children's humour and adjustment. In particular, the research aimed to achieve the following objectives:

1. To assess children's understanding and knowledge of the outcomes of using humour in different ways.
2. To provide validation for a measure of the four humour styles suitable for junior school aged children

3. To explore whether associations between humour styles and psychosocial adjustment found in adults and older children are present in younger children.

4. To begin to investigate causality in the relationship between younger children's humour styles and psychosocial adjustment.

5. To pilot an intervention aimed at raising younger children's awareness of adaptive (affiliative, self-enhancing) and maladaptive (aggressive, self-defeating) styles of humour.

1.4. Methods

The research for this thesis utilised a quantitative approach with four studies all involving questionnaires completed by children aged 8-11 years. In view of a number of recent studies with adults, Study One used an experimental approach to explore children's perceptions of children using different styles of humour. After being presented with a vignette describing either a boy or girl using one of the four styles of humour, children were asked to complete a questionnaire providing ratings for the child they had read about. To ensure children were blind to the aims of the study, an independent measures design was used and the children in the vignette were depicted as real life children. Findings generally indicated that those using the adaptive humour styles were perceived more positively compared to those using the maladaptive humour styles. The findings also suggested that children have some knowledge of the outcomes of using different styles of humour.

Study Two employed questionnaires completed by children during two sessions of data collection, three weeks apart. The recently developed humour styles questionnaire for younger children (HSQ-Y) was administered during both sessions of data collection to assess test re-test reliability, whilst standardised measures of psychosocial adjustment were

also administered during the first session. During the second session, peer reports of the four humour styles, peer acceptance and friendship were also included. The HSQ-Y was found to be a reliable and valid measure of the four styles of humour suitable for junior school aged children. Significant associations were also found between the humour styles and psychosocial adjustment variables. For example, the adaptive humour styles were found to be positively related to peer acceptance, self-worth and self-perceived social competence and negatively related to loneliness.

Study Three employed a short-term longitudinal design, whereby participants from a number of primary schools completed questionnaires containing the HSQ-Y and measures of psychosocial adjustment, during both the autumn and summer school term. This allowed for changes over time in the relationship between humour styles and adjustment to be investigated and stronger statements about cause and effect to be made. Findings showed that whilst younger children's adjustment can predict their use of different styles of humour, their use of humour may also impact on their adjustment. It may be likely however, that this process occurs over a longer time period.

Study Four consisted of a pre and post intervention questionnaire design. Both before and after a humour styles intervention, children completed a questionnaire consisting of the HSQ-Y and scales assessing their understanding of adaptive and maladaptive styles of humour. The intervention itself consisted of three sessions using activities to teach children about the different styles of humour. A CAT (cross age teaching) approach was taken with children being asked to create materials which would be suitable to teach those in lower year groups about humour styles. It has been suggested that by developing the materials, the children will become more engaged with the topic. Following the intervention, children's understanding of both the adaptive and maladaptive humour styles had increased whilst their use of self-defeating humour had also decreased.

1.5. Structure of thesis

This thesis is organised chronologically beginning with a chapter reviewing relevant literature. The following chapters then outline each of the four empirical studies carried out. Firstly, the experimental study explores children's perceptions of those using humour in different ways. Secondly, the cross sectional study provides validation for a measure of humour styles for younger children and investigates the relationship between humour and psychosocial adjustment. Thirdly, the longitudinal study looks at the associations between humour styles and psychosocial adjustment over time. Fourthly, the intervention study describes the implementation and evaluation of a project to teach children about different styles of humour. Finally the overall discussion chapter brings together the findings from all four studies and includes discussion of the methodologies, implications and recommendations for future work.

2. Literature review

2.1. Introduction

This section will begin with an introduction to the topic of humour which will be followed by a section outlining research on humour in adults. This will include subsections on measurement and the associations between adult's humour and adjustment. The four humour styles approach will then be introduced followed by relevant research investigating the links between different styles of humour and psychosocial adjustment. Following on from this, a section outlining research with children is presented. This will consist of subsections on the development of humour, the measurement of humour in children and associations with adjustment.

It is thought that humour in children is related to their cognitive, social, emotional, and moral development (Ho, Chik & Chan, 2012). In recent years however, humour research has begun to take into account that humour may be both adaptive and maladaptive, with a multitude of research with adults finding links between different styles of humour and adjustment (Martin et al., 2003). In view of the lack of research which has explored the role and function of humour in children, this thesis aims to investigate different styles of humour in children and links with psychosocial adjustment. Literature concerning the measurement and development of humour is therefore reviewed together with the four humour styles approach; research investigating associations between humour and adjustment is also considered, as well as the small amount of research which has investigated the humour styles approach with children.

Before beginning to address the humour styles approach and associations with adjustment, it is necessary to address the question of what exactly humour is. Martin (2007) gave significant consideration to the meaning, definitions and different aspects of a sense of humour. He stated that humour is a broad and ill-defined term which refers to

things which are perceived to be funny or evoke laughter, but also to the mental processes involved in creating and perceiving humour and to the affective response. It also comes in many different forms, for example, jokes, conversational humour and unintentional humour. From a psychological perspective however, Martin (2007) stated that humour can be divided into four components: social, cognitive-perceptual, an emotional response, and a vocal expression.

Considering that humour serves a number of important cognitive, social and emotional functions and is relevant to many areas of psychology, until recent years, mainstream psychology had paid little attention to the topic. For example, Martin (2007) suggested that cognitive psychologists may look at the mental processes involved in perceiving, understanding and producing humour. For instance, for something to be perceived as funny by the brain, it is thought that it needs to be somehow incongruous in nature (Hoicka, Jutsum & Gattis, 2008). Social psychologists may look at the interpersonal functions of humour. For example, humour is considered to be more than just a form of social play, but something that may have evolved as a form of communication which may have served vital functions that have contributed to our survival as a species (see Gervais & Wilson, 2005). Humour may play a role in strengthening solidarity and cohesion within a group. It is also universal and a highly desirable characteristic and key way for people to characterise each other (Sprecher & Regan, 2002; Ziv, 2010).

Whilst humour may have a biological basis in our genes, learning and cultural norms also seem to play an important part in its development (Manke, 1998). Developmental psychologists may therefore be interested in the way that humour develops during childhood. On the other hand, biological psychologists may look at laughter and the brain regions activated by humour (e.g. Berns, 2004). They may also consider why experiences of humour are enjoyable. Perception of humour involves a positive emotional

response which can be referred to as amusement or mirth (Martin, 2007). Brain imaging has shown that humour can activate the brain's reward system (Berns, 2004) which can also be activated by music, sex and eating (Lamont, 2011). This may therefore go some way to explaining why perception of humour is typically accompanied by feelings of pleasure.

Whilst humour may be classed by some as a creative ability or as a form of mental play it may also be seen as a personality trait or set of loosely related traits. As stated by Martin (2007) however, it may not be that humour is a unitary trait, but instead a group of traits and abilities which relate to different components, forms and functions of humour. For example, individuals may differ in their abilities as a producer or as an appreciator of humour. Martin (2007) believed that humour needs to be defined with care if it can be measured scientifically and that researchers wishing to investigate humour must decide which meaning of humour is most relevant to their research questions.

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2.2. Humour in Adults

2.2.1. Measuring humour. Humour can be assessed using a variety of different methods, for example, tests of appreciation whereby participants must rate their enjoyment of humorous stimuli and tests of ability or production whereby participants are tasked with creating some form of humour (Edwards & Martin, 2010; Ruch, 1992). However, as studies such as Kohler and Ruch (1996) have found little or no relation between these dimensions of humour, their usefulness can be brought into question. In addition, they may be highly affected by subjectivity. For example, the assessment of an individual's humour could be dependent purely on the personal preference of either the participant or the researcher. As Martin (2007) suggested, they may also not really represent all forms of humour used in everyday life.

A number of self-report measures have been created which attempt to measure sense of humour as a pattern of behavioural characteristics and assess different aspects of a sense of humour. The development of these self-report measures also moved interest to the more everyday functions of humour. For example, humour may play an important role in relationships and health (Martin 2002; Ziv, 2010). Although self-report measures can be criticised for their susceptibility to socially desirable answering, when asking individuals about specific humour related behaviours, such as laughing with friends, socially desirable answering does not seem to be a significant concern (Lefcourt & Martin, 1986). For example, Martin and Lefcourt (1984) found the Situational Humour Response Questionnaire (SHRQ) which asks respondents about their likelihood of laughing in response to a specific situation, to be unrelated to a measure of social desirability. It should be acknowledged however that the measure can be criticised as it may be possible for humour to occur without the presence of laughter (Martin, 1996).

The Coping Humour Scale (CHS) (Martin & Lefcourt, 1983) focuses on use of humour as a coping strategy in difficult situations. Martin and Lefcourt (1984) provided participants with descriptions of situations and asked them how they would react to the situation from a choice of options, including whether they would have reacted with laughter. The Multidimensional Sense of Humour Scale (MSHS) (Thorson & Powell, 1993) examined social use of humour, humour as a coping strategy, appreciation of humour, and attitudes towards humour. The Sense of Humour Questionnaire (SHQ) (Svebak, 1974) measures the ability to recognise humour, enjoyment of humour and emotional expressiveness. Lastly, the Humorous Behaviour Q-sort Deck (HBQD) (Craik, Lampert & Nelson, 1996) does examine maladaptive forms of humour; however, Martin et al. (2003) argued that the measure was designed for use in observation studies by trained observers and is difficult to employ in a self-report format. In terms of assessing humour,

there may be a number of issues relating to the use of observational methods, including subjectivity, the effect of observers on participant behaviour and the feasibility of observing large numbers of participants (Banister, Burman, Parker, Taylor & Tindall, 1994).

2.2.2. Humour and psychosocial adjustment. Martin (2007) suggested that humour is essentially a social phenomenon and that humour research has generally neglected interpersonal aspects with too much focus on the use of jokes and cartoons in laboratory settings which fail to represent humour typically used in everyday life. Humour can be considered a form of social play which is typically admired in others, but also has important interpersonal functions and may well have served a key role in evolution (see Gervais & Wilson, 2005; Sprecher & Regan, 2002). For instance, humour may enhance enjoyment of relationships through playful interactions but may also be helpful in dealing with difficulties and conflict (Ziv, 2010). Using maladaptive forms of humour may however have detrimental effects within a relationship and could lead to troubles both initiating and maintaining relationships.

A sense of humour is thought to be a highly desirable characteristic in a friend (Sprecher & Regan, 2002). The shared experience of mirth and humour is believed to make people feel closer and enhance feelings of commitment and attraction and lessen the discomfort of meeting new people (Fraley & Aron, 2004; Shiota, Campos, Keltner & Hertenstein, 2004). For example, in a study by Fraley & Aron (2004) 96 randomly paired strangers of the same gender took part in a series of interactions, manipulated either to create or not to create a humorous shared experience. Participants then completed a measure of feelings of closeness to their partner. Feelings of closeness were found to be significantly higher in the humorous condition. Furthermore, those who scored higher on measures of anxious attachment and trait sense of humour were found to report greater

feelings of closeness than those who scored lower. It was stated that humour may provide an important distraction to the anxiety created by interacting with a stranger.

Nezlek and Derks (2001) asked 286 student participants to keep a daily record of their interactions and to make ratings based on their enjoyment, feelings of self-confidence and intimacy felt during the interaction. They found that those with higher scores on the Coping Humour Scale rated their interactions as more satisfying. Moreover, it is proposed that humour may be useful in protecting the face of the self and others (Keltner, Young, Heery, Monarh & Oernig, 1998). For example in using humour alongside an expression or action, one can pass their behaviour off as joking if it is not well-received by others (Ziv, 2010).

Using humour may also enhance group solidarity and play a role in reducing tension which may be particularly important when disagreements occur (Robinson & Smith-Loving, 2001; Ziv, 2010). Robinson and Smith-Lovin (2001) analysed humour attempts in small task orientated group discussion. They proposed that group members with a high status use more humour and are more successful in their attempts. They therefore have more opportunities to speak which leads to them receiving more positive evaluations from other members of a group. Low status group members may benefit the most from cohesion building humour as this may provide an equalising effect (Robinson & Smith-Lovin, 2001). For example, it has been suggested that humour may be used as a method of ingratiation by low status individuals. However, those using excessively disparaging humour in ingratiation may not have healthy relationships (Martin, 2007). In addition, using humour may make people more attractive if their jokes are well-received; if jokes are inappropriate or their attempts at humour fail however, this may lead to others developing negative perceptions (Derks & Berkowitz, 1989; Derks, Kellend & Etgen, 1995). Terrion and Ashforth (2002) specifically examined the role of putdown humour in a

group. They found that use of this form of humour seemed to be influenced by a set of implicit social rules, for example, being targeted only at those who would not take offence and at only insignificant characteristics. Their findings also highlighted that although people may assume that their interpretation of humour is shared by others, this may not be the case.

Research on humour and health has investigated the potential role of humour in a number of different areas of physical health (see Martin, 2002). Of more relevance to the current area of interest however is the role of humour in well-being and mental health. There may be a number of ways in which humour may relate to health, firstly through the physiological effects of laughter, secondly, through the physiological effects of positive emotion, thirdly, through cognitive mechanisms that moderate the adverse effects of stress, and lastly, as an interpersonal mechanism that may increase someone's level of social support (e.g. Fry, 1994; Gross & Muñoz, 1995; Szabo, 2003; Zhao, Wang & Kong, 2014). Possible mediator variables which may help to explain the relationship between different styles of humour and psychosocial adjustment further will be discussed later in section 2.2.7.

Führ (2002) suggested that rather than coping humour being an unconscious automatic reaction, akin to a defence mechanism (Freud, 1928) it is in fact a chosen intentional strategy. There may be a number of potential coping related functions of humour including distraction and changing appraisals (Goodenough & Ford, 2005, Martin, Kuiper, Olinger and Dance, 1993). As humour involves incongruity and multiple interpretations, it can be a way for people to shift perspective in a stressful situation reappraising it from a less threatening point of view (Dixon, 1980). As a consequence, the situation would become more manageable. It may also be that humour can help in preserving the self as it is a healthy way of creating distance between one's self and a

problem, which could in turn allow an individual to view a situation from a new perspective (Kuiper, Martin & Olinger, 1993).

A number of studies highlight that those with higher humour scores were able to view stressful or challenging events from a more positive perspective, providing support for the view that humour influences cognitive appraisals (Kuiper, McKenzie & Belanger, 1995). Kuiper et al. (1993) for example, administered the Coping Humour Scale to 44 female students as well as obtaining cognitive appraisals for an upcoming examination. Findings showed that higher humour users rated the exam as more of a positive challenge compared to those who scored low on use of humour. Furthermore, correlations have also been found between higher humour scores and more positive coping styles, for example, emotional distancing and confrontive coping styles (Abel, 2002; Kuiper et al., 1993). This suggests that the use of humour to cope can involve emotional self-protection but also active confrontation of problems (Martin, 2007).

A number of studies have also explored the stress buffering effect of humour. For example, in a study by Martin and Lefcourt (1983), student participants completed various measures of humour alongside negative events checklists, which were used to predict scores on measures of mood disturbance. Findings showed that those with higher humour scores were less likely to report negative moods following stress. Moreover, as found by Martin et al. (1993), greater use of humour may also enhance enjoyment of positive events. Whilst a number of studies do point to the stress buffering effects of humour, it is important to note this has not been the case for all studies investigating this hypothesis. As Martin (2007) stated, from this research, it is difficult to discern which sorts of humour may be beneficial for coping.

A number of laboratory experiments utilising a combination of humorous video clips and mood induction techniques have highlighted that humour can both increase

positive moods and also decrease negative feelings, anxiety and stress (e.g. Danzer, Dale & Klions, 1990; Szabo, 2003; Vilaythong, Arnau, Rosen & Mascaro, 2003). Although these studies point towards the short term positive effects of humour and allow for the direction of causality to be known, they may not truly represent the way that humour and stress occurs in everyday life (Martin, 2007).

Correlational studies using a variety of self-report humour measures as outlined in section 2.2.1., for example the Coping Humour Scale and Situational Humour Response Questionnaire, have also found significant relationships between humour and psychosocial adjustment variables. For example, humour has been found to be negatively related to depression (Kuiper & Borowicz-Sibenik, 2005; Nezu, Nezu & Blissett, 1988) and loneliness (Overholser, 1992) and positively related to self-esteem (Kuiper & Martin, 1993). As stated by Martin (2007), which humour scales are significantly related to which well-being measures varies across studies. As correlations were also weak and inconsistent, Martin et al. (2003) argued that overall evidence for the benefits of humour on mental health was not overwhelming. Taking into account the views of those such as Kirsh and Kuiper (2003), the measures used in the above studies also tend to underrepresent more negative or maladaptive forms of humour.

2.2.3. The four humour styles approach. Whilst many of the self-report humour scales outlined above were developed based on the assumption that humour is beneficial to health and well-being, this may not be the case for all forms of humour (Martin et al., 2003). Kirsh and Kuiper (2003) stated that the majority of measures of humour underrepresent more maladaptive forms of humour. Moreover, Ruch's (1994) study indicated that self-report humour scales do not seem to measure substantially different dimensions of humour. In terms of measuring both adaptive and more maladaptive uses of humour effectively, Martin et al. (2003) developed a humour styles questionnaire (HSQ)

designed for use with adults proposing four distinguishable, however overlapping, humour styles. Martin et al. (2003) also argued that previous measures failed to adequately assess maladaptive forms of humour and that many of the measures were not found to be strongly correlated with measures of psychological adjustment. When creating the measure they also took into account the views of psychologists such as Freud (1928), Allport (1961) and Maslow (1954) who all referred to particular styles or forms of humour as opposed to using a broader meaning. Martin et al. (2003) stated that it is important to acknowledge that it is assumed that humour is spontaneous and often used without a consciously chosen strategy. People are therefore largely unaware of humour's social or psychological functions.

The first style of humour proposed by Martin et al. (2003), affiliative, was categorised as having the ability to amuse others, tell jokes or say funny things, an example item being, "I don't have to work very hard at making other people laugh – I seem to be a naturally humorous person". In contrast to affiliative humour, use of aggressive humour is not assumed to have positive outcomes on relationships but said to be related to traits such as aggression, with the possibility of alienating others. This humour style has been described as using humour without consideration of the impact on others, including the use of sarcasm, teasing or ridicule, an example item being, "When telling jokes or saying funny things, I am usually not very concerned about how other people are taking it".

Self-enhancing humour is described as a style used by individuals who are able to maintain a humorous outlook on life, particularly when faced with life's stresses or difficult situations. An example item from the humour styles questionnaire being, "It is in my experience that thinking about some amusing aspect of the situation is often a very effective way of coping with problems". Martin et al. (2003) added that this humour style can be closely related to coping humour (Martin 1996) which can allow an individual to

avoid unpleasant emotions. Lastly, self-defeating humour involves an individual's attempts at making others laugh at their own expense, often by putting themselves down, for example demonstrated by the item, "Letting others laugh at me is my way of keeping my friends and family in good spirits". It was stated that individuals using this style would appear humorous but actually may suffer from low self-esteem and poor relationships. Self-defeating humour, along with aggressive humour can be considered as maladaptive humour styles. Conversely, affiliative and self-enhancing humour can be referred to as adaptive. Furthermore, the humour styles can also be categorised into self-focused and other-focused humour styles. Affiliative and aggressive humour can be considered as other-focused, whereas self-enhancing and self-defeating humour, are thought to be self-focused (Kuiper, Kirsh & Leite, 2010).

Martin et al. (2003) stated that using the HSQ resulted in stronger correlations between humour styles and psychological adjustment compared to previously available measures. This demonstrates key evidence of its validity and the value of its use over other measures of humour. Peer ratings of the four humour styles were also found to match self-report data. The HSQ has been used successfully in a Belgian context (Saraglou & Scariot, 2002), a Chinese context (Chen & Martin, 2007) and a Lebanese context (Kazarian, Moghnie & Martin, 2010) demonstrating its utility across different cultures. Although not directly relevant to this thesis, a number of studies have found links between the four humour styles and key dimensions of personality (e.g. Vernon, Martin, Schermer & Mackie, 2008).

Martin et al. (2003) also examined how different subscales of the HSQ related to other previous measures of humour. For example, they found that the Situational Humour Response Questionnaire (SHRQ) and the Sense of Humour Questionnaire (SHQ) were only related to the adaptive forms of humour. Conversely, whilst as expected the Coping

Humour Scale (CHS) was related to adaptive forms of humour, most notably, self-enhancing, surprisingly it was also related to aggressive humour. In addition, the Multidimensional Sense of Humour Scale (MSHS) was also found to be associated with all four humour styles. This may explain why the measure has not been found to correlate particularly strongly with well-being. Taken together, these findings indicate that the two maladaptive styles of humour are not well-measured by other tests of humour (Martin et al., 2003).

Although evidence to support the four humour styles approach has been plentiful, some have been critical of the humour styles approach. For example, Ruch and Kohler (1998) took a temperament approach to humour. They believed that differences in people's sense of humour are based on habitual and innate differences in cheerfulness, seriousness and bad mood. Different styles of humour however could be related to different combinations of the three traits. Those with a more aggressive sense of humour for instance, may be low on seriousness, moderate on cheerfulness but high on bad mood (Martin, 2007).

Cervone, Caldwell and Orom (2010) stated that the HSQ can be criticised for assuming that people do not differ in the meaning they assign to their behaviours. The approach assumes that behaviours correspond to intentions when this may not always be the case. For example, someone using affiliative humour may do so with the intention of increasing their social status rather than for the enjoyment of their peers. Similarly, an incident of aggressive humour where someone teases someone for making a mistake may not have been driven by the need to make someone feel sad. The fact that several of the HSQ subscales, for example, affiliative and aggressive overlap could be evidence to support this. Furthermore, Cervone et al. (2010) believed that rather than trying to infer the goals which underlie the use of different styles of humour, they should be directly

assessed. It could be argued that this is done with some of the items, for example 'If I don't like someone, I often use humour or teasing to put them down', but this is not the case for all items. Yet, this does not seem to affect the reliability of the sub-scales. Interviews could be used to help to address the question of why people may employ different forms of humour, with a view to developing the HSQ further.

Heintz and Ruch (2015) examined convergence between the conceptualisation and measurement of the humour styles. They rephrased the definitions and construct descriptions of the four humour styles outlined by Martin et al. (2003) into self-report statements, for example, 'I use humour to enhance my relationships with others in a way that is relatively benign and self-accepting'. These were then administered alongside the HSQ to 340 participants. Correlations and structural equation modelling were then used to compare the different indicators of the four humour styles. Findings showed that good convergence was found for the self-defeating scale, but convergence was lower for the remaining humour styles. Heintz and Ruch (2015) stated that their findings only lend partial support to the convergence of the HSQ and the original conceptualisation of the four humour styles. In response to this however, Martin (2015) argued that there were a number of limitations to Heintz and Ruch's (2015) study. For example, the self-report measures used themselves had questionable reliability and validity. Furthermore, he argued that the assumption is made that humour styles are consciously selected; this was not an assumption which was made in the original Martin et al. (2003) article. Although as Martin (2015) stated, the HSQ may eventually be replaced by other measures, no studies have so far given reason to dismiss its value.

2.2.4. Humour styles and social adjustment. Studies utilising the HSQ have examined associations between different styles of humour and several social adjustment variables. Whilst the majority of research in this area tends to consist of cross sectional,

questionnaire based studies with student samples, they have been conducted across different countries and cultures. Firstly, whilst the adaptive humour styles have been found to be positively related to perceived interpersonal competence, the maladaptive humour styles tend to be negatively related (Fitts, Sebby & Zlokovich, 2009; Kuiper, Grimshaw, Leite & Kirsh, 2004; Yip & Martin, 2006). For example, Yip and Martin (2006) and Kuiper et al. (2004) both administered the interpersonal competence questionnaire alongside the HSQ to Canadian samples of just over 100 undergraduate participants. In terms of different aspects of interpersonal competence, the adaptive humour styles have been found to be positively related to displaying skills in initiating relationships. Aggressive humour on the other hand has been found to be negatively related to an ability to manage conflict and provide emotional support (Kuiper et al., 2004; Yip & Martin, 2006). As Yip and Martin (2006) state, as well as the need to replicate the findings with a more diverse sample, the correlational nature of the study means that causality cannot be inferred. For example, whilst it may be that different styles of humour influence interpersonal competence, it could also be that an individual's level of interpersonal competence may influence their use of different styles of humour.

The above findings are supported by McCosker and Moran (2012) who also found that whilst initiation competence predicted use of both affiliative and aggressive humour, conflict management was found to negatively predict aggressive humour. Taken together these findings could suggest that aggressive humour may be particularly detrimental to forming and maintaining close relationships. Moreover, Hampes (2010) administered the HSQ to a sample of 103 undergraduates from the USA alongside a measure of empathy. He found that whilst the adaptive humour styles were positively related to aspects of empathy, aggressive humour was found to be negatively related. As stated by Hampes (2010), empathy would enable an individual to imagine the potential pain felt by a target of

aggressive humour, making them less likely to employ this humour style. Users of aggressive humour on the other hand may become less likely to empathise with others. These findings may also explain why users of aggressive humour find it difficult to provide emotional support (Kuiper et al., 2004; Yip & Martin, 2006). Similarly, whilst the adaptive humour styles are negatively associated with shyness, the maladaptive humour styles have been found to be positively associated (Erozkan, 2009; Hampes 2006). This may lend further support to the finding that users of adaptive humour styles have greater skills in initiating relationships.

If individuals adopt an aggressive humour style, it seems likely that they will display other aggressive tendencies. As they predicted, Martin et al. (2003) found aggressive humour to be positively related to both hostility and aggression. Surprisingly, self-defeating humour was also found to be positively related to hostility and aggression. These results are also supported by Chen and Martin (2007) who found a positive association between both maladaptive humour styles and hostility, using a Chinese sample and Dozois, Martin and Faulkner (2013), who found aggressive humour to be related to four components of aggression including verbal and physical aggression, hostility and anger.

Markey, Suzuki and Marino (2014) investigated the interpersonal meaning of humour styles. They found variation in the interpersonal profiles of users of different humour styles. For example, users of both maladaptive humour styles may be cold, hostile and detached. Users of the adaptive humour styles on the other hand tend to be friendlier and possess higher interpersonal warmth. It is therefore unsurprising that in a study with 139 Japanese undergraduates who completed an 'experiences of social exclusion' scale alongside the HSQ, affiliative humour was found to be negatively related to social

exclusion, whilst the maladaptive humour styles were found to be positively related (Masui, Fujiwara & Ura, 2013).

Research also suggests that humour styles may be related to the quality of personal relationships. For example, whilst the adaptive humour styles have been found to be positively related to intimacy, self-defeating humour was found to be negatively related (Martin et al., 2003). Similarly, whilst the adaptive humour styles have been found to be positively related to satisfaction with or perceptions of social support, the maladaptive humour styles have been found to be negatively related (Martin et al., 2003). These findings were also found to be supported by Zhao et al. (2014) who administered the HSQ alongside a measure of perceived social support to 477 Chinese students. As with all the studies in this area, longitudinal work would now be beneficial in allowing stronger statements to be made about causal relationships. For example, those with high quality interpersonal relationships may be more likely to adopt more adaptive styles of humour because they are provided with more opportunities to practice using these humour styles. Conversely, those who already utilise adaptive humour styles may be more likely to develop better quality relationships as they are popular and accepted by their peers (Klein & Kuiper, 2006).

In addition it should also be noted that many of the associations found in the above studies may be confounded by shared method variance. As stated by Hawker and Boulton (2000), if the same method is used to assess two different variables, a significant correlation between the variables may be partly explained by the fact that measurement variance is shared between the two variables. For example, rather than explaining an association between two variables, a correlation may represent the degree to which a child who has negative feelings about one aspect of their life, may also tend to have similar feelings about another aspect of their life. Although it may not always be the case that

shared method variance is a cause for concern (Conway & Lance, 2010), relying solely on self-reports when investigating the relationships between humour styles and adjustment could be problematic. Gathering data from additional sources may go some way to addressing this potential issue.

   2.2.4.1. Experimental studies. In recent years, a number of studies, mainly conducted with student samples have adopted an experimental approach to explore the potential consequences of using different styles of humour. These studies, which tend to assess participants' perceptions of different uses of humour, provide an alternative to correlational studies which rely solely on self-report methods. For example, Kuiper and Leite (2010) provided 166 North American students with descriptions of individuals who used both high and low rates of each of the four humour styles as well as a description of a typical student with no mention of humour. They also collected ratings of several desirable and undesirable personality attributes for the individuals described. Personality attributes included characteristics such as being pleasant and considerate but also cold and mean. Findings showed that the individuals using adaptive humour styles, particularly affiliative, were rated positively whereas users of the maladaptive humour styles, particularly aggressive, were rated negatively. The inclusion of the description of the typical student with no mention of humour also led to the suggestion that an absence of adaptive humour styles may also lead to perceptions of low levels of positive personality attributes. In terms of limitations of the study, Kuiper and Leite (2010) acknowledged that providing written descriptions may not be truly representative of the way humour is perceived in everyday social interactions. Moreover, in real life interactions, it could be that perceptions of humour are influenced by previously made impressions about personality. In addition, it was also stated that future, similar work could benefit from including a greater variety of desirable and undesirable personality attributes.

Similarly, to investigate reactions to different styles of humour, Kuiper et al. (2010) presented 132 students with short statements describing a hypothetical friend using each of the four humour styles. Although the statements could be criticised for presenting only a very small amount of information, it was found that use of aggressive and self-defeating humour in others made recipients feel less positive about themselves, as well as being less likely to want to continue an interaction. This was particularly evident for aggressive humour. Adaptive uses of humour on the other hand led to participants feeling more positive about themselves and being more likely to want to continue an interaction. When this study was repeated with an adolescent sample of 181 (mean age 16) the same pattern of findings was evident.

In an extension to this work, Kuiper, Aiken and Sol Pound (2014) investigated reactions to an individual using each of the four humour styles, who was presented in a short scenario and described as either socially anxious or not socially anxious. Findings suggested that although a socially anxious individual may benefit just as much from the use of humour during an interaction, self-defeating humour may be particularly detrimental in social interactions when an individual is also socially anxious. Kuiper et al. (2014) suggested that further research should now aim to clarify whether socially anxious individuals may display deficits in their use of adaptive humour styles or excesses in their use of maladaptive humour styles. It could be that users of self-defeating humour may resort to using this style of humour as they have been deprived of opportunities to practice using the adaptive humour styles (Klein & Kuiper, 2006). Negative social interactions could therefore increase their social anxiety even further. Social skills training based on appropriate uses of humour may therefore be beneficial to these individuals (Kuiper et al., 2014).

It may be that humour acts as an interpersonal signal to others, an idea which has its basis in Darwin's (1871) model of sexual selection. Zeigler-Hill, Besser and Jett (2013) examined whether the style of humour used by an individual can affect others' perceptions. Their work was based on implicit theories whereby if a person has a belief that two characteristics are associated, they may ascribe a second characteristic onto an individual in recognising the first characteristic. In an initial study, 257 student participants from the USA recruited 3 or more friends or family members who were then asked to complete a brief version of HSQ consisting of three items from each of the four humour scales, to assess the perceived humour styles of the target participants. Findings showed significant correspondence between self-reported humour styles and perceiver ratings. In addition participants using adaptive styles of humour were also rated more positively by their friends and family in terms of a number of personality features. In a second study, 1190 participants were given brief written descriptions of individuals using particular humour styles. In this case, to ensure that the descriptions accurately represented each of the four humour styles, pilot work was undertaken using independent raters. Furthermore, in comparison to previous studies, the increased sample size used in the second study should also be noted. Findings showed that users of the adaptive humour styles were again rated more positively. It was suggested that a good sense of humour may be viewed as being associated with a likeable and healthy personality and therefore a number of adaptive characteristics may be attributed to 'funny' people. For example, those with a good sense of humour may be seen as intelligent, emotionally stable, pleasant and interesting (Cann & Calhoun, 2001).

Lastly, Cann and Matson (2014) examined humour styles in relation to social desirability. A sample of 100 students completed social desirability ratings for a hypothetical potential friend or partner who was described as using behaviours

representing the four humour styles. For this purpose each of the 32 HSQ items was reworded from first person to third person. For example, the item 'I enjoy making people laugh' became 'They enjoy making people laugh'. Findings showed that not only were the adaptive humour styles rated as desirable, the maladaptive humour styles were judged to be undesirable. Although the sample size used in the study was relatively small, the findings again clearly highlight the importance of differentiating between adaptive and more maladaptive uses of humour. Based on the findings of these studies, it would now be beneficial for future work to include additional age groups, as it remains unclear whether the importance of humour may vary with age (Zeigler-Hill et al., 2013). As highlighted by Klein and Kuiper (2006), research with children, which considers the impact of different styles of humour on the recipient, is clearly lacking. Furthermore, this paradigm could be easily adapted for use with younger children.

  2.2.5. Humour styles and psychological adjustment. As discussed in section 2.2.3., rather than assuming that humour in general is beneficial to psychological well-being, it is necessary to make a distinction between healthy and potentially detrimental uses of humour. Whilst the presence of adaptive forms of humour may be valuable, the absence of maladaptive forms of humour may be just as important (Martin et al., 2003). A wealth of studies have investigated relationships between humour styles and a variety of psychological adjustment variables. Again, the majority of these studies are survey based, cross sectional and utilise only student samples. They have however been conducted in a variety of different countries and cultures with largely similar findings being apparent.

  Firstly, studies have found associations between humour styles and a number of variables which indicate psychological symptoms such as perceived stress and negative affect (Besser, Luyten & Mayes, 2012; Cann & Etzel, 2008; Cann, Stilwell & Taku, 2010; Edwards & Martin, 2010; Kuiper et al., 2004; Stokenberga, 2008). To reflect the aspects of

psychosocial adjustment that were the focus of the current thesis, a greater emphasis here is placed upon studies which have examined relationships with depression and anxiety. Whilst the adaptive humour styles tend to be negatively related to these variables, self-defeating humour tends to be positively related (Besser et al., 2012; Dozois, Martin & Bieling, 2009; Dyck & Holtzman, 2013; Kuiper et al., 2004; Kuiper & McHale, 2009; Martin et al., 2003; Stokenberga, 2008). For example, Tucker et al. (2013a) administered measures of depression and social anxiety alongside the HSQ to 306 students from the USA. Whilst both affiliative and self-enhancing humour were found to be negatively related to both measures, self-defeating humour was found to be positively related. Although as Tucker et al. (2013a) stated, possible biases can occur with the use of self-report data, future work could employ semi-structured interviews to overcome this issue. It could be argued however, that interviews may lead to further bias as participants would not be anonymous.

Considering that significant associations have also been found between humour styles and suicidal thoughts it seems vital to attempt to understand these relationships further. For example, Tucker et al. (2013b) administered the HSQ alongside other measures including a measure assessing suicidal ideation. Whilst both adaptive humour styles were found to be negatively related to suicidal ideation, self-defeating humour was found to be positively related. It could be that self-defeating humour is seen as being particularly maladaptive as it involves denigration of the self (Martin et al., 2003).

Whilst loneliness can be used as a measure of social adjustment it may also be thought of as an indicator of psychological distress. As stated by Çeçen (2007), loneliness is a debilitating problem which is detrimental to one's emotional and physical health. Loneliness occurs when there is a discrepancy between one's desired and actual social network, both in terms of quality or quantity (Fitts et al., 2009). Hampes (2005)

administered a measure of loneliness assessing emotional response to a discrepancy between desired and achieved social contact, alongside the humour styles questionnaire to 106 college students in the USA. Whilst the adaptive humour styles have been found to be negatively related to loneliness, self-defeating humour has been found to be positively related. These findings are supported by Yue, Wong and Hiranandani (2014) with a Chinese sample and by Çeçen (2007) with a Turkish sample.

In an attempt to explain the above findings Yip and Martin (2006) found the adaptive humour styles to be positively related to aspects of social competence, whilst self-defeating humour has been found to be related to social exclusion (Masui et al., 2013). These findings suggest that compared to self-defeating humour, users of the adaptive humour styles may have more success in forming relationships, which may protect against feelings of loneliness. It is acknowledged nonetheless that it may be useful to differentiate between social and emotional loneliness. Whilst social loneliness refers to a lack of a social network sharing common interests, emotional loneliness is characterised by the lack of a close attachment to another person (Yue et al., 2014). For example, with a sample of 159 students from Hong Kong, Yue et al. (2014) found that self-defeating humour was positively related to both types of loneliness. So not only are these individuals lacking close relationships, they may also be deprived of forming future relationships due to the lack of a social network around them.

Overall, although there is strong evidence of associations between humour styles and loneliness, due to the cross sectional nature of the research, causation cannot be inferred. For example, whilst the use of maladaptive humour styles may lead to feelings of loneliness, it may be that lonely individuals who do not have a strong social network or who lack a close bond with another person are not presented with opportunities to practice and develop the more adaptive humour styles. It should be noted nonetheless, that although

the sample sizes used in the studies were fairly small, consistent results were found across several different countries.

An abundance of studies have also examined relationships between humour styles and a variety of variables which may reflect an individual's psychological wellbeing. For example, the adaptive humour styles have been found to be positively related to variables including happiness, satisfaction with life, hope, optimism, positive affect and overall well-being (Cann et al., 2010; Kazarian & Martin, 2004, 2006; Kazarian et al., 2010; Leist & Muller, 2013; Yue, Liu, Jiang & Hiranandani, 2014; Zhao et al., 2014). For example, Stockenberga (2008) administered the Latvian version of the HSQ alongside the Positive and Negative Affect Scale. They found both affiliative and self-enhancing humour to be positively associated with positive mood.

In some cases significant associations were also found for the maladaptive humour styles (Cann & Etzel, 2008; Cann et al., 2010; Jovanovic, 2011; Dyck & Holtzman, 2013; Paez, Seguel & Martinez-Sanchez, 2013). For example, Paez et al. (2013) administrated measures of happiness and psychological well-being alongside the HSQ to 355 students in Spain. Whilst aggressive humour was found to be positively related to happiness, self-defeating humour was found to be negatively related to well-being. Jovanovic (2011) on the other hand administered a measure of affective well-being alongside the HSQ to 225 student participants in Serbia. In this case, they found both maladaptive humour styles to be negatively related to affective well-being. In terms of possible explanations for the variations in these associations, it could be that different cultural contexts are responsible. For example, with an Armenian-Lebanese sample, Kazarian and Martin (2006) failed to find a negative correlation between self-defeating humour and well-being. They suggested that in this population and cultural context, self-defeating humour may not be detrimental

to well-being. It may therefore be that other associations between humour styles and adjustment variables may vary based on the countries in which the studies are conducted.

Overall, findings for relationships between aggressive humour and well-being in particular have been inconsistent (Dyck & Holtzman, 2013). For example, only some studies which have utilised measures of anxiety and depression have found significant positive associations with aggressive humour (Chen & Martin, 2007; Yue, Hao & Goldman, 2010; Edwards & Martin, 2010; Hugelshofer et al., 2006; Tucker et al., 2013a). Dozios et al. (2009) stated that the lack of relationship with aggressive humour is somewhat consistent with Beck's (1967, as cited in Dozois et al., 2009) cognitive theory, which contends that depression is more related to themes such as rejection, as opposed to anger. They suggested that it may be more relevant to examine the outcomes of aggressive humour in terms of externalising as opposed to internalising problems. As stated by Martin et al. (2003), aggressive humour is thought to be detrimental to well-being due to its tendency to impair relationships.

Those with high emotional intelligence have good stress management skills and exhibit an ability to manage, evaluate and express their emotions (Greven, Chamorro-Premuzic, Ateche & Furnham, 2008). A number of different studies have investigated associations between humour styles and different facets of emotional intelligence. For example, Yip and Martin (2006) found that both maladaptive humour styles were negatively related to emotion perception whilst self-enhancing humour was positively related to emotional management. Greven et al. (2008) administered a measure of trait emotional intelligence alongside the HSQ to 1038 university students from the UK and Germany. They found that whilst the adaptive humour styles were positively related to emotional intelligence, the maladaptive humour styles were negatively related. In particular, the maladaptive humour styles were found to be negatively related to self-

control and emotionality whilst self-defeating humour was also negatively related to sociability. These findings are also supported by Gignac, Karatamoglou, Wee and Palacios (2014) who found that the adaptive humour styles were positively related to dimensions of emotional intelligence including, emotional awareness of others and emotional expression, self-management and control, whilst the maladaptive humour styles were negatively related.

Self-esteem can be thought of as an individual's own assessment of their value or worth (Rosenberg, 1979). In general, studies which have taken place in a number of different countries, found that whilst the adaptive humour styles are positively related to self-esteem, self-defeating humour tends to be negatively related (Kuiper et al., 2004; Leist & Muller, 2013; Martin et al., 2003; Stieger, Formann & Burger, 2011; Yue et al., 2014). For example, Zeigler-Hill and Besser (2011) administered the HSQ and Rosenberg self-esteem scale to 200 Israeli undergraduates. Findings showed that whilst both affiliative and self-enhancing humour were positively related to self-esteem, self-defeating humour was negatively related. These findings were replicated when Hiranandani and Yue (2014) utilised the same measures with 203 university students from India and Hong Kong, suggesting that associations between different humour styles and self-esteem may be consistent across different cultures.

As found by Saraglou and Scariot (2002) self-defeating humour was negatively related to several different aspects of self-esteem including, social, family and education related. Whilst the adaptive uses of humour may facilitate the development of support networks which may foster self-esteem, self-defeating humour may lead to the development of maladaptive social networks (Kuiper & McHale, 2009). As stated by Stieger et al. (2011), due to the correlational nature of the research it is not possible to make inferences about causality. Whilst those with low self-esteem may adopt self-

defeating humour as a reflection of their inner feelings, it may be equally likely that use of self-defeating humour results in lower self-esteem, due to increased focus on one's own flaws or shortcomings. It should also again be noted that relying solely on self-report measures could lead to bias in terms of shared method variance or socially desirable answering.

Findings for aggressive humour are again less consistent. Whilst some studies have also found negative associations between self-esteem and aggressive humour (Edwards & Martin, 2010; Ozyesil, 2012; Vaughan, Zeigler-Hill & Arnau, 2014; Zhao et al., 2014), Saraglou and Scariot (2002) found aggressive humour to be positively related to social self-esteem. Similarly, McCosker and Moran (2012) administered the HSQ alongside Rosenberg's measure of self-esteem and the interpersonal competence questionnaire to an Australian sample of adult participants. They found that higher self-esteem but also lower interpersonal competence, predicted greater use of aggressive humour. As stated by Vaughan et al. (2014), self-esteem has been associated with psychological wellbeing, but it has also been found to be associated with other more negative outcomes such as aggression. Whilst self-esteem has many positive connotations it is also a broad term thought to be similar in meaning to proud, arrogant or conceited, terms which hold more negative connotations (Baumeister, Smart & Boden, 1996). Moreover, it may be that findings differ depending on the type of self-esteem being measured. As discussed, Saraglou and Scariot (2002) examined several different aspects of self-esteem, for example social self-esteem.

In a further attempt to explain the inconsistent findings further, self-esteem instability may also be relevant. As Vaughan et al. (2014) argue, those with unstable high self-esteem may have a desire to feel good about themselves, but may struggle to consistently maintain these feelings. Findings of Vaughan et al.'s (2014) study with 960

university students in the USA indicated that self-esteem stability moderates the relationship between humour styles and self-esteem. This suggests that the degree to which self-esteem impacts on an individual's use of humour styles may be affected by their likelihood of maintaining the same level of self-esteem. For example, those who reported the most stable high self-esteem also reported the highest use of affiliative humour and lowest use of the maladaptive humour styles. Vaughan et al. (2014) argued that those with more stable high self-esteem may expect acceptance from their social environment which gives them more confidence to practice using positive forms of humour. This use of adaptive humour styles may then increase social acceptance which could in turn increase self-esteem stability. Those with unstable self-esteem on the other hand may be more likely to expect rejection, meaning that instead of attempting the use of adaptive humour styles, they resort to putting themselves down or to showing aggression towards others.

It may also be that individuals have a discrepancy between their implicit and explicit self-esteem. For example, Stieger et al. (2011) included a measure of implicit self-esteem as well as Rosenberg's scale as a measure of explicit self-esteem, in their study with an adult sample of Germans and Austrians. Whilst implicit self-esteem refers to a more automatic or unconscious evaluation of oneself, explicit self-esteem refers to a conscious or more deliberate evaluation (Stieger et al., 2011). They found that those with high implicit and low explicit self-esteem were more likely to use the greatest amount of self-defeating humour.

2.2.6. Humour styles as moderators and mediators. Understanding the role and function of humour styles in relation to psychosocial adjustment can be furthered by exploring studies which have examined humour styles as moderators and mediators. Whilst moderators are variables which affect the strength and/or direction of the relationship between an independent and dependent variable, mediator variables explain or account for

the relationship between an independent and dependent variable (Baron & Kenny, 1986). These studies may also be useful when considering why certain humour styles develop. Firstly, adaptive humour styles have been found to mediate the relationship between personality and well-being (Jovanovic, 2011) and also the relationship between self-esteem and happiness (Yue et al., 2014). For example, Yue et al. (2014) administered the HSQ alongside the Rosenberg self-esteem scale and a measure of subjective happiness to 227 student participants from Hong Kong. Both affiliative and self-enhancing humour were found to mediate the relationship between self-esteem and subjective happiness. This suggests that those with higher self-esteem may be more likely to adopt using the adaptive humour styles, which in turn may increase their happiness.

Several studies have also examined humour styles as moderators in the relationship between a number of variables and depression. For example, Olson, Hugelshofer, Kwon and Reff (2005) administered the HSQ and measures of depression and rumination to 303 student participants from the USA. They found significant negative associations between the adaptive humour styles and rumination. Whilst the adaptive humour styles acted as a buffer against high levels of rumination, having high levels of rumination and low use of adaptive humour styles led to substantially higher levels of depression. As stated by Olson et al. (2005), using affiliative humour can still allow an individual to focus on a negative event, but in a way that bolsters relationships. Moreover using self-enhancing humour can allow an individual to focus on a negative event in a way which facilitates emotional regulation. Similarly, for males Hugelshofer, Kwon, Reff and Olson (2006) found that affiliative humour provided a buffer against a negative attributional style. They argued that regardless of attributions made about a negative experience, affiliative humour would allow an individual to think over the experience and express emotions whilst avoiding discomfort for both the self and others and facilitating social support. Given the novelty of

the combination of variables used in these studies, replication of the findings may be warranted (Olson et al., 2005). Furthermore, to avoid the potential for bias based on the use of self-report, confirmation of the findings through the use of other methods e.g. interviews or experimental research would be beneficial (Hugelshofer et al., 2006).

As mentioned previously, associations were found between the humour styles and suicidal ideation. In addition, Tucker et al. (2013b) also found that when controlling for depression, affiliative and self-defeating humour moderated the relationship between predictors of suicide such as perceived burdensomeness and suicidal ideation. These findings suggest that those who are able to use affiliative humour when experiencing negative feelings may be less likely to want to end their life. Users of self-defeating humour on the other hand may be more at risk of developing suicidal feelings. Whilst affiliative humour helps to strengthen interpersonal bonds which may protect against suicidal feelings, users of self-defeating humour may feel socially disconnected. As their weaknesses are validated through others' laugher they may begin to feel that those close to them do not care (Tucker et al., 2013b). In a further study by Tucker et al. (2013a) affiliative and self-defeating humour were also found to moderate the relationship between social anxiety and depression. These findings suggest that socially anxious individuals who are able to utilise adaptive interpersonal humour may be less likely to develop depression, perhaps as they are able to avoid negative interpersonal events. Users of self-defeating humour on the other hand may elicit rejection through their self-disparagement (Tucker et al., 2013).

Fitts et al. (2009) administered a shyness scale alongside the HSQ and measure of loneliness to 147 student participants in the USA. They found that the relationship between shyness and loneliness may be partially mediated by an individual's failure to use adaptive humour styles and tendency to use maladaptive humour styles. Although as Fitts et al.

(2009) stated, the findings suggest humour styles may play an important role in the relationship between shyness and loneliness, there may still be other strategies or behaviours which can be utilised by shy or lonely individuals.

According to Young, Klosko and Weshaar (2003), early maladaptive schemas (EMS) are sets of core beliefs about the self and others which are thought to develop in childhood in the context of relationships with caregivers. Dozois et al. (2009) administered measures of maladaptive schemas and depression alongside the HSQ to 305 student participants in Canada. Although it was acknowledged that the sample was made up mainly of females, they found that whilst the adaptive humour styles were negatively related to various EMS domains, self-defeating humour was positively related. In addition aggressive humour was found to be associated with a particular EMS domain pertaining to deficiencies in self-control. As stated by Dozois et al. (2009), those with EMS may be less likely to develop playful interpersonal styles associated with affiliative humour and more likely to engage in self-disparagement and ingratiation as associated with self-defeating humour. They may also be less likely to be competent in finding amusement in potentially threatening situations. In support of this, further analysis found that the relationship between EMS and depression was mediated by the self-focused humour styles. These findings again suggested that individuals with maladaptive schemas may be less likely to develop the ability to use humour as a coping mechanism and be more likely to resort to the use of self-defeating humour.

In a further study, Dozois et al. (2013) found significant associations between the four humour styles and aspects of aggression, e.g. hostility. Mediation analysis suggested that both maladaptive humour styles may play an important part as one of the mechanisms by which EMS are related to later externalising problems. It is less clear why this finding was obtained for self-defeating humour. As stated by Dozois et al. (2013), this may be

explained by the fact that self-defeating humour could be the result of a lack of intimacy in relationships or because it can be used as a maladaptive coping style. It may also be that feelings of resentment develop as users of this humour style fail to connect with others (Dozois et al., 2013).

In support of previous research, in a study with 137 student participants from Canada, Kuiper and McHale (2009) found that higher levels of the adaptive humour styles predicted higher self-esteem and higher levels of self-defeating humour predicted lower self-esteem. In addition to this, Kuiper and McHale (2009) also investigated humour styles in the context of a self-schema model of emotion whereby an individual's self-evaluative standards which emerge early in life and guide and assess their life experiences, impact on their well-being. Whilst positive self-evaluative standards were found to be associated with higher use of the adaptive humour styles and lower use of self-defeating humour, the opposite was found for negative self-evaluative standards. Furthermore, affiliative humour was found to mediate the relationship between positive self-evaluative standards and higher self-esteem and lower depression, whilst self-defeating humour was found to mediate the relationship between negative self-evaluative standards and lower self-esteem. Negative self-evaluative standards on the other hand, led to the use of less affiliative humour which resulted in lower self-esteem. To explain these findings, Kuiper and McHale (2009) stated that whilst affiliative humour provides exposure to positive social interactions which enhance enjoyment of life, self-defeating humour is likely to lead to social rejection. As with the majority of previous research discussed, there are a number of limitations associated with the study. First and foremost, the cross sectional nature of the study means that any causal inferences should be made with caution. As argued by Kuiper and McHale (2009) future research should consider including a longitudinal element and also a form of experimental manipulation. For example, positive or negative performance

feedback could be introduced to assess the mediating role of humour styles in a high or low stress condition. Moreover, in terms of generalisability there is a clear need for work with samples which do not consist solely of university students.

2.2.7. **Mediator variables in the relationship between humour styles and psychosocial adjustment.** Some studies have considered the role of potential mediator variables in the associations between humour styles and adjustment in an attempt to explain why these associations exist. Firstly, Cann and Etzel (2008) investigated the role of positive personality qualities in the relationships between the self-directed humour styles and stress, using self-report measures with 176 student participants. It was predicted that as individuals engage in adaptive forms of humour and avoid maladaptive forms they should establish a more positive mind set with greater feelings of happiness, hope and optimism. These positive personality qualities would then allow for a more positive outlook in the face of stress. Findings showed that the mediator model was supported. Higher use of self-enhancing humour and lower use of self-defeating humour were associated with happiness, hope and optimism and in turn with lower perceptions of stress. An alternative model in which humour was assumed to mediate the relationship between positive personality qualities and stress was not supported. It was suggested that more maladaptive forms of humour, particularly self-defeating, may work against the development of positive personality qualities which are associated with better coping. In a subsequent longitudinal study, where data collection took place at two time points eight weeks apart, the mediator model was again supported. Positive personality qualities were found to mediate the relationship between the self-directed humour styles at time one and stress and well-being at time two (Cann et al., 2010). As stated by Cann et al. (2010) these findings extend those of Cann and Etzel (2008) as they incorporate longitudinal data. Collecting longitudinal

data over a greater time period may now be beneficial to see if these relationships remain present.

Using self-report measures with a sample of 826 student participants from Canada, Dyck and Holtzman (2013) investigated whether the relationship between humour styles and well-being is mediated by perceived social support. As predicted, the relationship between the adaptive humour styles and well-being was found to be explained by greater levels of perceived social support. Conversely, the negative association between self-defeating humour and well-being was found to be mediated by lower levels of perceived support. As stated by Dyck and Holtzman (2013), these findings highlight the need to understand humour in an interpersonal context. Furthermore, whilst self-defeating humour may create emotional distance in relationships, affiliative humour may function as relationship-focused coping which can be used to manage and maintain relationships (Dyck & Holtzman, 2013). To support and extend these findings Zhao et al. (2014) also examined the role of social support as well as self-esteem on the relationship between humour styles and life satisfaction. Findings showed that both social support and self-esteem mediated the relationship between the adaptive humour styles and life satisfaction. Whilst these findings again highlight the importance of the adaptive humour styles in creating harmonious relationships, they also highlight the need to understand the relationship between humour and life satisfaction within both interpersonal and personal frameworks. Whilst the mediating effect of self-esteem may suggest that the adaptive humour styles are related to life satisfaction through enhancement and promotion of self-worth, the mediating effect of social support suggests that the adaptive humour styles may also be related to life satisfaction through the experience of supportive relationships with others (Zhao et al., 2014). As stated by Martin et al. (2003), the adaptive humour styles are

assumed to be tolerant, accepting and non-detrimental to others as well as being positively related to intimacy.

Lastly, in an attempt to explore the inconsistent findings for aggressive humour, Dyck and Holtzman (2013) also examined the potential moderating role of gender. Males have been found to engage in more aggressive humour than females (Martin et al., 2003). Humour of this nature may therefore be seen as more acceptable in males. However, in females where it is not seen as normative, it may lead to poorer adjustment (Crick, 1997). Findings demonstrated the need for further work to assess the moderating role of gender. Whilst for females only, higher levels of aggressive humour related to lower perceived social support, this result was not found to be statistically significant.

2.3 Humour in children

Before addressing studies which have attempted to apply the four humour styles approach to children, the following section will discuss both the development and measurement of humour in children. It will also consist of research which has investigated associations between children's humour and adjustment, but which does not take into account the fact that humour may be both adaptive and maladaptive.

2.3.1. The development of humour in children. As stated by Hoicka (2014), research on humour development is limited. It is believed that laughter in infants begins very early during the first year of life and typically occurs during interactions with caregivers (Mireault et al., 2015). As infants get older and progress to nursery school, laughing begins to occur increasingly in interactions with other children (Bainum, Lounsbury & Pollio, 1984) and also seems to be closely related to play (Bergen, 2002). Children's responses to humour may begin to be influenced by the social situation and the presence of others, for example other children's laughter (Chapman & Wright, 1976). For this age group, humour may be an ideal way for children to deal with topics which trigger

anxiety or which are considered taboo (Freud, 1960; McGhee, 1979). For example, McGhee (1979) proposed that humour in children often relates to challenges present at different developmental stages. Humour may therefore allow children to change these sorts of topics into something less intimidating (Wolfenstein, 1954).

The focus of this thesis is the use of humour in the junior school age group (8-11 years). McGhee (1974) believed that humour in children was related to cognitive development. His four stage model of humour development suggested that as children's age and cognitive abilities increased they were able to use and understand more complex types of humour. McGhee (1974) proposed that children reach the ultimate stage, referred to as 'multiple meanings', at around the age of seven years, the age they typically move from the infants to the juniors at UK primary schools. This stage was said to occur at the time children moved from the preoperational stage to the concrete operations stage of Piaget's theory of cognitive development (Piaget, 1970). This stage involves children developing a number of cognitive abilities such as linguistic abilities that allow them to understand the play on words and double meanings of riddles and jokes, as well as being able to recognise other's perspectives. Bariaud (1988) stated that as well as children becoming more competent in the use of jokes, they are also able to develop jokes that may contain hostile content. These cognitive developments therefore contribute to children's appreciation of more sophisticated forms of humour.

Martin (2007) questioned why differences might occur in children's likelihood of using humour. Firstly, studies have examined other abilities, behaviours or personality traits that are associated with children's sense of humour. For example, Carson, Skarpness, Schultz and McGhee (1986) found that children who were rated by their teachers as showing higher levels of humour imitation, were also found to have more advanced language development and were rated by their parents as being more outgoing

rather than withdrawn. Although the research is correlational, these findings could suggest that personality or language skills contribute to children's development of humour.

Loizu (2007) conducted a qualitative study investigating the role of humour by following two infants for a number of months. Clear differences in their involvement in humorous events were seen. Their humorous behaviours were also affected by reactions from caregivers, suggesting the important role parents may have to play in their children's developing uses of humour. Simons, McCluskey-Fawcett and Papini (1986) stated that infants' humour with parents may play a part in the development of attachment. It may therefore be important for parents to consider how to support and encourage their child's use of humour.

Overall, very little research has examined the role of the family in the development of humour. It is however a commonly held belief that comedians' choice of career may be influenced by their relationships with their parents (Greengross, Martin & Miller, 2012). Several studies have found associations between attachment styles and humour styles. Whilst the adaptive humour styles tended to be negatively related to anxious or avoidant attachment styles, the maladaptive humour styles tended to be positively related (Besser et al., 2012; Cann, Norman, Welbourne & Calhoun, 2008; Kazarian & Martin, 2004; Sar-el, Mikulincer & Doron, 2013). Considering that a person's attachment in adulthood may be affected by their attachment history (Hazan & Shaver, 1987), this seems important. Furthermore, as found by Saraglou and Scariot (2002) people with insecure attachment, as well as insecure attachment specifically to their mother were more likely to use self-defeating humour.

Besser et al. (2012) examined the mediating role of humour styles in the relationship between attachment styles and distress. The maladaptive humour styles were found to mediate the relationship between attachment avoidance and anxiety and higher

levels of distress. As Besser et al. (2012) stated, whilst individuals may attempt to use humour to regulate their feelings of distress, their choice of humour styles are unhelpful and may even lead to increased distress and strained relationships.

Giving further support to the view that family may be related to the development of different styles of humour, Kazarian and Martin (2006) found negative associations between aggressive humour and family adjustment. Similarly, Hampes (2013) found that whilst those who use the adaptive humour styles tend to recall positive experiences with their parents, those who use self-defeating humour tend to recall more negative experiences. Hampes (2013) does however acknowledge that the retrospective nature of the study may be a limitation. For example, it could be that an individual's current state of mind may influence how they think about their past. Moreover, it is not clear whether users of specific humour styles have actually had more positive or less negative experiences than others. Differences between scores could be due to the ability of some to frame their past experiences positively. Kazarian et al. (2010) investigated the relationship between humour styles and parental warmth and rejection. They found that whilst the adaptive humour styles were found to be positively related to the warmth of both mothers and fathers, the maladaptive humour styles were negatively related. For rejection from both mothers and fathers, the opposite relationship was found. Parental hostility and aggression were also negatively related to the adaptive humour styles and positively related to both maladaptive humour styles.

Manke (1998) put forward two hypotheses to attempt to explain the role of the family in children's humour development. Firstly, the modelling and reinforcement hypothesis suggests that children in a comfortable family environment model their parent's use of humour and in turn parents reinforce children's humour use through their positive responses. Conversely, the stress/coping hypothesis suggests that children from difficult

family environments may have enhanced humour development due to their need for coping methods. In terms of support for the stress/coping hypothesis it was found that greater humour in children was related to greater conflict in the home and to mothers who showed lower levels of affection and who left their children to solve problems without assistance. Humour may therefore be a way for children to gain attention and seek approval (McGhee, 1980).

In terms of the modelling and reinforcement hypothesis, students reporting higher humour initiation also reported their same sex parent using more humour during their childhood (McGhee, Bell & Duffey, 1986). These retrospective findings however should be treated with caution based on their reliance on memory (Hoetger, Hazen & Brank, 2015). Martin (2007) also highlighted the need for more work on the modelling/reinforcement hypothesis using methods which can control for the potential influence of genetic factors. Overall, the more recent findings by Kazarian et al. (2010) which suggest that the adaptive humour styles are related to parental warmth and the maladaptive to parental rejection, may lend support to both hypotheses. As stated by Kazarian et al. (2010) parents who are warm towards their children may model and reinforce the adaptive styles of humour. Parents who are cold or hostile on the other hand may fail to model the more adaptive humour styles and instead may reinforce more aggressive types of humour. In support of the stress/coping hypothesis, these children who lack the skills to use the adaptive humour styles may also resort to using self-defeating humour in an attempt to cope, but also to gain acceptance from their family and caregivers (Kazarian et al., 2010).

As found by Kazarian et al. (2010), self-enhancing humour was found to mediate the relationship between parental warmth and rejection and subjective happiness. Those who recalled higher parental warmth engaged in more self-enhancing humour, which in

turn predicted greater happiness. Those who recalled parental rejection on the other hand, engaged in less self-enhancing humour which led to lesser feelings of happiness. This suggests that the development of certain humour styles in childhood may in turn influence well-being in later life.

Turning lastly to consider genetic factors in the development of humour, studies using twins or a comparison of non-adopted and adopted siblings and self-report measures of humour have found results suggesting a significant role of genetic factors (Loehlin & Nichols, 1976; Manke, 1998). Conversely, the findings of some studies suggest that environmental factors, particularly shared environmental factors play a part in appreciation of humour (Nias & Wilson, 1977). Vernon et al. (2008a) investigated genetic and environmental contributions to individual differences in the four humour styles proposed by Martin et al. (2003) using a sample of 456 pairs of monozygotic and dizygotic twins from North America. Findings showed that the adaptive humour styles seemed to be more attributable to genetic and non-shared environmental factors whilst the maladaptive humour styles were more attributable to shared and non-shared environmental factors. The authors discussed that this may mean that maladaptive humour styles may be easier to tackle if they are not governed by genetic factors whilst it may be harder to increase people's use of adaptive humour styles. However, a later replication by Vernon, Martin, Schermer, Cherkas and Spector (2008) with a sample of 1968 pairs of monozygotic and dizygotic twins from the UK, found that all four humour styles were attributable to both genetic and non-shared environmental factors. Vernon et al. (2008b) suggested that the differing findings may be due to variations in sense of humour based on nationality. For example, they suggested that UK participants may have a greater tolerance to expressions of humour which Americans may consider to be aggressive.

2.3.2. Measuring humour in children. As with humour in adults, attempts have been made to measure children's humour using a variety of different methods. Firstly, humour production, appreciation and comprehension tasks have also been utilised with children (see Freiheit, Overholser & Lehnert, 1998; Masten, 1986). Although these sorts of tasks may be suitable particularly for younger children, there may still be a number of issues as previously discussed. For example, they may not truly represent the way humour is used in everyday life and they may be highly influenced by subjectivity or the personal preference of raters.

A number of self-report humour scales have also been adapted or created for use with children. For example, as well as utilising the Coping Humour Scale (CHS) with adolescents, Führ (2002) developed the Children's Coping Humour Strategy Survey to address the lack of a coping humour scale specifically for children. Compared to the Coping Humour Scale, better internal reliability was found for the new scale. Three factors were found to emerge, including using humour to cope, making fun of others and humour to boost the mood. Similarly, Goodenough and Ford (2005) utilised the child version of the Multidimensional Sense of Humour Scale (Dowling & Fain, 1999). In this case acceptable reliability was again found but only a two factor solution including coping with humour and humour creation was evident. As previously discussed Martin et al. (2003) proposed that four main styles of humour exist, as opposed to two or the three found to emerge by Führ (2002).

In addition to self-report scales, teacher, as well as peer reports have also been utilised (see Sherman, 1988; Sletta, Søbstad & Valås, 1995). Although teacher reports can be used to assess humour, it may be that teachers are unaware of certain behaviours. For example, Damico and Purkey (1978) investigated class clowns. Using teacher ratings, they found that those perceived to be class clowns were also perceived to be more unruly.

Similarly Fabrizi and Polio (1987) conducted a naturalistic observation of humorous behaviours in classrooms, finding that humorous events often occurred less frequently when teachers were in a position to react. Moreover, in some cases, children who used humour frequently were often reprimanded by their teachers. If teachers view humorous behaviours as disruptive, children may well begin to use it less in their presence. Adopting peer reports of children's humour on the other hand may have a number of advantages. For example, other children of the same age may be well placed to report on their peers humour due to the time they spend together in the school environment. Moreover, peer reports offer multiple informants and an insider perspective (Perry, Kusel & Perry, 1988). It is acknowledged nonetheless that it may be harder for peers to report on self-enhancing humour as compared to the remaining humour styles because it may not be as easily observable (Cann & Matson, 2014).

Lastly, qualitative approaches have also been taken to assess children's use of humour. For example, interviews were utilised as part of the process of developing a measure of coping humour for children (Führ, 2001). Similarly focus groups have also been used to assess children's understanding of humour (see Dowling, 2014). Although as stated by Dowling (2014) these qualitative approaches offer a rich insight into children's humour use, collecting data from larger numbers of participants using a qualitative approach would prove to be difficult.

2.3.3. Humour and psychosocial adjustment in children. Although, as discussed there has been an abundance of research examining the relationship between humour and psychosocial adjustment in adults, research exploring humour in children is lacking. A limited number of studies do however highlight important links. For example, Masten (1986) examined the relationship between humour and competence in 93 children aged 10-14. Humour was assessed using measures of children's humour appreciation,

comprehension and production. For the humour appreciation task, children were asked to rate the funniness of specially selected cartoon pictures whilst the researcher rated their expression of mirth. The children were then asked to explain the humour in the cartoon pictures for the comprehension task. For the production task, the children provided titles and captions to add to the cartoon pictures which were then scored by two judges. Competence was assessed using a combination of measures including teacher ratings of behavioural competence and peer assessment of interpersonal competence. Findings showed a relationship between humour and competence. Masten (1986) stated that better humour production, comprehension and greater mirth were associated with social and also academic competence. She believed that children with these humour abilities were viewed as more engaged by their teachers and also as more popular by their peers. Masten (1986) did however highlight that it cannot be known from her findings, whether a lack of humour abilities may stem from social isolation, or whether a lack of humour may in fact be an antecedent to such problems. Furthermore, she believed that peer rejection may affect a child's mood or outlook in a way that could reduce their likelihood of using humour. To explore this further, longitudinal data would be required. In terms of the methods adopted by Masten (1986) to measure humour, as previously discussed, measures of both appreciation and production may be dependent on the personal preference of the participants and the raters. Furthermore, although Masten (1986) also used ratings of mirth to measure appreciation, this may be a particularly subjective assessment.

Sherman (1988) argued that humour is a social competence which can facilitate social interaction. Using peer ratings of humour and social distance with 74 children aged 9; Sherman (1988) found that children rated as more humorous were also rated by their peers as less socially distant. This may suggest that an absence of humour could be a potential cause of social distance. These findings were later replicated by Warnars-

Kleverlann, Oppenheimer and Sherman (1996) who also included measures of funniness, play and work preferences and social status in their study. They also found that the rejected children scored lower on humour compared to the popular children. It should be noted however, that asking peers to report on both humour and social distance may also lead to the issue of shared method variance. For example, an association between humour and social distance may represent the degree to which a child who has negative feelings about one aspect of their peer may also tend to have similar feelings about another aspect of their peer. In addition, this could be confounded by general feelings about the target individuals within the peer group leading to a reputation bias.

In view of previous research such as Masten (1986) and Sherman (1988), Sletta et al. (1995) presented a theoretical model to analyse predictive relationships between humour, behavioural characteristics, peer acceptance and social competence. 183 children aged 10-15 completed questionnaires assessing humour and self-perceptions of social behaviour and also sociometric measures. 35 children aged 4-7 also completed a questionnaire during an interview with a researcher. In addition to this, teacher ratings of behaviour were completed, whilst participants aged fourteen and fifteen also completed peer ratings of social behaviour. Sletta et al. (1995) found that peer reports of humour predicted peer acceptance whilst children's perceptions of their own humour were also predictive of their perceived social competence. As associations were only found between variables being assessed using the same method, either peer or self-report, the issue of shared method variance could be raised. For example, if children view their social capabilities positively, they may also view their ability to use humour in the same light. It is also highlighted that longitudinal data would again be required to gain a more complete picture of the dynamics and to examine developmental changes across time. In addition, Sletta et al.'s (1995) findings suggest that teachers may not be the best assessors of

children's humour as their humour may be different to that which is appreciated by children. The use of peer reports however, were found to be consistent with self-assessments lending support to the idea that humorous children may be aware of their abilities. Moreover, the use of peer assessments of humour may be beneficial in further studies particularly with younger children who may overestimate their humour abilities (Sletta et al., 1995). In Sletta et al.'s (1995) study however, it is acknowledged that due to ethical issues associated with negative nominations, peer rejection could not be investigated.

Using self-report measures of humour, studies have also examined the function of children's humour as a coping strategy. Firstly, Freiheit et al. (1998) used measures of humour creativity, humour appreciation and the Coping Humour Scale (Martin & Lefcourt, 1983), alongside measures of depressive symptoms with 140 adolescents aged 12-18 years. The sample consisted of both high school pupils and psychiatric inpatients. In adolescents, having a sense of humour was found to be negatively related to depressed mood and also to having a negative view of oneself and the future. Freiheit et al. (1998) argued that the deliberate use of humour to deal with problems and emotional difficulties may be particularly effective in lessening depressive symptoms. This may also add further emphasis to the argument for the need to differentiate between different forms of humour. Furthermore, it was also found that both high school pupils and adolescent psychiatric inpatients were equally able to use humour. Freiheit et al. (1998) argued that this suggests that humour may be a stable personality trait, as its use did not seem to be affected by the higher levels of depression reported by the inpatients.

Führ (2002) also utilised the Coping Humour Scale and also the Children's Coping Humour Strategy Survey with 960 children aged 11-14 years. In terms of coping humour, evidence was found particularly in those aged twelve and above, suggesting that this could

be due to developmental changes or life experiences at this age. Whilst humour appeared

to be used by children as a conscious and deliberate way to tackle stress, it was stated that

further work was still needed to see if coping humour occurs below the age of 11 years.

Führ (2002) questioned however whether self-report could be used with a younger age

group, due to potential language limitations. Moreover, it should also be noted that

children may not use humour to deal with serious issues. Führ (2001) conducted an

interview study in Denmark with 57 children aged 12 – 16 years, which examined the form

and function of humour in adolescence. It was found that whilst humour may be a useful

coping tool for children, it may not be appropriate to deal with deep felt sorrow.

In a further study, Goodenough and Ford (2005) investigated coping humour in

hospitalised children using a child version of the Multidimensional Sense of Humour Scale

(Dowling & Fain, 1999). Goodenough and Ford's (2005) findings suggested that for

hospitalised children as young as 6 employing distraction strategies, humour could be used

as an effective way of dealing with pain related distress. However, as previously discussed

Martin et al. (2003) proposed that four main styles of humour exist. For Dowling and

Fain's (1999) measure, only a two factor solution was found and for Führ's (2002)

measure, a three factor solution.

2.3.4. Applying the humour styles approach to children. Erikson and Feldstein

(2007) investigated the psychometric properties of the HSQ with 94 adolescents aged 12-

15 years. Specifically, they examined the internal consistency and convergent validity of

the measure and compared the responses to the adult sample used by Martin et al. (2003).

They also investigated the relationships between humour styles, depressive symptoms, and

adjustment and also between humour styles, coping styles and defence strategies. As

previously discussed, there are several ways in which humour may function as a coping

strategy, for example by allowing people to make more positive cognitive appraisals in the

face of difficult events (Martin et al., 1993). Similarly, as previously stated, humour may act as a defence by unconsciously allowing an individual to deal with stress without being overcome by negative emotions (Lefcourt & Davidson-Katz, 1991).

In general, as predicted, whilst the adaptive humour styles tended to be positively related to more mature defense strategies and constructive approaches to coping, the opposite tended to be found for the maladaptive humour styles. In terms of adjustment and depression, both adaptive humour styles were found to be negatively related to depressive symptoms and positively related to adjustment. For self-defeating humour on the other hand the opposite was found, whilst aggressive humour was also found to be negatively related to adjustment. In addition, hierarchical logistic regression found that self-defeating humour was uniquely predictive of depressive symptoms even after defence strategies and coping styles were accounted for. As Erikson and Feldstein (2007) highlighted, this suggests that self-defeating humour may be particularly prevalent in this age group, perhaps as adolescents look for different ways to develop a strong peer network.

Mean scores for the four humour scales and intercorrelations between the scales were found to be similar to those found in adults. Unacceptable reliability coefficients however, were found for the maladaptive humour styles, which suggests that these findings should be treated with caution. Erikson and Feldstein (2007) proposed that this could mean that maladaptive humour styles begin to emerge later than the other forms. Considering that teasing behaviours can be observed in very young children however, this seems unlikely (Groch, 1974). Furthermore, it should be acknowledged that due to the study's reliance on self-report measures, the findings may be influenced by shared method variance. For example, if children view one aspect of their life negatively, they may be more likely to also respond negatively on the other measures.

With a sample of 94 Belgian high school students aged 16-18 years, Saroglou and Scariot (2002) administered a French version of the HSQ to examine the relationship between humour styles and school performance and motivation. Findings showed that although the negative correlations between the maladaptive humour styles and school performance were not significant, both maladaptive humour styles were found to correlate negatively with school motivation. These findings could suggest that humour styles may well play an important role in children's learning and experience of school. A measure of self-esteem was also administered alongside these measures. In support of similar studies, affiliative humour was found to be positively related to self-esteem whilst self-defeating humour was found to be negatively related.

Klein and Kuiper (2006) highlighted that the four humour styles model (Martin et al., 2003) had not yet been considered with regard to children. They suggested that humour is an important social competence which develops in childhood and that different styles of humour may have an important influence on children's peer relationships, which could ultimately impact on their overall adjustment. Firstly, they suggested that affiliative humour may be used by children to maintain their peer group identity, support and harmony. Affiliative humour is enjoyed and valued by others and its use can add to children's on-going popularity and acceptance and provide them with the opportunity to acquire a greater understanding of the types of humour which are deemed socially acceptable. Furthermore, as highlighted by Bergen (1998), humour increases in comfortable social settings, providing peer accepted children with further opportunities to become skilled in their use of adaptive humour. Klein and Kuiper (2006) suggested that self-enhancing humour can also be linked to positive social outcomes. They proposed that this humour style can be used to make children appear confident and self-assured, qualities which may be appealing to peers. Children may therefore gain a desirable position in their

peer group leading to increases in their feelings of self-worth and the opportunity to practice more prosocial behaviour.

In contrast to the adaptive humour styles, Klein and Kuiper (2006) believed that self-defeating humour can reflect an inner neediness and low self-esteem, which can be unappealing to others. They suggested that children using this sort of humour may have experienced rejection and victimisation and have learnt about humour through the jokes made by others at their expense. They may therefore take on board these jokes and use them in attempts to gain acceptance from others. Although aggressive humour may be used by some children to degrade their victims and gain the support of others, some children may use aggressive humour in more overt ways which are perceived negatively by their peers. As Klein and Kuiper (2006) highlighted, users of aggressive humour may have a limited ability to understand their peer group and therefore use highly detectable humour which exceeds the boundaries of what is considered acceptable. In the long term, these children who lack the ability to use more adaptive styles of humour may therefore be rejected by their peers.

Based on Klein and Kuiper's (2006) suggestions, Fox et al. (2013) adapted the HSQ to create the child HSQ. Over two studies the measure was administered to 1187 primary and secondary aged children. In the second of two studies, the measure was administered twice, one week apart to 536 children alongside measures of psychosocial adjustment. Findings showed a clear four factor structure and all subscales were found to have acceptable internal reliability for children aged eleven years and above. As expected, boys were found to use aggressive forms of humour significantly more than girls. In support of Martin et al.'s (2003) findings, significant associations were also found between the humour styles and psychosocial adjustment variables. For example, affiliative humour was found to be positively related to self-perceived social competence and self-worth. Self-

defeating humour on the other hand was found to be negatively related to self-perceived social competence and self-worth and positively related to both anxiety and depression.

Although the child HSQ (Fox et al. 2013) was found to be an appropriate measure of humour for secondary aged children above the age of 11, it was not found to be suitable for those below the age of eleven. Fox et al. (2013) suggested that a two factor structure may be a better reflection of how younger children use humour and that self-enhancing and self-defeating humour may develop at a later stage, most likely as they are more reliant on cognitive processes. In addition, Fox et al. (2013) questioned whether younger children are sufficiently aware of their own humour use. It was also recommended that peer reports of humour should be utilised with younger children as socially desirable responding may be more likely.

The humour styles questionnaire for younger children (HSQ-Y) was developed by James, Page and Fox (2012; see James & Fox, 2016b) in response to Fox et al. (2013) stating that a measure of humour styles was still needed for primary aged children. The HSQ-Y, which is based on both the adult (Martin et al., 2003) and child (Fox et al., 2013) measures, was found to successfully measure affiliative and aggressive humour in children aged 8-11. It was administered to 250 children alongside a measure of self-perceived social competence taken from Harter's (1985) self-perception profile for children. Results showed a positive association between affiliative humour and social competence. In the first instance, a sixteen item HSQ-Y containing eight items per subscale was piloted and then modified to include fourteen items based on reliability analyses. No negatively worded items were included due to previous research suggesting that younger children may not be able to comprehend negatively worded items (Marsh 1986). Items were measured on a four point response scale from 'not at all like me' to 'a lot like me'. This was thought to be more appropriate for younger children than the Fox et al. (2013) scale which ranged

from 'strongly disagree' to 'strongly agree'. A four point response scale as used by Fox et al. (2013) was chosen due to children's tendency to repeatedly opt for a neutral mid-point response should one be available (Borgers, Hox & Sikkel, 2004). Initially, only two humour styles were tested based on the suggestions of Fox et al. (2013), but, it was proposed that the use of qualitative methods may be useful for exploring the remaining humour styles in future work. For example Führ (2001) successfully used interviews to demonstrate the use of coping humour in children aged 12-16.

Dowling (2014) conducted focus groups with 58 children aged 7-12 years to investigate their understanding of humour. She stated that researchers should not make assumptions about how children experience humour and must aim to understand humour from children's viewpoint. Dowling (2014) found that school aged children used humour to form relationships with others and also to cope with a range of stressors associated with their relationships, home life and school. They were also able to give examples to support their use of humour to cheer themselves up and to provide motivation. The use of focus groups allowed for rich data to be gathered; however as Dowling (2014) stated there were also a number of limitations including the possibility of socially desirable answering.

As previously discussed James et al. (2012) proposed that a qualitative approach may be useful in exploring the remaining two humour styles with younger children. James and Fox (2014, 2016a) therefore conducted five semi structured paired interviews with children aged 8-11 years to investigate the use of self-enhancing and self-defeating humour in this age group. Use of thematic analysis resulted in the identification of three main themes, 'Humour for the benefit of the self', 'Laughing alone' and 'Humour at the expense of the self'. Overall, findings seemed to show individual differences in both children's understanding and awareness of self-enhancing and self-defeating humour, although a number of clear examples of their use seemed to be apparent. Notably, children

unanimously responded that they use humour when alone and not just with others. Conversely, whilst some children agreed strongly that humour can be used to boost mood and alleviate negative feelings even making reference to specific situations, others disagreed that humour can help. Findings for self-defeating humour were markedly more varied and less clear particularly in terms of children's understanding. Whilst evidence of awareness of this form of humour was recognised in a small number of participants, others seemed confused as to why humour would ever be used at the expense of the self. Similarly, evidence of incidences of self-defeating humour were more limited.

In support of self-defeating humour in this age group, children have been found to display maladaptive explanatory styles which include self-derogatory attributions often linked with depressive symptoms (Nolen-Hoeksema, Girgus & Seligman, 1991). What is less clear however is at what stage children begin to externalise these thoughts in attempts to make others laugh. Similarly, at a younger age it may be that children struggle to recognise self-defeating in both themselves and others. Likewise, for self-enhancing humour, it has long been theorised that children use humour for emotional mastery and as a way of dealing with various challenges imposed on them during socialisation (e.g. McGhee 1979). Research by Altshuler and Ruble (1983) showed age related increases in the ability to manage emotions in uncontrollable situations using more cognitive as opposed to behavioural strategies (e.g. cognitive distraction). They suggested that younger children are capable of recognising that thoughts can be manipulated and that with age, they come to learn how to use these strategies more effectively to manage their emotions.

Based on the paired interview findings, the HSQ-Y was adapted to include all four humour styles and administered alongside a measure of friendship quality (Bukowski, Hoza & Boivin, 1994) to 161 children aged 8-11 (James & Fox, 2014; James & Fox, 2016b). Although a four factor structure of the HSQ-Y was found, findings of the study

highlighted the need for additional work including the development of two new items on the self-defeating subscale, which was found to have lower reliability compared to the remaining subscales. Both maladaptive humour styles were found to be positively associated with conflict in friendship whilst self-enhancing humour was found to be negatively associated. Aggressive humour was also found to be negatively associated with closeness in friendship. The findings indicate that even for younger children, the humour styles seem to be associated with social adjustment. Further work however, is required to provide further validation for the HSQ-Y as a measure and also to allow for causal analysis.

To investigate prospective longitudinal relationships, Fox, Hunter and Jones (2016a) conducted a short-term longitudinal study to examine the associations between humour styles and psychosocial adjustment. 1234 children aged 11-13 years completed the Child HSQ alongside measures of psychosocial adjustment twice across the school year. Self and peer reports of peer victimisation were also collected at both time points (see Fox, Hunter & Jones, 2015). In terms of psychosocial adjustment, in cross-sectional analysis Fox et al. (2016a) found that whilst the adaptive humour styles correlated positively with self-esteem, they correlated negatively with loneliness and depression; the opposite was found for self-defeating humour. Over time, bi-directional relationships between humour styles and adjustment were found. Self-defeating humour at time one was found to predict an increase in loneliness and depression and a decrease in self-esteem at time two. Depressive symptoms also predicted an increase in the use of self-defeating humour over time. Furthermore, self-esteem predicted an increase in affiliative humour over time. Fox et al. (2016a) suggested that children may get caught in a vicious cycle when using this sort of humour with one problem exacerbating the other. How a child feels about

themselves may be reflected in their humour which in turn may reinforce and maintain negative cognitions about the self. As argued by Beck, Rush, Shaw and Emery (1979), negative core beliefs about the self can lead to depression. In the case of self-defeating humour, these beliefs may also be validated by the laugher of others. Moreover, the effects of self-defeating humour may also be similar to the effects of rumination which has also been linked to depression (Fox et al, 2016a). Although associations with aggressive humour were not found, Fox et al. (2016a) commented that this is the case with a number of studies, suggesting that negative effects are likely to be more long term. For example, the detrimental effects of using aggressive humour on social relationships may become apparent over a longer period of time; this could then impact on a child's well-being.

The relationships between humour styles and victimisation also provide further evidence of the importance of humour in children's peer relationships. For example, in cross sectional analysis Fox et al. (2015) found that all four humour styles were related to victimisation. Over time peer victimisation was associated with an increase in self-defeating humour and also a decrease in use of affiliative humour. Likewise, use of self-defeating humour was associated with increased victimisation whilst affiliative humour was associated with decreased victimisation. To explain these findings Fox et al. (2015) stated that victimised children may be deprived of opportunities to practice using the more adaptive humour and therefore resort to using self-defeating humour in an attempt to build relationships. Victims of bullying may also take on board the jokes used at their expense and use them to gain approval from others (Klein & Kuiper, 2006).

Using the longitudinal data on self-reported use of humour styles and also data on mutual friends, further analysis was completed by Hunter, Fox and Jones (2016) to investigate humour styles within friendship dyads. More specifically, they examined whether best friends are similar in their use of humour styles and whether one friend's

humour styles may influence their best friend's use of humour. Results showed that over time, dyads use of affiliative humour became correlated and that an adolescent's use of affiliative humour was positively associated with their best friend's later use of this style of humour. The findings suggest that affiliative humour has an important function to play in the friendships of early adolescents. For instance, it may also play an important role in reducing interpersonal tension as well as in enhancing relationships. For the remaining humour styles the same significant associations were not found. As Hunter et al. (2016) highlighted, it could be that the effects for these humour styles take longer to develop. Conversely, it may have been that friendships where maladaptive humour styles were used did not last and were therefore excluded from the analysis.

2.3.5. Humour types. Whilst previous work has investigated associations between different humour styles and psychosocial adjustment, it is acknowledged that children may use a combination of different styles of humour. It could therefore be that humour styles in children are differentially related to adjustment depending on the combination of humour styles used. Galloway (2010) stated that using simple correlations cannot really provide information about individual differences in humour styles profiles. He believed that to advance understanding, focus should shift to how individuals use a combination of different styles of humour. Using cluster analysis and a sample of 318, consisting of both Australian students and members of the community, Galloway (2010) identified four clusters of people – cluster 1, those who are above average on all humour styles, cluster 2, those who are below average on all humour styles, cluster 3, those who are above average on the adaptive humour styles and below average on the maladaptive humour styles and lastly cluster 4, those who are above average on maladaptive humour styles and below average on the adaptive humour styles. Whilst the number of males was found to be greater in clusters 1 and 4, the number of females was found to be greater in clusters 2 and 3.

Moreover, whilst those in cluster 3 were found to have above average self-esteem, those in cluster 4 were found to have below average self-esteem. Galloway stated that further research was needed to see if the four clusters would be replicated in further studies.

To extend Galloway's research, Leist and Müller (2013) also examined what different combinations of humour styles or humour types exist and also how they relate to well-being. They identified three humour types using a convenience sample of 348 German individuals. Firstly, humour endorsers who scored above average on all four humour styles, secondly humour deniers who scored below average on all four humour styles, particularly self-enhancing and thirdly, self-enhancers who scored above average on the adaptive humour styles, particularly self-enhancing and below average on the maladaptive humour styles. These humour types were found to be differentially related to well-being variables. Notably the self-enhancers were found to score above average on self-esteem, whilst the humour deniers were found to score below average on self-esteem. Similarly, the humour deniers also scored substantially lower on life satisfaction. As Leist and Müller (2013) stated, although the relationships between humour types and well-being are easy to interpret, their findings should be treated with caution as their sample consisted mainly of females. To a large extent however, Leist and Müller's (2013) findings support those of Galloway (2010) and emphasise that people use particular combinations of different humour styles.

In view of research by Galloway (2010) and Leist and Müller (2013), Fox, Hunter and Jones (2016b) identified the presence of distinctive humour types in secondary aged children, using the child HSQ and measures of psychosocial adjustment. Through the use of cluster analysis, the four humour types identified included adaptive humourists (high on the adaptive humour styles, low on the maladaptive humour styles), self-defeaters (scored high on self-defeating, low on the remaining three), humour endorsers (high on all four

humour styles) and interpersonal humourists (high on affiliative and aggressive, low on self-focused humour styles). Whilst males were more likely to be humour endorsers, females were more likely to be adaptive humourists. Fox et al. (2016b) also found that different combinations of humour styles were differentially associated with psychosocial adjustment. For example, compared to the other three humour types, adaptive humourists scored highest on self-esteem. Moreover, the self-defeaters scored highest in terms of maladjustment. Importantly, this suggests that when self-defeating humour is used alongside the other humour styles, it may not be harmful. As Fox et al. (2016b) stated, identifying humour types extends knowledge beyond the examination of simple correlations, as it is taken into account that people use a combination of different styles of humour. Moreover, examining humour types which may be a combination of both adaptive and maladaptive humour styles, may to some extent guard against the potential for shared method variance

2.4. Conclusion

In summary, the literature reviewed demonstrates the value of the four humour styles approach in distinguishing between adaptive and potentially maladaptive styles of humour. It also highlights many important associations between different styles of humour and adjustment variables. In view of this, the studies in the subsequent chapters aim to address the clear lack of research which has considered the four humour styles in relation to primary aged children. Although the creation of a measure of humour styles suitable for older children has allowed for these associations to be explored in the secondary age group, it may be that younger children are able to use all four humour styles. The work undertaken for this thesis therefore involved the validation of a measure of humour styles suitable for younger children (aged 8-11), to explore these associations in the primary age

group. Moreover, due to the lack of longitudinal research exploring associations between humour styles and adjustment over time, a longitudinal study was also conducted. In terms of assessing children's understanding of different humour styles, studies with adults have used experimental approaches to investigate perceptions of humour. Whilst in the following chapter this approach was adopted for use with children, it also seemed important to consider how children's understanding and awareness of the potential outcomes of using different styles of humour could be raised. The final study in this thesis therefore involved the evaluation of a humour styles intervention for children.

The next chapter will introduce the first research study where an experimental approach was adopted to investigate children's perceptions of the four styles of humour. This study aimed to provide insight on children's understanding and knowledge of the outcomes of using humour in different ways.

3. Children's perceptions of others' humour

3.1. Introduction

The focus of the current chapter is to outline the first study conducted as part of this thesis. The main aim of the study was to investigate junior aged (9-11 years) children's perceptions and reactions to the four humour styles proposed by Martin et al. (2003). The literature most relevant to this study can be found in section 2.2.4.1. This section describes several studies which have adopted an experimental approach to investigate perceptions of and reactions to different styles of humour, primarily using student samples. For example, using written descriptions of an individual using each of the four humour styles, studies found those described as using the maladaptive humour styles were rated more negatively, whereas those using the adaptive humour styles were rated more positively (Zeigler-Hill et al., 2013). As found by Kuiper and Leite (2010), a number of positive personality attributes were assigned to those using the adaptive humour styles. Furthermore, it was found that not only would participants be more likely to continue an interaction with an individual using the adaptive humour styles, they would also have more positive feelings about themselves in response to these humour styles (Kuiper et al., 2010). Overall these findings suggest that humour may serve as an interpersonal signal and that the styles of humour an individual uses will be associated with how they are perceived by others. The maladaptive humour styles may therefore communicate very different information to others about an individual compared to the adaptive humour styles (Zeigler-Hill et al., 2013). As the samples used in previous studies consist predominantly of young adults, it would be beneficial to investigate if these findings can also be replicated with children.

As highlighted by Klein and Kuiper (2006) the sort of approach used in the above studies is one which could be easily adapted for use with even young children. Firstly it

offers an alternative to relying solely on self-report methods or even peer reports. As previously discussed, Fox et al. (2013) raised concerns about the use of self-report with younger children, particularly in terms of the maladaptive humour styles and children's awareness of their own use of humour. Secondly, it allows for more to be known about younger children's knowledge and understanding of different humour styles. For example, little is known about the age at which children might be able to recognise that whilst positive uses of humour may lead to positive outcomes, more negative uses may be related to less desirable outcomes. As found by James and Fox (2016a), individual differences were evident in younger children's understanding of the self-focused humour styles. Using this approach would allow for children's reactions to another child using each of the four humour styles to be investigated. Knowledge of children's understanding of different humour styles may be useful in finding ways to encourage the use of adaptive, over maladaptive forms of humour. This study therefore involved adopting an experimental approach to assess children's perceptions of a written description of a boy or girl using one of the four styles of humour. As found by Martin et al. (2003), males may use the maladaptive humour styles more compared to females which could lead to differences in the way these humour styles are perceived by others. In this study participants were recruited from school years five and six (ages 9-11 years) because it was believed they would require less assistance in reading the descriptions independently. It was hypothesised that children would rate those using the adaptive humour styles more positively than those using the maladaptive humour styles.

3.2. Method

3.2.1. Participants. 357 children from 4 large primary schools in England were recruited. Participants were aged 9-11 years with a mean age of 10.08 years (SD = .70),

were in school years 5 and 6 and the sample consisted of 176 males and 181 females. Parental consent was gained using the opt- out method.

3.2.2. Materials. Eight short vignettes (see Appendix 3.1) based on the statements used in the Reactions to Humorous Comments Inventory (Kuiper et al., 2010), were developed by the researchers to present either a male or female child using one of the four humour styles proposed by Martin et al. (2003). It was considered that the use of vignettes would seem more realistic and be more appropriate for younger children. The same neutral information describing the child was included in each vignette with only the information relating to humour varying depending on the humour style being described. To make the vignettes seem genuine to participants, they were presented in the questionnaire as if they were screen shots of profiles from a children's website. They describe children applying to take part in a children's television game show.

A questionnaire was used to assess participants' perceptions of the children described in the vignettes. The first three questions asked children how much they would like to 'work with', 'play with' and be 'friends with' the child in the vignette and were based on Kuiper et al.'s (2010) question of how likely participants were to continue interacting with the friend described. For the current study, a four point response scale consisting of 1 'not at all', 2 'not much', 3 'a bit' and 4 'a lot' was used for each question. A four point response scale was implemented to avoid the potential tendency for younger children to opt for a neutral mid-point response should one be available (Borgers et al., 2004). The fourth question asked children how popular they believed the child in the vignette would be on a four point response scale consisting of 1 'not at all popular', 2 'not popular', 3 'a bit popular' and 4 'very popular'. A further question again based on the Reactions to Humorous Comments Inventory (Kuiper et al., 2010) assessed how the child

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in the vignette would make the participant feel about themselves on a scale from 1 'very bad', 2 'bad', 3 'good' to 4 'very good'.

In addition to single item questions, a semantic differentiation scale adapted from the PANAS (Watson, Clark & Tellegen, 1988) was used to further assess perceptions of the child in the vignette. In their study of personality impressions associated with different styles of humour, Kuiper and Leite (2010) asked participants to provide ratings on several personality attributes. In the current study, participants were presented with eight pairs of words and were required to indicate on a scale from one to five where in their opinion, the child would fall on the scale between each of the eight pairs of words for example, unfriendly-friendly, boring-fun and mean-caring (see Appendix 3.1). A higher score on the scale indicated a more positive rating. A mean score was then calculated. The subscale was found to have acceptable reliability being above the .70 level considered satisfactory (α =.90). A final question provided a space for children to write a sentence or two to explain their reasons for the answers they had given. This was given to gain a greater understanding of children's awareness and comprehension of the different styles of humour.

3.2.3. Design. A 2 (gender of humourist) x 2 (gender of participant) x 4 (humour style) fully unrelated design was used to ensure that participants were blind to the aims of the study. Participants were randomly allocated to conditions. To ensure this was the case an equal number of each of the eight questionnaires were thoroughly mixed prior to data collection.

3.2.4. Procedure. Ethical approval was gained from the university ethics committee (see Appendix 3.2). Following the development of materials, recruitment of participants was embarked upon. Prior to approaching schools, a letter and consent form thoroughly detailing the research requirements (see Appendix 3.3), the researcher's

intentions and the importance of the study was designed with the intention of gaining head teachers' co-operation. In the weeks preceding the research, the letter and consent form were emailed to a number of primary schools. Agreement to take part was received from four schools by email and meetings with head teachers or deputy head teachers to discuss procedures and sign consent forms were set up.

Parental consent was gained using an opt-out method, as the research was not considered to be sensitive and data would be collected on a whole class basis. Letters including consent forms were designed informing parents and guardians of all aspects of the research (see Appendix 3.4). This included what would be asked of their children and implications of the study. Letters were sent out by the schools around one week prior to data collection. Any forms returned to the schools were obtained by the researcher and it was ensured by the class teachers that children who had been opted out of the research did not participate or spent the session in another classroom.

During sessions of data collection, the researcher used a standardised preamble to ensure instructions were delivered to children consistently on each occasion (see Appendix 3.5). The process of data collection required approximately 15-20 minutes with classes requiring less assistance completing the questionnaire at a quicker pace. The topic of the research and what taking part would entail was explained. Children were then reminded of the letter sent home to their parents, ensuring they were aware that they had given their permission for them to take part. It was stressed to the children that participation was still their choice and that it was acceptable for them to withdraw at any point. Confidentiality was emphasised, however, participants were also informed that a member staff may be contacted if they were to write extra information on the questionnaires that raised concerns regarding safety.

After the children had been encouraged to fill out their details they were then asked to silently read the vignette described to them as a 'description of a child' without reference to names. The children were then talked through each of the following questions and semantic differentiation scale to ensure they were all at the same point. When the questions had been completed the children were given time to write their sentence explaining their reasons for their answers, but again encouraged not to share their thoughts with classmates.

When the questionnaires had been collected in the children were fully debriefed. This involved reassuring participants again of confidentiality and explaining to them the aims of the research. The children were asked if any of them had realised that other children had different vignettes to them and if they had guessed that the descriptions were fictitious. The children seemed unaware of this and were unconcerned by the mild deception. The four different vignettes/types of humour were briefly outlined in a simple manner and it was explained to participants that their answers would help to answer questions like 'if people who find it easy to make people laugh tend to be popular' and to see if people feel differently when others use humour in different ways. At this point, the children were also encouraged to ask any questions and talk to a teacher about any concerns they might have. Finally, the children were thanked for their participation.

3.3. Results

Prior to data analysis, the data were screened and relevant assumptions were checked (see Appendix 3.6 for procedure used to screen the data and to check the assumptions).

3.3.1. MANOVA. A 2 (gender of humourist) x 2 (gender of participant) x 4 (humour style of humourist) MANOVA was carried out taking into account all six

dependent variables; see Table 3.1 for means (and SDs) (see Appendix 3.7 for MANOVA summary table).

3.3.1.1. Play with. A significant main effect of gender of participant was found, $F(1,288) = 7.11$, $p < .01$, $\eta^2 p = .02$ with females wanting to play with the humourists significantly more than males. A significant main effect of humour style was also found, $F(3,288) = 11.64$, $p < .001$, $\eta^2 p = .11$ with post hoc tests revealing that participants would like to play with humourists using aggressive humour significantly less than all other remaining humour styles (ps < .001). This was qualified by a significant two-way interaction between humour style and gender of the humourist, $F(3,288) = 3.82$, $p < .01$, $\eta^2 p = .04$. Follow-up analyses identified a significant difference between male and female humourists for self-defeating humour, $F(1,288) = 8.97$, $p < .01$, $\eta^2 p = .03$ with participants wanting to play with girls using self-defeating humour less than boys using self-defeating humour (see Figure 3.1).

Figure 3.1. Mean play with ratings for male and female humourists for each humour style

3.3.1.2. Work with. A significant main effect of humour style was found, $F(3,288) = 5.81$, $p < .001$, $\eta^2 p = .06$, with post hoc tests revealing that participants would like to

work with humourists using aggressive humour significantly less than those using affiliative ($p < .01$) and self-enhancing humour ($p < .001$). A significant two-way interaction between humour style and gender of participant was also found $F(3,288) = 2.81$, $p < .05$, ŋ²p $= .03$ with follow-up analyses identifying that these differences were significant for female participants only, $F(3,288) = 7.12$, $p <.001$, ŋ²p $= .07$. A significant difference between males and females for self-enhancing humour was also found $F(1,288) = 7.94$, $p < .01$, ŋ²p $= .03$ with females wanting to work with humourists using self-enhancing humour significantly more than males (see Figure 3.2).

Figure 3.2. Mean work with ratings for male and female participants for each humour style

3.3.1.3. Friends with. A significant main effect of gender of participant was found, $F(1,288) = 5.03$, $p < .05$, ŋ²p $= .02$ with females wanting to be friends with the humourists significantly more than males. A significant main effect of humour style was also found, $F(,288) = 16.97$, $p < .001$, ŋ²p $= .15$, with post hoc tests demonstrating that participants would like to be friends with a humourist using aggressive humour significantly less than all other styles of humour (ps $< .001$). No interaction effects were found (see Figure 3.3).

Figure 3.3. Mean friends with ratings for male and female humourists for each humour style

3.3.1.4. Popularity. A significant main effect of humour style was found, $F(3,288)$ = 8.50, $p < .001$, $\eta^2 p$ = .08, with post hoc tests revealing that participants rated humourists using affiliative humour as significantly more popular than those using aggressive, self-defeating (ps < .001) and self-enhancing humour ($p < .01$) . A significant two-way interaction between humour style and gender of humourist was also discovered $F(3,288)$ = 3.82, $p < .01$, $\eta^2 p$ = .04 with follow-up analyses identifying that these differences were significant for female humourists only $F(3,288) = 10.23$, $p < .001$, $\eta^2 p$ = .0.10. A significant difference between male and female humourists for aggressive humour was also found $F(1,288) = 7.16$, $p < .01$, $\eta^2 p$ = .02 with participants rating females using aggressive humour as significantly less popular than males using aggressive humour (see Figure 3.4).

Figure 3.4. Mean perceived popularity for male and female humourists for each humour style

3.3.1.5. Feel like. A significant main effect of humour style was found $F(3,288) = 23.42$, $p < .001$, $\eta^2p = .20$ with post hoc tests revealing that participants believed that aggressive humour would make them feel significantly less good than all of the remaining styles of humour (ps < .001), whilst self-enhancing humour would make them feel significantly better about themselves than affiliative and self-defeating humour (ps < .05). No significant interaction effects were found (see Figure 3.5).

Figure 3.5. Mean feelings about self for male and female humourists for each humour style

3.3.1.6. Overall Perceptions. A significant main effect of humour style was found $F(3,288) = 31.28$, $p <. 001$, $\eta^2 p = .25$ with post hoc tests revealing that participants perceived humourists using aggressive humour more negatively than those using the remaining humour styles ($ps < .001$). No significant interaction effects were found (see Figure 3.6).

Figure 3.6. Mean perceived overall perceptions for male and female humourists for each humour style

3.3.2. ANOVA. A mixed ANOVA was conducted to examine the difference between the 'play with' and 'work with' variables depending on which of the four humour styles was presented. A significant main effect of play/work with was found, $F(1,347) = 27.82$, $p < .001$, $\eta^2 p = .07$ with participants wanting to play with the humourists more than work with them. A significant main effect of humour style was also found $F(3,347) = 12.84$, $p < .001$, $\eta^2 p = .10$ with post hoc tests revealing that participants would like to play and work with humourists using aggressive humour significantly less than affiliative, self-enhancing ($ps < .001$) and self-defeating humour ($p < .01$). A two-way interaction effect approaching significance between play/work with and humour style was found, $F(3,347) =$

2.51, $p = .06$, $\eta^2p = .02$; follow-up analysis identified a significant difference between

play with and work with for affiliative, $F(1,347) = 16.13$, $p < .001$, $\eta^2p = .04$ and self-

defeating humour , $F(1,347) = 16.13$, $p < .001$, $\eta^2p = .04$ with participants wanting to play

with humourists using affiliative or self-defeating significantly more than they would want

to work with them (see Figure 3.7).

Figure 3.7. Mean work and play with ratings for humourists for each humour style

Table 3.1

Means (and SDs) for humour style and gender of humourist and gender of participant for all subscales

	Play	Work	Friends	Popularity	Feel like	Perceptions	F (df)
Male PP							**Play**
Aff Male	2.63 (1.07)	2.42 (1.02)	2.79 (1.13)	2.47 (.84)	2.84 (.96)	3.79 (.88)	H *F*(3,288) = 11.64***
Female	2.87 (.92)	2.67 (.98)	3.00 (1.07)	2.93 (.88)	3.20 (.41)	3.97 (.95)	GH *F*(1,288) = .54
Overall	2.74 (.99)	2.53 (.99)	2.88 (1.09)	2.68 (.88)	3.00 (.78)	3.87 (.90)	GP *F*(1,288) = 7.11**
Agg Male	2.08 (.88)	2.04 (.81)	2.08 (1.14)	2.21 (.93)	2.25 (.90)	2.66 (1.04)	H*GH *F*(3,288) = 3.81*
Female	2.05 (.70)	2.26 (.87)	2.05 (.91)	1.74 (.81)	2.05 (.91)	2.56 (1.03)	H*GP *F*(3,288) = .45
Overall	2.07 (.80)	2.14 (.83)	2.07 (1.03)	2.00 (.90)	2.16 (.90)	2.62 (1.03)	GH*GP *F*(1,288) = 3.39
SEn Male	2.94 (.68)	2.31 (.95)	3.06 (.93)	2.06 (1.00)	3.19 (.65)	2.60 (.67)	H*GH*GP *F*(3,288) = 1.15
Female	2.61 (.70)	2.50 (.92)	2.61 (1.04)	2.56 (.71)	3.11 (.58)	4.03 (.77)	**Work**
Overall	2.76 (.70)	2.41 (.92)[h]	2.82 (1.00)	2.32 (.88)	3.15 (.61)	3.83 (.75)	H *F*(3,288) = 5.81**
SD Male	3.13 (.62)	2.56 (1.09)	2.94 (.85)	2.00 (.89)	3.25 (.68)	3.95 (.64)	GH *F*(1,288) = .36
Female	2.29 (96)	2.48 (.93)	2.62 (.92)	2.24 (.89)	2.81 (.60)	3.75 (.77)	GP *F*(1,288) = .49
Overall	2.65 (.92)	2.51 (.99)	2.76 (.89)	2.13 (.89)	3.00 (.67)	3.84 (.71)	H*GH *F*(3,288) = 1.32
Tot Male	2.63 (.93)	2.31 (.96)	2.65 (1.10)	2.20 (.91)	2.81 (.91)	3.42 (1.00)	H*GP *F*(3,288) = 2.81*
Tot Female	2.42 (.86)	2.47 (.91)	2.55 (1.01)	2.33 (.91)	2.77 (.79)	3.55 (1.05)	GH*GP *F*(1,288) = .57

Tot Overall	2.53 (.90)[a]	2.39 (.94)	2.60 (1.05)[i]	2.26 (.91)	2.79 (.85)	3.49 (1.02)	H*GH*GP $F(3,288) = .34$
Female PP							**Friends**
Aff Male	2.92 (.83)	2.58 (.93)	2.96 (.91)	2.63 (.82)	2.87 (.61)	3.89 (.78)	H $F(3,288) = 16.97***$
Female	3.21 (.72)	2.58 (.88)	3.17 (.96)	2.75 (.85)	2.79 (.93)	3.65 (.95)	GH $F(1,288) = .15$
Overall	3.06 (.78)	2.58 (.90)	3.06 (.93)	2.69 (.83)	2.83 (.78)	3.77 (.87)	GP $F(1,288) = 5.03*$
Agg Male	2.45 (1.04)	2.00 (.77)	2.36 (1.12)	2.45 (1.13)	2.54 (1.03)	3.01 (1.29)	H*GH $F(3,288) = .75$
Female	2.31 (.79)	2.06 (.77)	1.94 (.85)	1.81 (.66)	1.94 (.57)	2.41 (.97)	H*GP $F(3,288) = 1.13$
Overall	2.37 (.88)	2.04 (.81)	2.11 (.97)	2.07 (.92)	2.18 (.83)	2.65 (1.13)	GH*GP $F(1,288) = 1.02$
SEn Male	2.80 (.83)	2.80 (.83)	3.25 (.64)	2.20 (.83)	3.10 (.55)	3.82 (.63)	H*GH*GP $F(3,288) = 1.44$
Female	3.36 (.64)	3.16 (.62)	3.56 (.51)	2.44 (.72)	3.36 (.49)	4.16 (.58)	**Popularity**
Overall	3.11 (.78)	3.00 (.74)[h]	3.42 (.58)	2.22 (.77)	3.24 (.53)	4.01 (.62)	H $F(3,288) = 8.50***$
SD Male	2.91 (.42)	2.57 (.95)	2.83 (.58)	2.30 (.70)	2.70 (.70)	3.48 (.70)	GH $F(1,288) = .00$
Female	2.62 (.77)	2.08 (.95)	3.00 (.71)	2.08 (.76)	2.69 (.63)	3.41 (.87)	GP $F(1,288) = .11$
Overall	2.81 (.58)	2.39 (.96)	2.89 (.62)	2.22 (.72)	2.69 (.67)	3.45 (.75)	H*GH $F(3,288) = 3.82*$
Tot Male	2.82 (.77)	2.55 (.91)	2.91 (.82)	2.40 (.84)	2.83 (.71)	3.63 (.86)	H*GP $F(3,288) = .30$
Tot Female	2.97 (.82)	2.58 (.90)	2.01 (.96)	2.28 (.82)	2.78 (.85)	3.52 (1.04)	GH*GP $F(1,288) = 3.26$
Tot Overall	2.90 (.80)[a]	2.56 (.90)	2.96 (.89)[i]	2.34 (.83)	2.81 (.78)	3.57 (.95)	H*GH*GP $F(3,288) = .11$
All PP							**Feel like**
Aff Male	2.79 (.94)	2.51 (.96)	2.88 (1.00)	2.56 (.82)	3.86 (.77)	3.85 (.82)	H $F(3,288) = 23.42***$
Female	3.08 (.81)	2.62 (.91)	3.10 (.99)	2.82 (.85)	2.95 (.79)	3.77 (.95)	GH $F(1,288) = 1.35$

	Overall	2.93 (.89)^b	2.56 (.93)^f	2.99 (1.00)^j	2.68 (.84)^{mno}	2.90 (.78)^{qt}	3.81 (.88)^v	GP $F(1,288) = 1.07$
Agg	Male	2.20 (.93)	2.03 (.79)	2.17 (1.12)	2.29 (.99)^p	2.34 (.94)	2.77 (1.12)	H*GH $F(3,288) = 2.26$
	Female	2.17 (.75)	2.17 (.82)	2.00 (.87)	1.77 (.73)^p	2.00 (.77)	2.49 (.99)	H*GP $F(3,288) = 1.48$
	Overall	2.19 (.84)^{bcd}	2.10 (.80)^{fg}	2.09 (1.00)^{jkl}	2.03 (.90)^m	2.17 (.87)^{qrs}	2.63 (1.06)^{vwx}	GH*GP $F(1,288) = .01$
SEn	Male	2.86 (.76)	2.58 (.91)	3.17 (.77)	2.14 (.90)	3.14 (.59)	3.73 (.65)	H*GH*GP $F(3,288) = 1.92$
	Female	3.05 (.75)	2.88 (.82)	3.16 (.90)	2.37 (.72)	3.26 (.54)	4.11 (.66)	**Perceptions**
	Overall	2.96 (.76)^c	2.75 (.87)^g	3.16 (.84)^k	2.27 (.81)^n	3.20 (.56)^{rtu}	3.93 (.68)^w	H $F(3,288) = 31.28$***
SD	Male	3.00 (.51)^e	2.56 (.99)	2.87 (.70)	2.18 (.79)	2.92 (.74)	3.67 (.71)	GH $F(1,288) = .12$
	Female	2.41 (.89)^e	2.32 (.94)	2.76 (.85)	2.18 (.83)	2.76 (.61)	3.62 (.81)	GP $F(1,288) = .34$
	Overall	2.73 (.77)^d	2.45 (.97)	2.82 (.77)^l	2.18 (.80)^o	2.85 (.68)^{su}	3.65 (.75)^x	H*GH $F(3,288) = 2.39$
Tot	Male	2.73 (.85)	2.43 (.94)	2.78 (.97)	2.30 (.88)	2.82 (.82)	3.53 (.93)	H*GP $F(3,288) = 1.68$
Tot	Female	2.71 (.88)	2.52 (.91)	2.79 (.99)	2.30 (.86)	2.77 (.82)	3.54 (1.04)	GH*GP $F(1,288) = 1.18$
Tot	Overall	2.72 (.87)	2.48 (.92)	2.79 (.99)	2.30 (.87)	2.80 (.81)	3.53 (.99)	H*GH*GP $F(3,288) = .54$

*$p < .05$, **$p < .01$, ***$p < .001$, $n = 148$ males, 156 females, Means in a row or column sharing a superscript are significantly different, Aff is affiliative, Agg is aggressive,
SEn is self-enhancing, Sd is self-defeating, Tot is total, H is humourist, G is gender, P is participant

3.3.3. Qualitative data. Due to the poor quality of the data, it was decided that the sentences written by the children to justify their choices could not be analysed. This was because many of the answers the children gave were very short or consisted of only individual words. In addition, the majority of answers just stated an opinion of the child or summarised the vignette and failed to provide an explanation of why they had made the judgements they had (see Appendix 3.8 for a short summary of the data).

3.4. Discussion

To our knowledge this is the first study to investigate younger children's perceptions of the four humour styles proposed by Martin et al. (2003). In general, findings were supportive of studies carried out with adults and adolescents, providing evidence for Zeigler-Hill et al.'s (2013) implicit theory of humour and highlighting both the positive effects of adaptive forms of humour and the detrimental effects of maladaptive styles of humour.

In terms of children's 'overall perceptions' of the humourists, they rated those using aggressive humour significantly more negatively than those using the other styles of humour. These findings are in line with those of Kuiper and Leite (2010) who found that whilst maladaptive humour had strong detrimental effects on impressions formed by others, the adaptive humour styles enhanced personality impressions. Moreover, Zeigler-Hill et al. (2013) stated that aggressive humour may act as an indicator of other aggressive qualities. In the current study, perceptions of self-defeating humour were not found to be significantly more negative. Kuiper et al. (2010) also found the negative effects of self-defeating humour to be less predominant than those of aggressive humour. They implied that this may be due to its self-focused as opposed to other-focused nature. Participants' 'overall perceptions' were not found to be affected by their gender or the gender of the humourist, suggesting that aggressive humour may be viewed just as negatively in males

and females. Although many of the previous experimental studies with adults did not examine gender, Cann and Matson (2014) suggested that males may view aggressive humour as more reflective of a good sense of humour. The current finding however, suggests that males would not view aggressive humour more positively than females.

Findings also indicated that participants would like to play with children using aggressive humour significantly less than those using all of the remaining styles of humour. Children may be particularly cautious of playing with others using aggressive humour as they fear that the humour could be used at their expense. Klein and Kuiper (2006) for example, stated that aggressive humour can be used by indirect bullies to exclude children from the peer group and diminish their status. On the other hand, less socially skilled bullies may use aggressive humour in a less sophisticated way which may jeopardise their own status within the peer group. Further analysis showed that participants would like to play with a female using self-defeating humour significantly less than a male using self-defeating humour. This seems to indicate that self-defeating humour may be perceived more negatively in girls. Martin et al. (2003) found that males tend to engage in more self-defeating humour than females. Its frequency in males may therefore mean that it has begun to be viewed as more acceptable. For females on the other hand, self-defeating humour may have more negative outcomes perhaps due to the expectation that females do not tend to display this kind of humour.

As well as wanting to play with users of aggressive humour less, findings also showed that participants would like to work with them less than those using the adaptive forms of humour. Aggression has previously been found to have disruptive effects in task orientated groups (Baysinger, Scherer & LeBreton, 2014). Regular use of aggressive humour in a classroom environment may therefore impair children's learning through their reluctance to work together. Conversely, children's appropriate use of adaptive humour

styles may enhance learning through their willingness to work together. In general, it seems that the consequences of using different forms of humour may extend considerably further than social relationships. Further analysis showed that the significant effect of humour style was significant for female participants only, suggesting that boys and girls may favour different qualities in workmates. For girls it seems the humour style of a work mate is more important compared to boys. Furthermore, analysis showed that females would like to work with children using self-enhancing humour significantly more than males would, suggesting that they find self-enhancing humour particularly appealing in workmates. In a situation where a task is demanding or challenging for example, a workmate's use of self-enhancing humour as a coping strategy may be beneficial to others and to the completion of the task.

Separate analysis on the 'play with' and 'work with' variables showed that children would like to play with children using affiliative and self-defeating humour significantly more than they would like to work with them. Fabrizi and Polio (1987) found that teachers can rate children who use humour as disruptive. It is therefore proposed that children may have concerns that certain forms of humour may be inappropriate or distracting during a work task. This may highlight the future need to raise children's awareness of the importance of considering times when humour may or may not be welcomed by others.

Friendships play an important part in both children's social and emotional development (Newcomb & Bagwell, 1996). Findings of the current study showed that children would like to be friends with a child using aggressive humour significantly less than those using any of the other forms of humour. Aggressive humour may be particularly detrimental to forming and maintaining close friendships. For example, James and Fox (2016b) found a significant negative association between aggressive humour and closeness in friendship and a significant positive association between aggressive humour and conflict

in friendship. Moreover, Yip and Martin (2006) found that users of aggressive humour may struggle to accurately perceive emotions, provide emotional support and manage conflicts. On the other hand the adaptive forms of humour may be particularly beneficial in terms of relationships. For example, Yip and Martin (2006) found positive associations between the adaptive humour styles and initiating relationships, whilst Martin et al. (2003) suggested that the ability to laugh and joke with others may be particularly related to higher levels of intimacy in relationships. Self-defeating humour was not found to be perceived significantly more negatively in terms of friendships. This could indicate that any negative effects of self-defeating humour may develop over a longer period of time. For example, evidence from James and Fox (2016a) suggested that children often feel the need to refute self-defeating comments in an attempt to bolster others' confidence. A constant, regular requirement to do this may put strain on a relationship therefore having more long-term negative consequences.

Children rated those using affiliative humour as significantly more popular compared to other forms of humour. Affiliative humour may particularly enhance popularity as it is highly valued and enjoyed by other children (Klein & Kuiper, 2006). Follow-up analysis showed that the significant effect of humour style was significant for female humourists only, suggesting that for girls, humour may play a bigger part in their popularity than it does for boys. Children also rated males using aggressive humour as significantly more popular than girls using aggressive humour. Research has found that males tend to use aggressive humour more than females (Martin et al., 2003; Fox et al., 2013). Humour of this nature may therefore be seen as more commonplace and therefore more acceptable in boys; however, in girls it may be seen as less acceptable as they are seen to be straying away from appropriate gender roles (Coyne, Archer, Eslea & Liechty, 2008).

In their study with adults and adolescents, Kuiper et al. (2010) found that the maladaptive humour styles would make people feel less positive about themselves compared to the adaptive humour styles. In the current study, children indicated that aggressive humour would make them feel significantly worse than the other humour styles, whilst self-enhancing humour would make them feel significantly better than both self-defeating humour and affiliative humour. Considering teasing as a common form of aggressive humour in children, Jones Newman and Bautista (2005) found that early adolescents predicted that teasing could generate negative emotions. Furthermore, Janes and Olson (2000) suggested that just witnessing teasing may have an effect on the observer. Self-defeating humour's effect on feelings may be somewhat different. For example, being in the presence of another person drawing attention to their flaws may result in an individual becoming increasingly focused on their own flaws. Self-enhancing humour on the other hand may be particularly beneficial to people's feelings due to its positive nature. As stated by Martin et al. (2003), users of self-enhancing humour tend to have a generally humorous outlook on life. It seems surprising however that affiliative humour would make people feel significantly less good than self-enhancing humour. However, Fox et al. (2013) found that affiliative and aggressive humour were positively related. It might therefore be that children worry that affiliative humour could in some cases cross a line into aggressive humour.

In terms of the main strengths of the current study the use of an unrelated design meant that participants were kept blind to the aims of the study. Kuiper and Leite (2010) argued that providing a written description does not represent the more complex way that personal information is processed in real life. Presenting the vignettes to participants as real children however seemed effective with only a very small number of children guessing that the vignettes might be made up. The research also drew attention to the need to

carefully consider the neutral information presented together with the vignette and ensure that its influence is minimal. For example, on reflection, presenting a child who 'loves reading' and 'has a dog' could have influenced the perceptions formed by children. For example, those who consider themselves to be similar to the child described in the vignette may have perceived them more positively based on this information. In terms of alternatives to providing written vignettes future research could also consider the use of audio or video clips presenting different forms of humour which may seem more realistic to children (Kuiper & Leite, 2010). Furthermore, Kuiper and Leite's (2010) work involved providing participants with descriptors of individuals with both low and high rates of each of the four humour styles, as well as a descriptor which included no mention of humour. In addition, the different contexts in which humour occurs could also be considered. In the case of children for example, even the use of an adaptive humour style such as affiliative, could be seen as inappropriate if it is used in the classroom rather than the playground.

Overall, the research again highlights the need to consider humour as both adaptive and maladaptive rather than as just a single positive construct (Kuiper & Leite, 2010). By investigating younger children's perceptions of humour, not only has knowledge been gained with respect to the outcomes of using humour in different ways, more is also known about the extent of children's understanding of different styles of humour. From the findings it seems that even younger children may have an understanding of different forms of humour and of the consequences that can arise from using humour in different ways. For instance, for a number of the variables the children recognised that aggressive humour would lead to more negative perceptions than the remaining humour styles. In terms of the adaptive humour styles, children also seemed aware that these can lead to positive social outcomes. Children's understanding of self-defeating humour however is less clear. For example, for a number of variables, children did not rate self-defeating humour more

negatively than the adaptive humour styles. Children did nonetheless indicate that use of self-defeating humour would make them feel less good about themselves. In addition, although self-defeating humour like affiliative humour may include the telling of jokes, albeit self-directed jokes, it seems that children understand that this would not lead to increased popularity. This could therefore represent a degree of understanding of self-defeating humour. It may also be as previously mentioned, that the more negative social consequences of this type of humour could be more long-term and begin to become apparent as children move into adolescence.

3.5. Conclusion

In summary, this is the first study to adopt an experimental approach to investigate children's perceptions of the four humour styles proposed by Martin et al. (2003). In support of previous research with young adults, findings suggested that compared to maladaptive humour styles, adaptive humour styles are perceived more positively by others. This adds further support to the view that humour serves as an interpersonal signal (Zeigler-Hill et al., 2013). Furthermore, it suggests that children seem to understand that humour can be both adaptive and maladaptive. The experimental approach taken in the current study will act as a precursor to further work which will examine the actual effects of different forms of humour in younger children and take into account the fact that people do not tend to use just one form of humour. In this instance however, taking an experimental approach allowed for high levels of control and direct measurements of perceptions based on the four humour styles. It was also used as a basis for an attempt to improve children's awareness and understanding of different styles of humour (outlined in Chapter 6).

The next chapter will discuss research which involved the use of both self-reports of humour using the humour styles questionnaire for younger children (HSQ-Y) and also peer reports of the four humour styles. These were administered alongside measures of psychosocial adjustment with the intent of providing further validation for the HSQ-Y as a measure and examining the relationships between children's humour styles and adjustment.

4. Further development of the HSQ-Y

4.1. Introduction

The main aim of the study presented in the current chapter was to provide further validation for a self-report measure of the four humour styles (HSQ-Y) suitable for younger, primary aged children (8-11 years), which was initially developed prior to the commencement of this thesis. To provide validation for the HSQ-Y, three main steps were taken. Firstly, administering the measure twice over a three week period to assess test re-test reliability, secondly, collecting peer reports of the four humour styles alongside self-reports and thirdly, administering measures of psychosocial adjustment alongside the HSQ-Y.

A number of sections of literature are relevant to this chapter. Firstly, the literature which demonstrates the value of the four humour styles approach (see section 2.2.3.) and that which highlights associations between humour styles and adjustment in adults (see section 2.2.5.). As stated by Martin et al. (2003) as well as differentiating between benign and detrimental uses of humour, the HSQ also focuses on the function humour serves in everyday life. Its use resulted in stronger correlations between humour styles and psychological adjustment compared to previously available measures, demonstrating its value further. It has also been found to be valid in a number of different cultures including European (Saraglou & Scariot, 2002), Chinese (Chen & Martin, 2007) and Arabic samples (Kazarian & Martin, 2004). Since its development a multitude of studies have utilised the HSQ and found associations with many different variables including suicidal ideation (Tucker et al., 2013), aspects of social competence (Yip & Martin, 2006) and loneliness (Fitts et al., 2009), to name just a few.

The literature found in section 2.3.3. also highlights the links between children's humour and adjustment. For example, a number of studies have demonstrated positive relationships between children's humour and social relationships (e.g. Masten, 1986; Sherman, 1988), whereas others have demonstrated children's use of humour as a coping method (Freiheit et al.; Führ, 2002; Goodenough & Ford, 2005). The majority of these studies however failed to differentiate between adaptive and maladaptive styles of humour. Furthermore, although Erickson and Feldstein (2007) did utilise the HSQ with adolescents, unacceptable reliability coefficients, below .7 were found for the maladaptive humour styles. Based on Klein and Kuiper's (2006) ideas surrounding the associations between humour styles and peer relationships during childhood, Fox et al. (2013) adapted the HSQ for use with secondary aged children. They also found a number of links between humour styles and adjustment. As discussed, there is now therefore a need for an appropriate measure of humour styles suitable for children of a younger age. Administering measures of psychosocial adjustment alongside this measure will also allow for more to be known about the relationships between humour styles and psychosocial adjustment in primary aged children. Based on findings with adults and older children it was hypothesised that the adaptive humour styles would be positively related to psychosocial adjustment, whilst the maladaptive humour styles would be negatively related to psychosocial adjustment.

As mentioned in chapter 3, previous research has found gender differences in use of the four humour styles with males being found to use the maladaptive humour styles more than females (Martin et al., 2003). Gender differences will therefore be examined in the current study. Similarly, as discussed in section 2.3., little is known about the development of humour in children. In view of this, year group differences for the four humour styles will also be examined.

4.2. Method

4.2.1. Participants. 225 children were recruited from one large primary school in the South of England. Participants were aged 8-11 years with a mean age of 9.87 years (SD = 0.92), were in school years 4, 5 and 6 and the sample consisted of 116 males and 109 females. Parental consent was gained using an opt-out method.

4.2.2. Materials. The younger children's humour styles questionnaire (HSQ-Y) developed by the researcher was used to measure all four humour styles (see Appendix 4.1 for complete questionnaire). The questionnaire contained 24 items – 6 items measuring each of the four humour styles and was based on Fox et al's. (2013) humour styles questionnaire for children. Initial work by James and Fox (2016b) involved the development of a HSQ-Y measuring just affiliative and aggressive humour based on Fox et al's (2013) suggestion that younger children may only use these forms of humour. Further qualitative work however indicated that some younger children may in fact use all four styles of humour, leading to the adaptation of the HSQ-Y to include all four styles of humour (James & Fox, 2016b).

The HSQ-Y's simplified items were considered to have a more appropriate readability for younger children (Flesch reading ease score of the adapted HSQ-Y = 84.9, US grade level = 3.6, UK year 4, age 8-9 years). Negatively worded items were avoided due to previous research such as Marsh (1986) showing that younger children may not be able to comprehend negatively worded items. Furthermore, the HSQ-Y already measures both positive and negative uses of humour and so it could be argued that negatively worded items are unnecessary. A four point scale consisting of 1 'not at all like me', 2 'not like me', 3 'a bit like me' and 4 'a lot like me' was included as a variation to the scale ranging from strongly disagree to strongly agree (Fox et al., 2013). This was deemed to be

more suitable for younger age groups. A four point response scale was implemented to avoid the potential tendency for younger children to opt for a neutral mid-point response should one be available (Borgers et al., 2004). It was also considered that the arrangement of the rating scale may also influence children's responses (Betts & Hartley, 2012). Items were scored by the response 'not at all like me' acquiring the lowest score and 'a lot like me' acquiring the highest score for the humour style measured by that item. A mean score for each humour style was calculated for analysis.

A four item measure of loneliness derived from Asher, Hymel and Henshaw's (1984) loneliness and social satisfaction questionnaire (see Rotenberg, Boulton & Fox, 2005) was used as a measure of children's psychosocial adjustment. The subscale included four items using the same four point response scale used for the HSQ-Y again to avoid the potential overuse of a mid-point response (Borgers et al., 2004). No items were negatively worded or required reverse coding. Children received the highest score for selecting 'a lot like me' and the lowest score for selecting 'not at all like me' (1-4). Rotenberg et al. (2005) demonstrated that this measure had acceptable internal consistency ($\alpha =.87$). A mean score for loneliness was calculated.

Harter's (1985) measures of children's self-perceived social competence (SPSC) and global self-worth (GSW) were used to assess children's beliefs about their own social capabilities and feelings about themselves. Each measure contained six items in which participants were required to decide which of two statements was most like them. Children were then required to decide whether the statement they had chosen was 'sort of true' for them, or 'really true' for them. Children received the lowest score for responding 'really true' to the statement that displayed lower social competence/self-worth and the highest score for responding 'really true' to the statement that displayed higher social competence/self-worth. For both subscales, three items required reverse coding. Fox et al.

(2013) found acceptable reliability coefficients for both the global self-worth (α =.83) and self-perceived social competence subscales (α =.76). Mean scores for self-perceived social competence and global self-worth were calculated.

For the first peer report task children were required to tick the names of all of their classmates who used each of the four humour styles, meaning nominations were both positive and negative (see Appendix 4.2 for peer report tasks). Mayeux, Underwood and Risser (2007) indicated that teachers and parents may be wary of peer report tasks. However, peer report methods can provide multiple informants and offer an insider perspective (Perry et al., 1988). In addition, previous research using these methods has highlighted no detrimental outcomes (Bell-Dolan, Foster & Christopher, 1992; Bell-Dolan, Foster & Sikora, 1989; Hayvren & Hymel, 1984). To prepare children for the task, an example activity using famous names e.g. celebrities was used requiring children to match the names to descriptions such as 'is good at singing' and 'is hardworking' (see Appendix 4.3). Unlimited nominations were used based on concerns that children may not follow instructions if nominations were limited to a certain number of classmates (Jones et al., 2013). Children were provided with a list of the names of all children in their class taking part in the research. Males and females were included in the same list and names were presented in a random order (Poulin & Dishion, 2008). The four humour styles were represented by a statement based on items from the HSQ-Y found to have the highest item total correlations by James and Fox (2016b). In addition, the statement 'They are one of my closest friends' was included requiring children to tick the names of children they considered to be a friend (see Parker & Asher, 1993). Furthermore, a space was also provided for children to write the name of their single closest friend. For the humour and closest friend nominations a percentage score was calculated for each child due to the varying numbers of children in each class. This involved dividing the number of

nominations for each child by the number of children providing nominations minus one and multiplying the figure by one hundred.

To assess peer acceptance, again a list of the names of all participating children in a class were included following the instruction for children to circle how much they would like to play with each of their classmates (see Singleton & Asher, 1977). Children were required to respond on a five point scale from 'I wouldn't really like to play with them at all' to 'I would like to play with them very much'. An average peer acceptance score was calculated for each child by dividing the sum of ratings by the number of participating children minus one.

4.2.3. Procedure. Ethical approval was gained from the university ethics committee (see Appendix 4.4). Following the development of materials, recruitment of participants was embarked upon. Before making contact with schools, a letter and consent form was designed with the intention of gaining head teachers' interest. In the months preceding the research, the letter and consent form were emailed to a large primary school (see Appendix 4.5). Agreement to take part was received from the head teacher.

Parental consent was gained using an opt-out method. Letters including a consent form informing parents and guardians of all aspects of the research were sent out by the school in the weeks prior to data collection (see Appendix 4.6). Any consent forms returned to the schools were obtained by the researcher and it was ensured by the teachers that children who had been opted out of the research spent the session in another classroom.

Due to the number of measures included in the research and to assess test re-test reliability, data collection took place over two sessions three weeks apart. During the first session of data collection the researcher used a standardised preamble to ensure

instructions were delivered to children consistently (see Appendix 4.7). On completion of the questionnaires, participants were debriefed and again reassured of confidentiality.

During the second session of data collection a standardised preamble was again used. The HSQ-Y was administered during each session so that test re-test reliability could be assessed. Before moving onto the peer report section of the questionnaire, the example activity was explained to the children and completed with whole class participation. It was gently discussed that children should not share their answers with other children (Jones et al., 2013).

When children were near to completing the peer nomination task the space provided for them to fill in the name of their closest friend (if they had one) was highlighted. Subsequently the final activity was explained. Children were asked to circle a number from one to five (with five being 'I would like to play with them very much') to show how much they would like to play with each of their classmates.

When participants had completed their questionnaires they were fully debriefed. On this occasion the aims of the project were explained to the children. If questions or worries arose after the session children were urged to speak to a teacher. Lastly, the children and class teacher were thanked for their time and participation in the research.

4.3. Results

Prior to data analysis, the data were screened and relevant assumptions were checked (see Appendix 4.8 for procedure used to screen the data and to check the assumptions).

4.3.1. Reliability analysis. The reliability of the 24 HSQ-Y items (from session one of data collection) was reviewed. Table 4.1 shows the Cronbach's alphas for all subscales.

Table 4.1

Cronbach's alphas, n and means for individual subscales

Subscales	α	N	Mean (sd)
Affiliative	.90	219	3.08 (.68)
Aggressive	.84	209	1.98 (.69)
Self-enhancing	.78	215	2.74 (.67)
Self-defeating	.70	214	2.38 (.65)
Loneliness	.89	219	1.94 (.83)
SPSC	.81	201	2.90 (.60)
GSW	.73	203	2.84 (.75)

All items for all subscales were found to have acceptable reliability being above the .70 level considered satisfactory.

4.3.2. Test re-test reliability. Test re-test correlations were found to be either moderate or high (Affiliative = .81, Aggressive = .81, Self-enhancing =.68, Self-defeating = .73). Portney and Watkins' (2000) guidelines state that correlation coefficients between .5 and .8 suggest moderate test re-test reliability, whilst correlation coefficients greater than .8 suggest high test re-test reliability.

4.3.3. Gender and year group differences. Gender and year group differences were examined using a 2 (gender) x 3 (year group) MANOVA taking into account all thirteen dependent variables; see Table 4.2 for means (and SDs) (see Appendix 4.9 for MANOVA summary table). For the different humour styles, analyses revealed a significant main effect of gender on aggressive humour in that boys used more aggressive humour than females, $F(1,157) = 17.12$, $p < .001$, $\eta^2p = .10$. This was also the case for peer reported aggressive humour, $F(1,157) = 27.65$, $p < .001$, $\eta^2p = .15$. For the second maladaptive humour style, self-defeating, a significant main effect of gender was again found with males using this humour style more than females, $F(1,157) = 5.15$, $p < .05$, η^2p

= .03. This was also the case for peer reports of self-defeating humour, $F(1,157) = 6.28$, p < .05, η^2p = .04. For peer reported use of affiliative humour, a significant main effect of gender was found with males being reported to use more affiliative humour than females, $F(1,157) = 27.43$, $p < .001$, η^2p = .15.

No significant year group effects were found for self-reported use of the four humour styles. A significant year group effect was however found for peer reported use of self-enhancing humour, $F(2,157) = 24.95$, $p < .001$, η^2p = .24. Post hoc tests revealed a significant increase from year 4 to year 5 ($p < .001$), a significant decrease from year 5 to year 6 ($p < .001$) and a significant decrease from year 4 to year 6 ($p < .01$). A significant interaction effect was found for self-reported self-enhancing humour, $F(2,157) = 4.55$, $p < .05$, η^2p = .06. Simple effects analysis revealed that year four females used self-enhancing humour significantly more than year four males, $F(1,209) = 4.91$, $p < .05$, η^2p = .02. For peer reported self-enhancing humour a significant interaction effect was again found, $F(2,157) = 3.66$, $p < .05$, η^2p = .05. Simple effects analysis revealed that year four females were thought to use significantly more self-enhancing humour than year four males, $F(1,202) = 6.56$, $p < .01$, η^2p = .03.

Table 4.2

Means (and SDs) for males and females and year groups for all subscales

	Year4	Year5	Year6	Overall	F (df)
Affiliative					
Males	2.98 (.87)	3.17 (.70)	4.00 (.56)	3.09 (.69)	G F(1,157) = .13
Females	3.08 (.68)	2.84 (.80)	3.21 (.49)	3.06 (.67)	YG F(2,157) =.77
Overall	3.04 (.76)	3.03 (.75)	3.15 (.53)	3.08 (.68)	G*YG F(2,157) =1.63
Aggressive					
Males	2.11 (.67)	2.15 (.74)	2.25 (.76)	2.18 (.73)[a]	G F(1,157) =17.12***
Females	1.78 (.64)	1.48 (.42)	1.96 (.55)	1.76 (.58)[a]	YG F(2,157) =2.65
Overall	1.92 (.67)	1.86 (.70)	2.12 (.69)	1.98 (.69)	G*YG F(2,157) =1.25
Self-enhancing					
Males	2.51 (.79)[c]	2.94 (.72)	2.66 (.65)	2.70 (.72)	G F(1,157) = .25
Females	2.93 (.61)[c]	2.55 (.65)	2.78 (.58)	2.78 (.62)	YG F(2,157) =.02
Overall	2.76 (.71)	2.77 (.71)	2.71 (.62)	2.74 (.67)	G*YG F(2,157) =4.55*
Self-defeating					
Males	2.46 (.66)	2.37 (.72)	2.60 (.66)	2.49 (.68)[b]	G F(1,157) = 5.15*
Females	2.29 (.69)	2.08 (.55)	2.38 (.47)	2.26 (.59)[b]	YG F(2,157) =2.23
Overall	2.36 (.68)	2.24 (.66)	2.50 (.59)	2.38 (.65)	G*YG F(2,157) =.11
PRAffiliative					
Males	30.51 (21.20)	35.59 (18.99)	34.98 (19.18)	34.00 (19.54)[e]	G F(1,157) = 27.43***
Females	23.24 (17.61)	15.06 (12.85)	19.17 (11.20)	19.78 (14.70)[e]	YG F(2,157) = .15
Overall	26.20 (19.30)	26.67 (19.39)	28.20 (17.95)	27.11 (18.72)	G*YG F(2,157) =1.85
PRAggressive					
Males	22.08 (15.40)	16.88 (16.60)	20.26 (17.50)	19.69 (16.54)[f]	G F(1,157) = 27.65***
Females	9.10 (6.29)	7.96 (14.57)	7.66 (8.24)	8.32 (9.52)[f]	YG F(2,157) =.65
Overall	14.39 (12.42)	13.00 (16.21)	14.86 (15.52)	14.18 (14.71)	G*YG F(2,157) =.33
PRSelf-enhancing					
Males	17.11 (9.96)[d]	29.76 (13.70)	15.97 (6.93)	20.54 (11.86)	G F(1,157) = 2.09
Females	25.76 (9.16)[d]	29.65 (15.28)	14.65 (7.65)	22.95 (12.18)	YG F(2,157) =24.95***
Overall	22.24 (10.34)	29.71 (14.24)	15.40 (7.22)	21.71 (12.04)	G*YG F(2,157) =3.66*
PRSelf-defeating					
Males	10.07 (8.10)	10.97 (8.13)	12.01 (12.68)	11.18 (10.25)[g]	G F(1,157) = 6.28*
Females	9.45 (6.14)	8.34 (10.54)	4.58 (4.19)	7.50 (7.25)[g]	YG F(2,157) =.48
Overall	9.70 (6.94)	9.82 (9.24)	8.82 (10.58)	9.40 (9.08)	G*YG F(2,157) =2.22
Loneliness					
Males	1.90 (.95)	2.04 (.87)	1.64 (.67)	1.83 (.82)	G F(1,157) = 3.18
Females	1.96 (.86)	2.35 (.79)	1.96 (.80)	2.06 (.83)	YG F(2,157) =3.06*
Overall	1.94 (.89)	2.17 (.84)[i]	1.78 (.74)[i]	1.94 (.83)	G*YG F(2,157) =.43

GSW					
Males	2.84 (.74)	2.97 (.64)	3.09 (.52)[h]	2.99 (.62)	G $F(1,157) = 4.27$*
Females	3.02 (.45)	2.58 (.81)	2.73 (.39)[h]	2.81 (.57)	YG $F(2,157) =1.00$
Overall	2.94 (.59)	2.80 (.74)	2.94 (.50)	2.90 (.60)	G*YG $F(2,157) =3.85$*
SPSC					
Males	3.05 (.80)	2.99 (.72)[k]	3.00 (.60)	3.01 (.68)	G $F(1,157) = 13.11$***
Females	2.79 (.79)[l]	2.09 (.77)[klm]	2.93 (.56)[m]	2.66 (.78)	YG $F(2,157) =5.43$**
Overall	2.90 (.79)	2.60 (.86)	2.97 (.58)	2.84 (.75)	G*YG $F(2,157) =4.79$**
Friends					
Males	11.07 (6.74)	15.72 (11.26)	11.39 (7.56)	12.65 (8.83)	G $F(1,157) = 1.73$
Females	13.97 (9.48)	14.73 (11.73)	15.23 (7.75)	14.59 (9.46)	YG $F(2,157) =1.11$
Overall	12.79 (8.52)	15.29 (11.35)	13.04 (7.82)	13.59 (9.17)	G*YG $F(2,157) =.98$
Peer acceptance					
Males	3.01 (.52)	2.94 (.50)	2.89 (.46)	2.94 (.49)	G $F(1,157) = .34$
Females	3.19 (.55)	2.74 (.50)	3.05 (.54)	3.03 (.56)	YG $F(2,157) =3.11$*
Overall	3.12 (.54)[j]	2.86 (.51)[j]	2.96 (.50)	2.98 (.52)	G*YG $F(2,157) =2.18$

n = 116 males, 109 females (year 4 = 75, year 5 = 68, year 6 = 82), PR is peer report. Means in a row or column sharing a superscript are significantly different

4.3.4. Intercorrelations. Table 4.3 shows the correlations between all measures included in the study. In terms of associations between self and peer reports of the four humour styles, significant positive associations were found between self and peer reports of affiliative humour, aggressive humour and self-defeating humour. The positive association between peer and self-reports of self-enhancing humour was not significant.

Both adaptive humour styles were found to be positively related to self-worth and self-perceived social competence and negatively related to loneliness. The same was also found for peer reported use of affiliative humour. Both self-reported and peer reported use of affiliative humour were found to be positively related to peer acceptance and number of mutual friendships. A significant positive association was found between peer reported use of self-enhancing humour and both peer acceptance and number of mutual friendships. The same was found for self-reported use of self-enhancing humour although the association with number of mutual friendships was only approaching significance. Significant positive

associations were also found between self and peer reports of aggressive humour and self-perceived social competence. On the other hand, peer reported use of aggressive humour was also found to be negatively related to peer acceptance. No significant correlations were found between self-defeating humour and any of the psychosocial adjustment variables.

Lastly, in terms of associations between the different humour styles, affiliative humour was found to be significantly positively correlated with all other styles of humour. In addition, significant positive correlations were found between self-defeating and self-enhancing humour and also between self-defeating and aggressive humour.

Table 4.3

Intercorrelations between measures

	AFF	AGG	SEn	SD	PRAFF	PRAGG	PRSEN	PRSD	LON	GSW	SPSC	FRI	PA
AFF	--												
AGG	.15*	--											
SEn	.50***	-.01	--										
SD	.20**	.36***	.22**	--									
PRAFF	.38***	.32***	.14*	.23**	--								
PRAGG	.11	.47***	-.02	.26***	.39***	--							
PRSEN	.22**	-.01	.12	.10	.31***	.02	--						
PRSD	.13	.33***	.03	.29***	.27***	.54***	.19**	--					
LON	-.24***	.04	-.28***	.07	-.35***	-.06	-.08	.06	--				
GSW	.21**	-.07	.31***	-.01	.23**	.05	.08	-.10	-.46***	--			
SPSC	.24**	.17*	.24**	.09	.29***	.18*	-.05	-.10	-.53***	.50***	--		
FRI	.25***	-.02	.14†	-.01	.16*	-.09	.30***	-.00	-.32***	.06	.15*	--	
PA	.29***	-.12	.21**	-.01	.35***	-.17*	.34***	-.12	-.39***	.11	.24**	.41***	--

*p<.05, **p<.01, ***p<.001, † is approaching significance, Aff is affiliative, Agg is aggressive, SEn is self-enhancing, SD is self-defeating, PR is peer report, Lon is loneliness, GSW is Global self-worth, SPSC is self-perceived social competence, Fri is Mutual Friends, PA is Peer Acceptance

4.3.5. Factor analysis. All twenty four HSQ-Y items were entered into a principal components analysis (PCA). Suitability of the data for factor analysis was assessed with a Kaiser-Meyer-Olkin score of .84 exceeding the recommended value of .6 and Bartlett's test of sphericity was significant at $p <.001$. Inspection of the correlation matrix also revealed the presence of a number of coefficients of .3 and above. Principal components analysis revealed that five components had eigenvalues greater than 1, explaining a total of 59.26% of the variance. An inspection of the scree plot revealed a break after the fourth component. It was therefore decided to retain four components for further analysis, with the solution explaining a total of 54.54% of the variance. A varimax rotation was used to aid interpretation. Table 4.4 presents the factor loadings, showing a four factor structure with many items loading strongly with associated items. Cross-loading occurred on three occasions although the items still loaded most strongly with associated items. The interpretation of the four components is consistent with the four humour styles.

Table 4.4

Factor loadings using the rotated solution for the 24 HSQ-Y items (N=225)

	Mean (SD)	Aff	Agg	SEn	Sd
Aff6 'I find it easy to make people laugh'	3.05 (.89)	.88			
Aff4 'I am a funny person'	3.21 (.83)	.82			
Aff5 'People often laugh at the funny things I say'	3.09 (.87)	.81			
Aff2 'My jokes and funny stories make people laugh'	3.11 (.87)	.74		.30	
Aff3 'It is easy for me to think of funny things to say when I am with other children'	3.02 (.83)	.74			
Aff1 'I can be funny without having to try very hard'	3.00 (.76)	.70			
Agg3 'When something is really funny, I will say it even if it might upset someone'	1.99 (.92)		.78		
Agg4 'When I tell jokes, I do not think about who I might upset'	1.88 (.85)		.77		
Agg5 'I find it funny when people laugh at someone to make them look silly'	1.79 (.94)		.75		
Agg2 'When I think of something that is funny about someone, I say it, even if it gets me into trouble'	1.93 (.94)		.72		
Agg6 'I sometimes laugh at other people if my friends are too'	2.28 (.93)		.67		
Agg1 'When other people are laughing at someone, I will join in'	2.14 (.96)		.67		
SEn1 'When I am feeling sad, I think of something funny to cheer myself up'	2.90 (1.06)			.78	
SEn2 'If I am feeling worried, it helps to think of something funny'	2.53 (.99)			.75	
SEn4 'Even if I am feeling angry or upset, I can still find something to laugh about'	2.83 (1.02)		.31	.65	

	Mean (SD)				
SEn3 'If something is difficult, it helps to find something funny about it'	2.37 (.94)			.65	
SEn5 'I can find things to laugh about when I am on my own'	2.80 (1.01)			.52	
SEn6 'Being a funny person stops me from being sad'	2.78 (1.02)		.47	.48	
SD6 'At times, I make jokes about myself when I am with others a bit too much'	2.24 (.97)				.75
SD3 'Making fun of myself makes other people laugh'	2.47 (1.08)				.71
SD1 'I let other children laugh or joke about me more than I should'	2.36 (.91)				.62
SD5 'I can find things to laugh about when I am on my own'	2.71 (.99)				.61
SD4 'Letting others laugh at me is a good way to make friends'	2.08 (.99)				.58
SD2 'I am often the person that others are laughing at'	2.36 (.94)				.34
% of variance explained		24.28	15.81	8.14	6.31
Eigenvalue		5.83	3.80	1.96	1.51

Only factor loadings greater than .3 presented. Aff is affiliative, Agg is aggressive, SEn is self-enhancing, SD is self-defeating

4.3.6. Confirmatory factor analysis. Confirmatory factor analysis (using AMOS 21.0) was used to test the proposed four-factor structure of the HSQ-Y scale with $N = 225$. When it came to analysing the data using CFA, a Full Information Maximum Likelihood was used in the analyses to deal with missing data. Regression weights for one item on each scale were arbitrarily set at 1. The four factors (as latent variables) were assumed to covary and this was taken into account in the model (see Appendix 4.10). The correlations ranged from -.02 to .59 and the standardised regression weights ranged from .23 to .89. The results indicated an adequate fit to the data, with CMIN/DF values being under 3-4, CFI being above .90 (Bentler 1992) and RMSEA being below .06 (Hu & Bentler, 1999). Only the loading of SD2 was found to be lower at .23 (CMIN/DF= 1.72, CFI = .91, RMSEA = .06). The four factor model identified using exploratory factor analysis was confirmed.

4.3.7. Multiple groups analyses. Analysis was conducted to assess whether model parameters for the humour styles measurement model were equivalent for males and females. Two models were therefore compared. The first model was an unconstrained model in which factor loadings were allowed to vary across males and females. The second model constrained the factor loadings to be equal across males and females. If the fit of the constrained model is significantly worse than that of the unconstrained model, using chi-square as an indicator, then it should be concluded that effects differ among groups (Fox et al., 2015). Using the same approach further analysis was then conducted to assess whether model parameters were equivalent for the three year groups. For males and females, there was no significant loss of fit between the unconstrained and constrained model indicating that the groups did not differ. ($\Delta\chi2 = 25.84$, *df* $= 20$, *p >.05*). This was also the case for the three year groups ($\Delta\chi2 = 34.96$, *df* $= 40$, *p >.05*).

4.4. Discussion

In terms of the successful development of a reliable and valid measure of humour styles in younger children, the HSQ-Y was found to have acceptable levels of reliability for all subscales with a clear four factor structure being apparent. Administering the HSQ-Y twice over a period of three weeks allowed for test re-test reliability to be assessed. Findings demonstrated adequate test re-test reliability meaning that participants were responding to the measure in the same way on different occasions. Delivery of the measure alongside several psychosocial adjustment variables highlighted a number of important associations between well-being, social adjustment and humour styles in younger children.

In the current study, in addition to self-reported use of the four humour styles, peer reports of humour were also collected. As previously mentioned, peer reports are advantageous in both offering an insider perspective and providing multiple informants. They were included in the current work to address the question of children's accuracy in reporting their own use of humour. For example, children may be more reluctant to admit to using negative forms of humour, most notably aggressive, or may report greater use of positive styles of humour to appear funnier. Allport (1961) for instance, found that when asked about their own humour abilities, the majority of respondents considered themselves to have an average or above average sense of humour. Findings of the current work found that self-reported use of affiliative, aggressive and self-defeating humour were all in fact confirmed by peer reports of these humour styles, suggesting that children are accurate reporters of their humour use and providing validation for the HSQ-Y as a measure. For self-enhancing humour, the correlation between peer and self-reports of self-enhancing humour was not significant. It may nonetheless be much harder for peers to report on self-enhancing humour due to the nature of this humour style. For example, it may be used

more when children are alone or others may not be aware of its use as an internal coping method.

In terms of associations with psychosocial adjustment variables, both self and peer reports of affiliative humour were found to be positively associated with self-worth, self-perceived social competence, peer acceptance and number of friends. In addition, significant negative correlations were found with loneliness. These findings are supportive of Fox et al.'s (2013) work with older children which found positive associations with both social competence and self-worth and also of a wealth of research with adults (e.g. Fitts et al., 2009; Kuiper et al., 2004: Yip & Martin, 2006). Klein and Kuiper (2006) believed that affiliative humour is enjoyed and valued by others and could therefore add to children's on-going acceptance and popularity within their peer group. Moreover, being humorous is seen as a highly desirable characteristic in a friend (Sprecher & Regan, 2002) which may explain why users of affiliative humour have a greater number of friends. In turn, having many friends and being liked by peers may lead to less feelings of loneliness and greater feelings of self-worth.

Martin et al. (2003) believed that self-enhancing humour is inversely related to negative emotions and positively related to psychological well-being. This belief is supported by the current research whereby for self-reported use of self-enhancing humour, a positive association was found with self-worth. As discussed, self-enhancing humour involves possessing a humorous outlook on life, having an ability to maintain a humorous perspective even in the face of difficulty and also the use of humour as a coping mechanism (Martin et al., 2003). The current findings therefore demonstrate that the potential benefits of this humour style for psychosocial adjustment may be very much present in children even as young as eight. Furthermore, self-enhancing humour was also

found to be positively associated with self-perceived social competence and negatively associated with loneliness, providing further evidence of its worth.

Both self and peer reports of self-enhancing humour were found to be positively related to peer acceptance and number of friends. Klein and Kuiper (2006) stated that peer accepted children may use self-enhancing humour to display confidence and self-assurance leading to them achieving a desirable position within their peer group. They also suggested that use of self-enhancing humour can increase children's self-esteem which could in turn lead to greater social adjustment. Considering the positive, adaptive nature of self-enhancing humour it is unsurprising that children are drawn to making friends with children who use humour in this way. Furthermore, Martin et al. (2003) found self-enhancing humour to be positively associated with intimacy suggesting that friendships with users of this humour style are likely to be of higher quality.

Both self and peer reported use of aggressive humour were found to be positively related to self-perceived social competence. Conversely, peer reported use of aggressive humour was found to be negatively associated with peer acceptance, which could suggest that users of aggressive humour may have inaccurate or exaggerated views on their social abilities. Fox et al. (2013) also found a positive association between aggressive humour and self-perceived social competence in boys. They argued however that self-perceived social competence is a measure of thoughts about the self and not a measure of a child's status. In addition, the impact of aggressive humour on relationships could be more long term. As Martin et al. (2003) stated, excessive use of aggressive humour has a tendency to harm important relationships, which suggests that further work could assess the impact of aggressive humour over a longer time frame. When discussing the link between aggressive humour and bullying, Klein and Kuiper (2006) highlighted the distinction between two different kinds of bullies. Firstly, whilst socially deficient bullies may use aggressive

humour in a way that is seen as a weakness by peers, socially skilled bullies may use it in a way that appears to increase their support within the peer group. Either way, if users of aggressive humour are unaware of the negative impact their humour has in terms of peer acceptance, it seems particularly important to find ways to raise awareness of this. As highlighted by Klein and Kuiper (2006) use of aggressive humour could seriously impair children's social relationships.

Unexpectedly, no significant associations were found between self-defeating humour and psychosocial adjustment bringing into question the view that self-defeating humour can lead to detrimental outcomes. Fox et al. (2013) did however find significant associations between self-defeating humour and psychosocial adjustment in older children. It could therefore be argued that the potentially negative effects of self-defeating humour begin to occur over a more prolonged period of time. If children have only recently begun to use self-defeating humour at the age of eight, it seems reasonable that it may take time for the negative impacts to become apparent. Although, the difference was not significant, year six children did show the greatest use of self-defeating humour. As previously discussed, self-defeating humour can reflect an inner neediness which can be off putting to others. As Martin et al. (2003) highlighted, self-defeating humour can affect one's relationships. For example, children may tire of those who regularly use self-defeating humour, feeling they need to provide constant reassurance which may cause fractions in their friendships (see James & Fox, 2016a). In addition, frequently drawing attention to their weaknesses in order to amuse others may result in children becoming increasingly focused on their flaws. This reinforcement of negative cognitions may in turn have a negative effect on a child's emotional health.

Kuiper et al. (2010) were interested in co-variation patterns between the four humour styles. In the current research, affiliative humour was found to be related to the use

of all other styles of humour. This may indicate that knowing how to laugh with others, could lead to developing skills in laughing alone. At the same time however it may be easy for children to cross a line into laughing at the expense of others or at the expense of the self. Use of self-defeating humour was also found to be related to both self-enhancing humour and aggressive humour. Whilst self-defeating humour may be associated with poorer psychosocial adjustment (Martin et al., 2003; Fox et al., 2013) it seems positive that users of this humour style may be able to use self-enhancing humour to deal with maladjustment. These children may however find the distinction between the two humour styles harder to fathom. It seems that children using self-defeating humour may also be likely to resort to using aggressive humour, perhaps as a way to put others down or simply because they are unaware of the sorts of humour that are deemed to be acceptable. Self-enhancing humour on the other hand was not found to be associated with aggressive humour, most likely due to this humour style's positive associations with psychosocial adjustment. In general, the fact that negative styles of humour may be used alongside positive uses provides further evidence of the need to influence children's understanding of the potential consequences of their humour use. As Martin et al. (2003) stated the absence of detrimental uses of humour may be just as important as the presence of positive uses. This in particular may highlight the need to look at how children use a combination of different humour styles.

A number of year group and gender differences became apparent from the data. Notably, for both self and peer reports of aggressive and self-defeating humour, boys were found to use more of these humour styles. These findings are in line with Martin et al. (2003) who found higher use of the maladaptive humour styles in males and also with Fox et al. (2013) who found higher use in older boys. It seems that interventions aimed at tackling less positive uses of humour may be particularly beneficial for boys. In addition,

peer reports of humour also indicated that boys are believed to use affiliative humour more than girls. Whilst this may be the case, it could also be that children are influenced by popular beliefs relating to humour and gender, particularly considering that no significant effect of gender was found for self-reported affiliative humour. Mickes, Walker, Parris, Mankoff and Christenfeld (2012) highlighted that it seems to be a commonly held belief that males are funnier than females. When presented with the question of which of their classmates find it easiest to make others laugh, children may therefore have been more likely to firstly consider their male classmates.

In terms of year group differences, for self-reports of the four humour styles, no significant differences were found. This suggests that by age eight or nine, children seem to be using all four humour styles and that significant increases in the use of particular humour styles may not occur for the remaining years at primary school. When children transfer to secondary school however, increases may be expected. For example, self-enhancing humour could be used as a coping strategy to deal with all sorts of stresses associated with adolescence. In support of this, Führ (2002) found an increase in use of humour to cope at the age of twelve.

For peer reported use of self-enhancing humour, a significant increase was found from year 4 to year 5 and a significant decrease from year 5 to year 6. Considering that agreement was not found between self and peer reports of self-enhancing humour, the accuracy of these particular findings can be brought into question. For self-enhancing humour, it should also be noted that its use could be more likely to fluctuate over time compared to other humour styles. Use of humour as a coping method for example may be employed more during difficult times in any individual's life. Both peer and self-reports indicated that year 4 females used more self-enhancing humour than year 4 males. In an attempt to explain this, it could be argued that for girls, use of self-enhancing humour may

begin slightly earlier than in boys meaning that, by year 4, they are more proficient in its use compared to boys. This sort of finding could be particularly useful when deliberating the potential need to consider the presence and role of different humour styles in children even younger than age eight. It should however be acknowledged that this could be a spurious finding and something particular to the school that participated.

Including peer reports of both humour and psychosocial adjustment in the current study had a number of advantages. As discussed above, using peer reports provided multiple informants, an insider perspective and addressed the potential issue of shared method variance. When children were asked to declare if they had a closest friend, in the majority of cases, this question was left unanswered. This was also an issue highlighted by Jones et al. (2013) suggesting that children in general may be unwilling to respond to this sort of question. For example, children may be reluctant to choose between their friends. Alternatively, this may suggest that a small number of children have one single best friend.

Further research will now endeavour to examine relationships between humour styles and psychosocial adjustment over time. It is hoped that this will begin to address the unanswered questions regarding whether different styles of humour lead to adjustment/maladjustment or whether adjustment/maladjustment in fact leads to increased use of particular humour styles. For example, a well-adjusted child who is accepted by their peers may be provided with more opportunities to practice using positive humour styles. A child who is rejected by their peers on the other hand, may have deceased opportunities and resort to using less positive forms of humour.

4.5. Conclusion

Overall, the current research has provided validation for the HSQ-Y as an appropriate and reliable measure of humour styles in younger children. In particular, using peer reports alongside self-reports suggested that younger children are capable of reporting their own humour behaviours. In addition, several associations between the four humour styles and both self and peer reported psychosocial adjustment variables were also confirmed. For example, self-reports of the adaptive humour styles were found to be positively related to self-worth, social competence, peer acceptance and number of friends. This also provides validation for the HSQ-Y as a measure. It is hoped that the development of the HSQ-Y will lead to an increase in research investigating the role of humour styles in younger children. As discussed, longitudinal work can now be completed to investigate relationships between humour styles and adjustment over time. The next chapter will therefore outline a study investigating short-term longitudinal associations between children's humour styles and psychosocial adjustment.

5. Longitudinal relationships between humour styles and psychosocial adjustment in younger children

5.1. Introduction

Following the development and validation of an appropriate measure of humour styles suitable for children aged 8-11 years - the HSQ-Y, the main purpose of the current chapter is to outline a study which examines longitudinal relationships between children's humour styles and their psychosocial adjustment. The study itself was a short term longitudinal study conducted over a school year with data collection taking place in the autumn term (November, December) and the summer term (June). Children completed the same measures at both Time 1 and Time 2.

Longitudinal research with both adults and children which looks specifically at the associations between humour and adjustment is noticeably lacking. As well as being able to examine patterns of change over time, longitudinal research also allows for stronger statements about cause and effect to be made. For example, a child using the adaptive humour styles may be more likely to become a popular and well liked member of their peer group. On the other hand, it may be that children who are already accepted by their peers have more opportunities to practice and develop their humour skills during social interaction (Klein & Kuiper, 2006). As Klein and Kuiper (2006) proposed, it may well be that the relationship is reciprocal. Children who are socially skilled may develop a more adaptive sense of humour and therefore form friendships. As a consequence of these friendships, children would be provided with plenty of opportunities to further develop their humour skills. Children who lack opportunities to practice their use of adaptive humour styles may resort to using the more maladaptive humour styles.

As discussed in section 2.3.4., Fox et al. (2016a) conducted a longitudinal study with adolescents (aged 11-13 years) to examine reciprocity between humour styles and psychosocial adjustment. They found bi-directional relationships between humour styles and adjustment. For example, whilst self-defeating humour at time one was found to predict increased depression at time two, depression at time one was found to predict increased self-defeating humour at time two. Longitudinal research is now required to investigate whether the same relationships can be found for younger, primary aged children. It is therefore hypothesised that in the current sample, bi-directional relationships will be found between humour styles and aspects of psychosocial adjustment. Whilst the adaptive humour styles will predict better social and psychological adjustment over time, better adjustment will also predict more use of the adaptive humour styles. On the other hand, the maladaptive humour styles will predict poorer social and psychological adjustment, whilst poor adjustment will predict a greater use of maladaptive humour styles. In line with the previous study (Study Two), gender and year group differences will also be examined.

In addition, following the identification of different humour types in older children (Fox et al., 2016b), data from the current study will also be used to conduct a cluster analysis. As stated by Galloway (2010), to advance our understanding, it may be useful to look at how individuals use a combination of different styles of humour. For example, Galloway (2010) identified four different clusters of people or humour types. To extend this area of research further Leist and Müller (2013) found different humour types to be differentially related to well-being. Fox et al. (2016b) identified the presence of four different humour types with older children; humour endorsers; adaptive humourists; interpersonal humourists; and self-defeaters. These were also found to be differentially related to psychosocial adjustment. For example, whilst the adaptive humourists were

found to be high on self-esteem, the self-defeaters scored highest in terms of maladjustment. Utilising cluster analysis with a sample of primary aged children will demonstrate whether or not the same patterns emerge.

5.2. Method

5.2.1. Participants. 413 children were recruited from five average sized primary schools in Staffordshire and Cheshire. Participants were aged 8-11 years with a mean age of 9.24 years (SD=.94), were in school years 4, 5 and 6 and the sample consisted of 190 males and 223 females. Parental consent was gained using an opt-out method.

5.2.2. Materials. As was the case for the cross-sectional study, the HSQ-Y and self-report measures of loneliness, self-worth and self-perceived social competence were included (see chapter 4 – further validation of the HSQ-Y & Appendix 4.1). Although a measure of closest friends was also administered, this differed to the measure of closest friends outlined in chapter 4. In addition, a measure of Emotional Symptoms (ES) was also included.

The emotional symptoms subscale of the Strengths and Difficulties Questionnaire (SDQ) (Goodman, Meltzer & Bailey, 1998) was used as a measure of children's internalising symptoms. Although this self-report measure is reported to be suitable for children aged 11-17 years, it was deemed appropriate to be used with younger children alongside the other self-report measures, given children's ability to cope with the self-report measures in the previous chapters. Moreover, Curvis, McNulty and Qualter (2013) found that children aged 6-10 years provided meaningful SDQ data. The subscale contained 5 items using a three point response scale consisting of 'not true', 'a bit true' and 'very true'. No items were negatively worded or required reverse coding (see Appendix

5.1). Children received a score of 0 for not true, a score of 1 for a bit true and a score of 2 for very true. A total sum score for the subscale was then calculated.

A space was provided for children to write the names of their close friends in their class (see Parker & Asher, 1993). The number of mutual friendships for each child was calculated followed by a percentage score for each child due to varying numbers of children in each class This involved dividing the number of nominations for each child by the number of children providing nominations minus one and multiplying the figure by one hundred (see Appendix 5.1).

5.2.3. Procedure. Ethical approval was gained from the university ethics committee (see Appendix 5.2). Following the development of materials, recruitment was embarked upon. The same procedure used for the cross-sectional study (see chapter 4) was adopted to gain access to schools and to gain consent from parents again using an opt-out method. Schools were made aware that due to the longitudinal element of the research, a session of data collection would take place in both the autumn term and the summer term, and that they would be contacted in the spring to make arrangements for Time 2 (see Appendix 5.3). A letter to parents/guardians was sent out before data collection in the autumn term with parents being asked to return the reply slip if they wished to opt their child out of the research. Starting afresh, a letter was also sent to parents in the summer term again asking them to return the slip if they were not happy for their child to participate (see Appendix 5.4). In the autumn term, 10 children were opted out of the research and in the summer term, 7 children were opted out of the research. At Time 2, four of the original five schools were able to participate again.

During sessions of data collection, which took place on a whole class basis, a standardised preamble (see Appendix 5.5) was used to ensure that delivery of the questionnaire was consistent (see chapter 4 for further details of information/instructions

given to children). Each item was again read aloud to children by the researcher and it was

explained that when completing the friendship nomination task, children should not share

their answers with other children so that their feelings could be kept private. Children were

thanked and debriefed after each session and after Time 2 and were made aware that

completing questionnaires on two occasions helps researchers to look at changes over time.

5.3. Results

Prior to data analysis, the data were screened and relevant assumptions were checked (see

Appendix 5.6 for procedure used to screen the data and to check the assumptions).

5.3.1. Reliability analysis. The reliability of all subscales were reviewed at both

time points. Table 5.1 shows the Cronbach's alphas for all subscales at Time 1 and Time 2.

Table 5.1

Cronbach's alphas for individual subscales (n in brackets)

Subscales	Time 1	Time 2
Affiliative	.85 (395)	.90 (321)
Aggressive	.80 (395)	.87 (317)
Self-enhancing	.71 (397)	.74 (317)
Self-defeating	.66 (391)	.70 (322)
Loneliness	.87 (398)	.87 (318)
ES	.67 (403)	.65 (325)
GSW	.66 (353)	.76 (283)
SPSC	.73 (356)	.76 (289)

The affiliative, aggressive, self-enhancing, loneliness and self-perceived social competence

subscales were all found to have acceptable reliability at both time points. For self-

defeating and global self-worth, reliability was found to reach the .70 level considered

acceptable at Time 2, whilst the Emotional Symptoms remained below .70 at both time

points. Findings for these subscales should therefore be treated with some level of caution.

5.3.2. Intercorrelations.

Table 5.2

Intercorrelations between measures

	Aff	Agg	SEn	SD	Lon	ES	GSW	SPSC	Fri	Aff2	Agg2	SEn2	SD2	Lon2	ES2	GSW2	SPSC2	Fri2
Aff	--																	
Agg	.27***	--																
SEn	.34***	.05	--															
SD	.36***	.45***	.25***	--														
Lon	-.20***	-.13**	-.23***	.01	--													
ES	-.13**	-.16	-.09	.09	.52***	--												
GSW	.20***	.00	.16**	.01	-.34***	-.39***	--											
SPSC	.26***	.06	.22***	.05	-.46***	-.32***	.47***	--										
Fri	.23***	.09	.18***	.05	-.27***	-.20***	.12*	.21***	--									
Aff2	.60***	.15**	.24***	.22***	-.20***	-.18**	.19***	.19***	.29***	--								
Agg2	.22***	.65***	-.01	.31***	-.04	.03	.00	.07	.15**	.30***	--							
SEn2	.31***	-.05	.43***	.41*	-.11	-.04	.12*	.14*	.08	.32***	-.02	--						
SD2	.17**	.24***	.06	.44***	.09	.19***	-.16**	-.09	.01	.27***	.36***	.13*	--					
Lon2	-.19***	-.08	-.16**	-.00	.54***	.46***	-.30***	-.40***	-.23***	-.24***	-.08	-.17**	.12*	--				
ES2	-.17**	-.07	-.13*	.01	.34***	.57***	-.28***	-.31***	-.14*	-.18***	.01	-.17**	.16**	.53***	--			
GSW2	.14*	.04	.15*	.04	-.32***	-.31***	.46***	.36***	.09	.20***	.03	.12*	-.19***	-.49***	-.37***	--		

SPSC2	.23***	.08**	.21***	.08	-.45***	-.33***	.25***	.52***	.22***	.25***	.08	.13*	-.10	-.60***	-.44***	.53***	--
Fri2	.16**	.00	.13*	.02	-.23***	-.15**	.07	.21***	.60***	.21***	.10	.12*	.03	-.22***	-.10	.04	.26***	--

*p < .05, **p < .01, ***p < .001, Aff is affiliative, Agg is aggressive, SEn is self-enhancing, SD is self-defeating, Lon is loneliness, ES is Emotional symptoms, GSW is Global self-worth, SPSC is self-perceived social competence, Fri is Mutual Friends, 2 is Time 2

Table 5.2 shows the correlations between the variables included in the study. Stability coefficients for both the humour styles and measures of psychosocial adjustment were moderate: $r_{affiliative} = .60$, $p < .001$; $r_{aggressive} = .65$, $p < .001$; $r_{self-enhancing} = .43$, $p < .001$; $r_{self-defeating} = .44$, $p < .001$; $r_{loneliness} = .54$, $p < .001$; $r_{emotional\ symptoms} = .57$, $p < .001$; $r_{Self-worth} = .46$, $p < .001$; $r_{social\ competence} = .52$, $p < .001$; $r_{friends} = .60$, $p < .001$. At both, Time 1 and Time 2, as expected, the adaptive humour styles were positively correlated with global self-worth, self-perceived social competence and number of friends and negatively correlated with loneliness. Negative correlations were also found with emotional symptoms; however the correlation at Time 1 was only approaching significance. For self-defeating humour, at Time 1 no significant correlations were found with the psychosocial adjustment variables, although at Time 2, positive correlations were found with loneliness and emotional symptoms and a negative correlation was found with global self-worth. Unexpectedly, at Time 1 a negative correlation was also found between aggressive humour and loneliness. In terms of associations between the different humour styles at both Time 1 and Time 2 affiliative humour was found to be significantly positively correlated with all other styles of humour. In addition, significant positive correlations were found between self-defeating and self-enhancing humour and also between self-defeating and aggressive humour.

Over time, bi-directional relationships were evident between humour and adjustment. For example, the adaptive humour styles at Time 1 were positively correlated with global self-worth, self-perceived social competence and number of friends at Time 2 and negatively correlated with loneliness and emotional symptoms at Time 2. Comparably, both global self-worth and self-perceived social competence at Time 1 were positively correlated with use of the adaptive humour styles at Time 2. Number of friends at Time 1 was also positively correlated with use of affiliative humour at Time 2, but also with use of

aggressive humour at Time 2. Loneliness and emotional symptoms at Time 1 were found to be significantly, negatively correlated with use of affiliative humour at Time 2. Whilst emotional symptoms at Time 1 were positively correlated with self-defeating humour at Time 2, global self-worth at Time 1 was negatively correlated with self-defeating humour at Time 2. Aggressive humour at Time 1 was also positively correlated with self-perceived social competence at Time 2.

In terms of the different humour styles, use of affiliative humour at Time 1 was positively correlated with use of all other humour styles at Time 2. This was also the case for self-defeating humour. Whilst use of self-enhancing humour at Time 1 was positively correlated with use of both adaptive humour styles at Time 2, use of aggressive humour at Time 1 was positively associated with affiliative humour and both maladaptive humour styles at Time 2.

5.3.3. Gender and year group differences. Gender and year group differences in humour styles for Time 1 and Time 2 were examined using a 2 (time) x 2 (gender) x 3 (year group) mixed MANOVA; see Table 5.3 for means (and SDs) (see Appendix 5.7 for MANOVA summary tables). Analysis revealed a significant main effect of gender in that boys used more aggressive humour than girls, $F(1,291) = 27.44$, $p < .001$, $\eta^2p = .09$. For the second maladaptive humour style, boys were also found to use significantly more self-defeating humour than girls $F(1,291) = 5.31$, $p < .05$, $\eta^2p = .02$. For year group, a significant main effect was found for self-defeating humour $F(2,291) = 4.77$, $p < .01$, $\eta^2p = .03$; post hoc tests revealed that year 5 children were found to use significantly more self-defeating humour than year 4 children ($p < .01$). There were no significant interaction effects.

Table 5.3

Means (and SDs) for males and females and year groups for the HSQ-Y subscales

	YG4 T1	YG4 T2	YG4 O	YG5 T1	YG5 T2	YG5 O	YG6 T1	YG6 T2	YG6 O	O T1	O T2	O O	F values
Aff													G $F(1,291) = .13$
M	3.09 (1.98)	3.07 (2.10)	3.08 (1.84)	3.22 (1.79)	3.10 (1.91)	3.16 (1.67)	3.17 (1.60)	3.16 (1.71)	3.17 (1.48)	3.16 (1.03)	3.11 (1.10)	3.14 (.97)	YG $F (2,291) = .99$
													T $F(2,291) = .23$
F	3.00 (1.65)	3.02 (1.76)	3.01 (1.53)	3.15 (1.53)	3.16 (1.64)	3.16 (1.43)	3.15 (1.53)	3.17 (1.79)	3.16 (1.57)	3.10 (.93)	3.12 (1.00)	3.11 (.88)	G*YG $F(2,291) = .10$
													G*T $F(2,291) = .83$
O	3.05 (1.29)	3.04 (1.38)	3.04 (1.19)	3.19 (1.17)	3.13 (1.26)	3.16 (1.10)	3.16 (1.15)	3.17 (1.24)	3.16 (1.09)	3.13 (.71)	3.11 (.74)	3.12 (.65)	YG*T $F(2,291) = .32$
													G*YG*T $F(2,291) = .26$
Agg													G $F(1,291) = 27.44^{***}$
M	2.43 (1.98)	2.59 (2.09)	2.51 (1.84)	2.47 (1.79)	2.44 (1.88)	2.46 (1.65)	2.42 (1.60)	2.51 (1.69)	2.46 (1.48)	2.44 (1.03)	2.51 (1.09)	2.48 (.97)[a]	YG $F (2,291) = 1.42$
													T $F(2,291) = 2.06$
F	2.04 (1.65)	1.93 (1.74)	1.99 (1.53)	2.25 (1.53)	2.30 (1.62)	2.28 (1.43)	1.91 (1.69)	2.06 (1.78)	1.98 (1.55)	2.07 (.93)	2.10 (.98)	2.08 (.86)[a]	G*YG $F(2,291) = 2.10$
													G*T $F(2,291) = .36$
O	2.24 (1.29)	2.26 (1.36)	2.25 (1.19)	2.36 (1.17)	2.37 (1.24)	2.37 (1.09)	2.16 (1.15)	2.29 (1.22)	2.22 (1.07)	2.25 (.71)	2.30 (.74)	2.28 (.65)	YG*T $F(2,291) = 1.05$
													G*YG*T $F(2,291) = 2.35$
SEn													G $F(1,291) = .01$
M	2.65 (1.91)	2.69 (1.98)	2.67 (1.65)	2.66 (1.72)	2.53 (1.79)	2.59 (1.50)	2.94 (1.55)	2.67 (1.60)	2.80 (1.34)	2.75 (1.00)	2.63 (1.03)	2.69 (.86)	YG $F (2,291) = 1.45$
													T $F(2,291) = 3.76^{*}$
F	2.70 (1.59)	2.61 (1.65)	2.65 (1.38)	2.67 (1.48)	2.71 (1.53)	2.69 (1.28)	2.79 (1.62)	2.68 (1.69)	2.74 (1.40)	2.72 (.91)	2.67 (.93)	2.69 (.78)	G*YG $F(2,291) = .56$
													G*T $F(2,291) = .59$
O	2.67 (1.24)	2.65 (1.29)	2.66 (1.07)	2.66 (1.14)	2.62 (1.17)	2.64 (.98)	2.86 (1.12)	2.68 (1.15)	2.77 (.97)	2.73 (.67)[d]	2.65 (.71)[d]	2.69 (.59)	YG*T $F(2,291) = 1.57$

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													G*YG*T $F(2,291)$ =1.27
SD													G $F(1,291)$ = 5.13*
M	2.61 (1.76)	2.41 (1.90)	2.51 (1.53)	2.75 (1.59)	2.61 (1.71)	2.68 (1.40)	2.55 (1.41)	2.46 (1.53)	2.51 (1.24)	2.63 (.91)	2.50 (1.00)	2.57(.81)[b]	YG $F(2,291)$ =4.77**
													T $F(2,291)$ =2.54
F	2.27 (1.46)	2.31 (1.57)	2.29 (1.28)	2.62 (1.36)	2.53 (1.46)	2.57 (1.19)	2.36 (1.48)	2.43 (1.60)	2.40 (1.31)	2.41 (.83)	2.43 (.90)	2.42 (.72)[b]	G*YG $F(2,291)$ =.34
													G*T $F(2,291)$ =3.50
O	2.44 (1.14)	2.36 (1.22)	2.40 (1.00)[c]	2.68 (1.05)	2.57 (1.12)	2.63 (.91)[c]	2.45 (1.03)	2.45 (1.10)	2.45 (.90)	2.52 (.62)	2.46 (.67)	2.49 (.55)	YG*T $F(2,291)$ =.72
													G*YG*T $F(2,291)$ =.51

*$p < .05$, **$p < .01$, ***$p < .001$, *n = 135 males, 162 females (year 4 = 88, year 5 = 104, year 6 = 105) M is males, F is females, O is overall, T is time, G is gender, YG is year group, Aff is affiliative, Agg is aggressive, SEn is self-enhancing, SD is self-defeating, Means in a row or column sharing a superscript are significantly different*

5.3.4. Confirmatory factor analysis. Confirmatory factor analysis (using AMOS 21.0) was used to test the proposed four-factor structure of the HSQ-Y at Time 1 with $N = 413$. When it came to analysing the data using CFA, a Full Information Maximum Likelihood was used in the analyses to deal with missing data. Regression weights for one item on each scale were arbitrarily set at 1. The four factors (as latent variables) were assumed to covary and this was taken into account in the model. The correlations ranged from .06 to .59 and the standardised regression weights ranged from .26 to .78. The criteria used to assess the model fit included the CMIN/DF, CFI and RMSEA. A good fitting model is indicated by CMIN/DF values under 3-4, CFI values above .90 (Bentler, 1992), and RMSEA scores of .06 or below (Hu & Bentler, 1999). The results indicated an adequate fit to the data (CMIN/DF= 2.40, CFI = .87, RMSEA = .06), although CFI was approaching the desired .90. The four factor model identified in study 2 was again confirmed. At Time 2, the same procedure was followed to test the four factor structure of the HSQ-Y. The fit was again found to be adequate (CMIN/DF= 2.33, CFI = .89, RMSEA = .06) with CFI approaching .90.

Next separate measurement models were assessed at Time 1 and Time 2 for social adjustment (loneliness, social competence, friends) and psychological adjustment (self-worth, emotional symptoms). Separating psychosocial adjustment into social and psychological adjustment allowed for the avoidance of an overly complex model and also the need for multiple separate models. The three factors for social adjustment and two factors for psychological adjustment were assumed to covary and this was taken into account in the model. The results indicated an adequate fit to the data for both social and emotional adjustment at Time 1 and Time 2 (see table 5.4).

Structural equation modelling was then used to estimate full cross lagged models evaluating the proposed relationships between humour styles and psychosocial adjustment.

Data from only those participants who took part at both time points were included in the analysis and a Full Information Maximum Likelihood was again used to deal with missing data. First separate cross-lagged measurement models were assessed for: humour styles, social adjustment and psychological adjustment. In all models, all Time 1 latent variables were allowed to covary as were the Time 2 latent variable disturbance terms. Corresponding Time 1 and Time 2 error variances for the observed variables (friends) were also allowed to covary. In all models, Time 1 latent variables predicted Time 2 latent variables. As shown in Table 5.4 for both social and emotional adjustment the model fit was adequate. For humour styles, however CFI was slightly below the desired .90, although the remaining criteria did point towards a good fitting model.

At this point model parameters were examined and it was considered whether there were any theoretical justifications for modifications to the models. Constrained models were therefore tested whereby specific sets of error terms were allowed to covary. These were the error terms for specific items that would be expected to be highly correlated due to similarities in their meaning. For example, for the humour styles, the aggressive items 'When other people are laughing at someone, I will join in' and 'I sometimes laugh at other people if my friends are too' were considered to be conceptually similar. As these modifications impacted on the fit of the models only very marginally, the decision was made in all cases to revert back to the original models.

Table 5.4

Model fit for Time 1, Time 2 and Cross Lagged models

Model	Unconstrained			Constrained		
	CMIN	CFI	RMSEA	CMIN	CFI	RMSEA
Time 1						
HSQ-Y	2.40	.87	.06	2.26	.89	.06
Social adjustment	1.27	.99	.03	1.14	1.00	.02
Emotional adjustment	2.55	.90	.06	1.93	.94	.05
Time 2						
HSQ-Y	2.33	.89	.06	2.17	.91	.05
Social adjustment	1.98	.97	.05	1.75	.98	.04
Emotional adjustment	2.22	.91	.05	1.55	.96	.04
Cross lagged						
HSQ-Y	1.84	.87	.05	1.79	.88	.04
Social adjustment	1.57	.96	.04	1.44	.97	.03
Emotional adjustment	1.70	.91	.04	1.42	.95	.03
HSQ-Y & social adjustment	1.63	.86	.04	1.60	.87	.04
HSQ-Y & emotional adjustment	1.60	.84	.04	1.56	.85	.04

5.3.5. Cross lagged structural equation models. Two cross lagged models, one combining humour styles and social adjustment and one combining humour styles and psychological adjustment were evaluated. As shown in Table 5.4, in terms of model fit CMIN/DF and RMSEA scores indicated good fitting models, the CFI scores however were again slightly lower than the desired .90. Firstly, number of friends at Time 1 predicted an increase in use of affiliative humour at Time 2 ($\beta = .10$, $p = .04$). Higher self-perceived social competence at Time 1 predicted a decrease in use of self-defeating humour at Time 2 ($\beta = -.23$, $p = .03$), the same was found for global self-worth although this path was only approaching significance ($\beta = -.20$, $p = .07$). Emotional symptoms at Time 1 predicted an increase in use of aggressive humour at Time 2 ($\beta = .23$, $p = .02$), although aggressive

humour at Time 1 was also found to predict an increase in self-perceived social competence at Time 2 ($\beta = .25$, $p = .01$). See figures 5.1 and 5.2 for a schematic depiction of the models showing the significant paths.
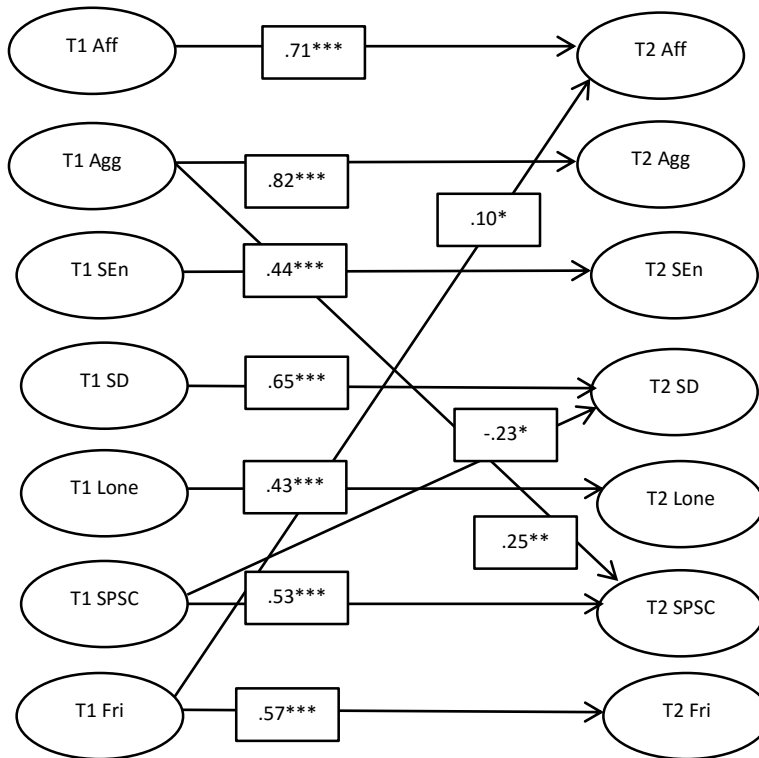
Figure 5.1. Schematic of Structural Model for Self-reported humour styles and Social Adjustment Variables (Omitting Error Terms, Indicators for Latent Variables and covariance Paths). Significant paths only are shown.
Aff = affiliative humour, Agg = aggressive humour, SEn = self-enhancing humour, SD = self-defeating humour, Lone = loneliness, SPSC = self-perceived social competence, Fri = friends, T1 = Time 1, T2 = Time 2.
*$p < .05$, **$p < .01$, ***$p < .001$.
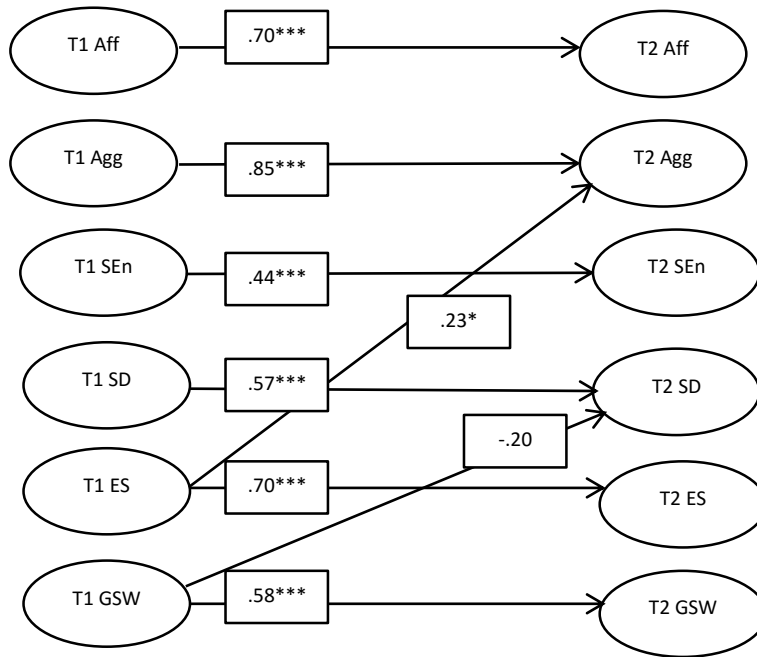
Figure 5.2. Schematic of Structural Model for Self-reported humour styles and Psychological Adjustment Variables (Omitting Error Terms, Indicators for Latent Variables and covariance Paths). Significant paths only are shown.
Aff = affiliative humour, Agg = aggressive humour, SEn = self-enhancing humour, SD = self-defeating humour, ES = emotional symptoms, GSW = Global self-worth, T1 = Time 1, T2 = Time 2.
*$p < .05$, **$p < .01$, ***$p < .001$.

5.3.6. Multiple groups analysis. Analyses were conducted to assess whether model parameters were equivalent for males and females. Two models were therefore compared for each of the cross lagged models (humour, humour and social adjustment, humour and psychological adjustment). The first model was an unconstrained model in which factor loadings were allowed to vary across males and females. The second model constrained the factor loadings to be equal across males and females. If the fit of the constrained model is significantly worse than that of the unconstrained model, using chi-square as an indicator, then it should be concluded that effects differ among groups (Fox et al., 2015). Using the same approach, further analysis was then conducted to assess whether model parameters were equivalent for the three year groups. For males and females, for all three models there was no significant loss of fit between the unconstrained and constrained

models indicating that the groups did not differ (humour $\Delta\chi^2 = 33.51$, $df = 40$, $p > .05$, humour and social adjustment $\Delta\chi^2 = 64.13$, $df = 62$, $p > .05$, humour and psychological adjustment $\Delta\chi^2 = 54.44$, $df = 58$, $p > .05$). This was also the case for the three year groups (humour $\Delta\chi^2 = 90.59$, $df = 80$, $p > .05$, humour and social adjustment $\Delta\chi^2 = 146.27$, $df = 124$, $p > .05$, humour and psychological adjustment $\Delta\chi^2 = 140.52$, $df = 116$, $p > .05$). It can therefore be concluded that in each model, no differences were found between males and females or the three year groups.

5.3.7. Cluster analysis. As used by Galloway (2010) with an adult sample and Fox et al. (2016b) with an adolescent sample, K-mean cluster analysis was utilised. First, the HSQ-Y scores were transformed to Z scores to help with the interpretation of the results. As stated by Fox et al. (2016b) it is necessary for the researcher to decide how many clusters to extract from the data; a degree of trial and error is therefore likely. Fox et al. (2016b) identified the presence of four clusters using the child HSQ (interpersonal humourists, self-defeaters, adaptive humourists and humour endorsers) as did Galloway (2010) using the adult HSQ (above average on all humour styles, below average on all humour styles, above average on the adaptive humour styles, above average on the maladaptive humour styles). Leist and Müller (2013) however, identified just three (endorsers, deniers, self-enhancers). It was therefore decided that three then four clusters should initially be extracted. Using the data from Time 1, two K-means cluster analyses were conducted. Firstly, a three factor solution consisted of adaptive humourists (above average on the adaptive humour styles), humour endorsers (above average on all humour styles) and humour deniers (below average on all humour styles). A four factor solution was then trialled which consisted of the three previously identified humour types with the addition of interpersonal humourists (above average on affiliative and aggressive humour). Although this four factor solution also seemed appropriate, at Time 2, the four factor

solution was not found to be meaningful. It was therefore decided that the three factor

solution was most appropriate (adaptive humourists, humour deniers, humour endorsers).

When performing K-means cluster analysis on the Time 2 data, it is necessary to note that

the sample size was reduced as only four out of five longitudinal schools participated at

Time 2. The three clusters identified were very similar to those identified previously with

the presence of both the adaptive humourists and the humour deniers. At Time 2 however,

the third cluster, humour endorsers were found to be high on use of affiliative, aggressive

and self-defeating humour, but slightly lower than average on use of self-enhancing

humour. See Table 5.5 for the clusters at Time 1 and Time 2.

Table 5.5

Mean Z-standardized humour styles for the three humour types at T1 and T2

	Clusters		
	1	2	3
Time 1			
Ns (%) Total N =	167 (41%)	107 (26%)	138 (33%)
Aff T1	.14	-1.05	.65
Agg T1	-.57	-.34	.95
SEn T1	.41	-1.07	.33
SD T1	-.31	-.62	.85
Time 2			
Ns (%) Total N =	105 (35%)	93 (31%)	100 (34%)
Aff T2	.33	-.98	.58
Agg T2	-.52	-.43	.97
SEn T2	.81	-.82	-.14
SD T2	-.14	-.53	.69

Agg = Aggressive humour. SEn = Self enhancing humour. Aff = Affiliative humour. SD =

Self-defeating humour.
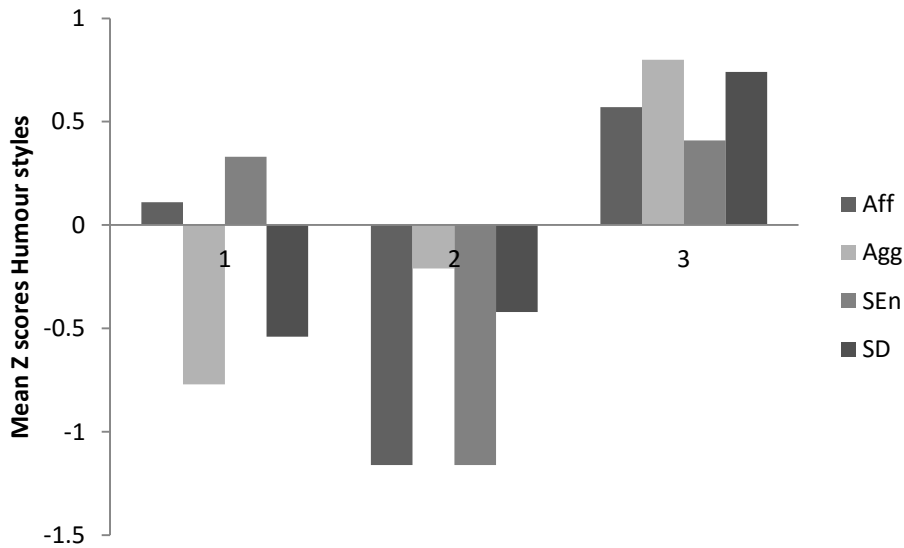
Figure 5.3. Mean Z-score humour styles for the three clusters at T1. 1. Adaptive humourists, 2. Humour deniers, 3. Humour endorsers.

3.3.7.1. Gender differences. A Chi-square analysis to test for gender differences across the three clusters at Time 1 was significant ($\chi^2 = 28.35$, *df* = 2, *p* < .001). Although the number of males and females who were humour deniers was relatively equal, more males than females were endorsers. Conversely, more females than males were adaptive humourists.

Table 5.6

Number (and %) of males and females in each cluster at T1

Clusters	1	2	3	Total
Females	107 (64.1)	66 (61.7)	49 (35.5)	222
Males	60 (35.9)	41 (38.3)	89 (64.5)	190
Total	167	107	138	412

1 = Adaptive Humourists, 2 = Humour deniers, 3 = Humour Endorsers

A series of one-way ANOVAs tested for differences between the types in terms of the measures of psychosocial adjustment at Time 1 and using standardised residual change scores from Time 1 to Time 2 (by regressing the T2 scores on respective T1 scores) (see Table 5.7). For loneliness, a significant difference was found between the different humour types, $F(2,405) = 9.96$, $p < .001$. Post hoc tests revealed that humour deniers were lonelier than both the adaptive humourists ($p < .01$) and the humour endorsers ($p < .001$). Significant differences were also found between the clusters for self-perceived social competence, $F(2,372) = 8.10$, $p < .001$, global self-worth $F(2,375) = 5.30$, $p < .01$ and number of friends $F(2,383) = 7.44$, $p < .001$. Post hoc tests revealed that humour deniers were less socially competent ($p < .01$), had lower self-worth ($p < .01$) and less friends ($p < .05$) than the adaptive humourists. Similarly, they were also less socially competent ($p < .001$), had lower self-worth ($p < .05$) and less friends ($p < .001$) than the humour endorsers. When looking at change in psychosocial adjustment between the three clusters over time, a significant difference was found between the different humour types for change in self-perceived social competence, $F(2,267) = 4.14$, $p < .05$. Post hoc tests showed that the humour deniers were found to be significantly less socially competent at Time 2 than the humour endorsers ($p < .05$).

Table 5.7

Descriptive statistics for psychosocial adjustment by humour type at T1

	1	2	3	*F(df)*
Lone	1.91[a]	2.23[ab]	1.74[b]	9.96 (2,598)***
ES	4.16	4.39	3.82	1.74 (2,400)
GSW	3.07[c]	2.84[cd]	3.04[d]	5.30 (2,556)**
SPSC	2.96[e]	2.65[ef]	3.00[f]	8.10 (2,550)***
Friends	15.48[g]	12.71[gh]	17.35[h]	7.44 (2,265)***
Changelone	-.03	.06	-.02	.22 (2,312)
ChangeES	-.07	.13	-.02	1.11 (2,315)
ChangeGSW	.06	-.15	.04	1.06 (2,263)
ChangeSPSC	-.00	-.24[i]	.20[i]	4.14 (2,267)*
ChangeFriends	.09	.01	-.10	1.03 (2, 324)

1 = Adaptive Humourists, 2 = Humour deniers, 3 = .Humour Endorsers, Means in a row sharing a subscript are significantly different, Change = Residualised change scores from Time 1 to Time 2. Lone = loneliness, ES = emotional symptoms, GSW = Global self-worth, SPSC = self-perceived social competence,

3.4. Discussion

Whilst an abundance of studies have identified links between humour styles and adjustment, the majority have been cross-sectional, with longitudinal work being noticeably lacking. Thus, this is the first study to examine the relationship between humour and psychosocial adjustment over time, with primary-aged children. It is therefore possible to begin to make stronger statements about cause and effect. Whilst different uses of humour may impact on children's adjustment, their level of adjustment may also present

them with varying opportunities to practice using different forms of humour (Klein & Kuiper, 2006).

In support of the preceding study, cross sectional results at Time 1 and Time 2 were consistent with those found previously. Most notably, for the adaptive humour styles, positive associations were again found with self-worth, self-perceived social competence and number of friends, whilst negative associations were found with loneliness and emotional symptoms. In addition, at Time 2 for self-defeating humour positive associations were found with loneliness and emotional symptoms whilst a negative association was found with self-worth. Previously, it was noted that negative consequences of self-defeating humour may occur over a longer period of time, particularly as children may only have just have begun to use this humour style. The current findings however which suggest that self-defeating humour is negatively related to psychosocial adjustment in younger children, do add some uncertainty to the previous argument.

When examining these findings it should still be acknowledged that for some of the subscales, reliability was found to be lower than desired. For example, whilst the self-defeating and global self-worth subscales were found to reach an acceptable level of reliability at Time 2, the emotional symptoms subscales remained low, suggesting that these findings should be treated with some degree of caution. The emotional symptoms subscale taken from the self-report version of the Strengths and Difficulties Questionnaire (SDQ) (Goodman et al., 1998) is said to be suitable for children aged 11-17 years, whilst the versions for children below the age of 11 years are designed to be completed by teachers or caregivers. Given the children's ability to cope with the self-report measures in the previous chapters, the decision was made to deliver the emotional symptoms subscale to a younger age group. This could therefore explain why in this case the measure was not

found to be reliable. Curvis et al. (2013) did nonetheless find that children aged 6-10 years provided meaningful SDQ data.

Structural equation modelling (SEM) was used to examine the proposed relationships between humour styles and psychosocial adjustment over time. According to Byrne (2010), there are a number of important advantages to using SEM. Firstly, by requiring the pattern of relations to be specified a priori, SEM is well suited to the analysis of data for inferential purposes. In contrast, hypothesis testing using other multivariate procedures is more difficult. Secondly, SEM also provides explicit estimates of error variance, again something which more traditional multivariate procedures are not capable of. Thirdly using SEM means that both observed and latent variables can be incorporated. Byrne (2010) argues that there are no other widely or easily applied methods for modelling multivariate relations. In the current work earlier levels of adjustment and humour styles were controlled for, meaning that a number of significant associations found using correlations did become non-significant when using SEM. Several significant effects however were still apparent. Firstly, aggressive humour at Time 1 was found to predict an increase in self-perceived social competence at Time 2. As mentioned in study two, users of aggressive humour could have a distorted view of their position in the peer group. As Fox et al. (2013) argued, self-perceived social competence is a measure of thoughts about the self and not a measure of a child's status. Whilst a child using aggressive humour, for example to manipulate or diminish others' status, may believe they are achieving their social goals, they may be doing this in a way which over a longer period of time, could be perceived negatively by others. As found by Kuiper and Leite (2010), participants had more negative personality impressions of others who used aggressive humour compared to those using the remaining humour styles.

Number of friends in the autumn term was also found to predict an increase in use of affiliative humour in the summer term. As Klein and Kuiper (2006) discussed, children who are popular and accepted by their peers are usually more proficient at using affiliative humour. These children are provided with increased opportunities to practice using adaptive humour styles in a comfortable and secure social setting. Children with fewer friends on the other hand may not have the same opportunities to develop their use of affiliative humour. It therefore seems appropriate to suggest that whilst humour styles may impact on adjustment, it may also be that adjustment affects children's use of different styles of humour.

Emotional symptoms in the autumn term were found to predict aggressive humour in the summer term. In an attempt to explain this, previous studies have identified links between depression, anxiety and aggression. For example, in a study with seventeen year olds, Kashani, Dueser and Reid (1991) found that those with higher levels of anxiety also had higher levels of verbal aggression. Similarly, Slee (1995) found that tendency to bully was related to higher levels of depression. Ialonogo, Edelsohn, Werthamer-Larsson, Crockett and Kelam (1996) hypothesised that anxious children may misinterpret situations and therefore exhibit aggressive behaviour due to their anxiety. This may therefore also be something which is reflected in children's attempts to use humour.

Self-perceived social competence in the autumn term was also found to predict decreased use of self-defeating humour in the summer. As stated by Martin et al. (2003) self-defeating humour can be used as a way to ingratiate or to seek approval from others. Those who perceive themselves to have higher social competence may already be skilled in their peer group relations and feel they have less need to seek further approval from others. Over time, they may therefore be less likely to resort to using a maladaptive humour style in order to gain acceptance. Similarly, although only approaching

significance, global self-worth in the autumn term was also found to predict decreased self-defeating humour in the summer term. As highlighted by Klein and Kuiper (2006), self-defeating humour can reflect children's underlying neediness or feelings of low self-esteem or self-worth. Children with higher levels of self-worth would therefore be unlikely to display a humour style which reflects much lower levels of self-worth. Future research could examine possible mediating variables which may help to explain these relationships further. This will be discussed later in Chapter 7.

Although the effects discussed above were significant, it is necessary to question why, for the sample as a whole, a number of predicted associations based on the literature were not found to be significant when using SEM. As argued by Fox et al. (2015) short term longitudinal studies can make it difficult to detect change, particularly if the processes under examination develop over a lengthier period of time. Notably significant effects for a humour style at Time 1 and an adjustment variable at Time 2 were lacking. Cross sectional analysis has shown significant associations between the adaptive humour styles and psychosocial adjustment variables. Moreover, Klein and Kuiper (2006) proposed that relationships between humour styles and social status in middle childhood are likely to be reciprocal. Although it can again be noted that reliability was found to be low for certain subscales, the most likely explanation for the lack of significant effects in the current study may be that for some younger children, their humour styles are still in development. Quite simply, they may not have been using certain styles of humour long enough for them to impact on their adjustment. It is also probable that children's humour styles develop at different rates, meaning that individual differences may be much more likely in younger age groups. As found by Vernon et al. (2008b) the maladaptive humour styles may be governed by both genetic and environmental factors. It is therefore likely that children's environmental humour influences will differ significantly. For example, very little is

known about the influence of both parents and peers on children's humour styles, highlighting the need for further work in this area. Hunter et al. (2016) did however find that an adolescent's use of affiliative humour was positively associated with their best friend's later use of this humour style, suggesting that peers may well influence their friends' use of humour styles.

Overall, examining longitudinal relationships between younger children's humour and adjustment may be impeded by the fact that their humour styles are still in development. For example, for affiliative humour children may need time to perfect their skills in sharing humour positively with others and telling jokes. They must learn the boundaries of what is considered socially acceptable in their peer group. For children's use of affiliative humour to impact on their social status and also their emotional well-being a longer period of time may be necessary. Similarly, in terms of self-enhancing humour, to become proficient in using humour as a coping mechanism, a child may need to have practiced using a range of coping techniques and also have encountered a range of different stressors.

In terms of the maladaptive humour styles, emotional symptoms were found to predict later use of aggressive humour, whilst aggressive humour was found to predict self-perceived social competence. This suggests that the relationship between humour and adjustment could work both ways. As discussed, self-perceived social competence is only a measure of children's beliefs about their social capabilities. It seems likely that over a longer period of time, aggressive humour may have a negative impact on social relationships which could in turn be detrimental to well-being (see Martin et al., 2003). Little is known about the way children's humour styles develop. It may be that children's use of aggressive humour begins as a fairly mild form of this humour style designed to test the boundaries of what is acceptable. For example, children may begin to tease others

demonstrating a lack of thought for their feelings. If this sort of humour is initially

tolerated by others or even encouraged, it may develop into a less mild form of this

humour style used with the aim of belittling others. At this point, the humour may be

perceived negatively and could begin to impact on a child's acceptance. As discussed in

Study Two, it may also take longer for the potentially negative effects of self-defeating

humour to become apparent, particularly as this humour style is described as involving

excessively disparaging humour. Firstly, other children may only begin to tire of this

humour style when its use becomes prolonged. Secondly, if negative cognitions are

reinforced through use of self-defeating humour, it is also likely that it may take time

before this begins to impact on children's emotional well-being. In support of this, Fox et

al. (2016a) did find bidirectional associations between humour styles and psychosocial

adjustment with older children aged 11-13 years. For example, self-defeating humour at

time one was found to predict an increase in depression at time two, whilst depressive

symptoms also predicted an increase in the use of self-defeating humour over time.

It should also be emphasised that longitudinal studies with adults are also still very

much lacking. Fox et al. (2016a) stated that to their knowledge, there are no studies which

have examined the longitudinal relationships between the four humour styles and aspects

of psychosocial adjustment, despite the large number of studies which have utilised the

HSQ. Further research with adults is therefore also needed to begin to disentangle the

causal pathways between humour and adjustment. As Fox et al. (2016a) stated, there is

little need for further cross sectional studies.

In addition to longitudinal analysis, the data from the current study was used for the

purpose of cluster analysis. As discussed previously, it is likely that people use a

combination of different styles of humour which may contribute to their adjustment in

different ways. For example, Fox et al. (2016b) suggested that using the remaining three

styles of humour alongside self-defeating may protect against the potentially detrimental outcomes of this humour style. With older children, Fox et al. (2016b) identified four different clusters, whereas in the current study, three clusters were identified. Firstly, children who are above average on all four styles of humour (endorsers), secondly children who are above average on just the adaptive styles of humour (adaptive humourists) and thirdly, children who are below average on all four humour styles (deniers). These are all humour types which have previously been identified with both older children and/or adults.

In terms of gender differences, in support of Fox et al. (2016b) whilst a greater number of girls were found to be adaptive humourists, a greater number of boys were found to be humour endorsers. This may be explained by the fact that compared to females, males have previously been found to employ the maladaptive humour styles significantly more than girls. In contrast, there were a relatively equal number of boys and girls who were humour deniers, or below average on use of all four humour styles. In an attempt to explain this humour type, it seems necessary to consider children's development. For example, it may be that children's lack of humour could stem from not being exposed to humour during their early life.

In terms of psychosocial adjustment, the humour deniers were generally shown to have lower psychosocial adjustment compared to both the adaptive humourists and the humour endorsers. This suggests that a lack of ability to effectively use any kind of humour may be particularly detrimental. Although the humour endorsers were shown to be above average on the maladaptive humour styles, they were not found to be less well-adjusted compared to the adaptive humourists. This may suggest that using the adaptive humour styles, alongside the maladaptive humour styles may act as a protective factor against the potentially negative outcomes. This could also explain why in the current chapter, the maladaptive humour styles did not necessarily relate to poorer adjustment.

When examining the humour types in relation to change in adjustment, the humour deniers were found to perceive themselves to be significantly less socially competent at Time 2, compared to the humour endorsers. As suggested by Klein and Kuiper (2006), children who are socially competent may develop a more positive sense of humour which would then add to their acceptance within a peer group. This could in turn present them with further opportunities to practice using different styles of humour. The humour deniers may therefore be deprived of opportunities to develop their social competence within a comfortable peer group environment. It should be noted however, that although the humour types identified at Time 2 were very similar to those identified at Time 1, the humour endorsers were found to be slightly below average on use of self-enhancing humour at Time 2. This therefore suggests some degree of instability. As previously discussed, younger children's humour styles may still be in development. Stable humour types may therefore not be identifiable until a later stage. For example, Fox et al. (2016b) found that humour types were replicated across the school year with secondary aged children.

3.5. Conclusion

In summary, this study adds to the very small amount of research which investigates the longitudinal relationships between humour styles and adjustment. It demonstrates that whilst younger children's use of different styles of humour may be influenced by their psychosocial adjustment, their use of certain humour styles may also influence their adjustment. Relationships between these variables however were not found to be reciprocal. This could suggest that for younger children, their humour styles are still in development. For example, over a longer period of time, it may be that children's use of humour styles begin to have an increasing impact on their adjustment. With older children

for example, Fox et al. (2016a) did find bidirectional associations between humour styles and adjustment. Either way, considering the associations between humour styles and adjustment found in both the current study and Study Two, it seems imperative to attempt to raise awareness of the role humour may play. As younger children's humour may still be in development, this seems like an ideal age group in which to make attempts to discourage more negative uses of humour and encourage more positive uses. The next chapter will therefore discuss the development and evaluation of an intervention aimed raising children's awareness of different styles of humour. Furthermore, the use of cluster analysis in the current study to identify the presence of humour types, lends support to previous research which highlights the potential importance of investigating how people use a combination of different styles of humour.

6. Intervening with younger children's humour styles

6.1. Introduction

In recent years there has been a developing interest in the application of humour in a variety of settings and contexts. However, empirical as opposed to anecdotal evidence in this area is still fairly limited (Martin, 2007). Humour has typically been applied in education, healthcare, therapy and the workplace (e.g. Berg, Parr, Bradley & Berry, 2009; Gibson, 1994; Goodenough & Ford, 2005; Ziv, 1988). Minimal research however has considered firstly the application of humour with children and secondly the use of humour interventions to improve everyday well-being and social competence. Research concerning the application of humour in children has mainly been considered in healthcare settings. For example, Goodenough and Ford (2005) found that for children as young as six, humour can be an effective coping strategy for dealing with pain related distress. Furthermore, Berg et al. (2009) stated that in the context of therapy, humour can often be overlooked, but, humour was found to be useful in the forming of therapeutic bonds and in helping children to reframe maladaptive beliefs.

Recently, two key humour based mental health interventions have been developed and evaluated. Firstly, the 'stand up for mental health' programme involves helping people turn their problems into comedy. Although anecdotal evidence for the programme is positive, empirical evaluations conducted have not demonstrated significant improvement in the well-being of participants (Rudnick et al., 2013). Secondly, 'The seven humour habits programme' (McGhee, 2010) is a personal programme that involves building verbal humour skills, finding humour in everyday life and finding the ability to laugh at yourself. Studies in several different countries have provided evidence for the programme's effectiveness in enhancing sense of humour and improving mood and alleviating stress (e.g. Crawford, 2009, as cited in McGhee, 2010). Due to the strong links found by Martin

et al. (2003) between the four humour styles and psychological adjustment variables however, incorporating specific focus on the four styles of humour into a programme may be even more effective. As Edwards and Martin (2010) stated, humour-based interventions should focus on increasing use of positive humour styles and decreasing use of negative humour styles. Delivering such an intervention to children at an age where humour styles may still be in development could be particularly beneficial.

The purpose of this chapter is to outline the evaluation of an intervention which was carried out with the aim of teaching children about different styles of humour. A description of the intervention itself is provided within the procedure section. In terms of raising children's awareness of a particular topic, finding a suitable approach was essential. The intervention presented in this chapter was based on the CATS (cross age teaching) approach, previously found to be effective when used to teach social skills to victims of bullying (Boulton, 2014). A key element of this approach is that children develop teaching materials designed to inform younger year groups at their school. This was deemed to be suitable to be adopted with a younger age group and would work over a small number of sessions.

The intervention was delivered as part of PSHE (personal, social, health and economic education) lessons. Due to children's unfamiliarity with the topic, it was necessary to develop activities to introduce them to the four humour styles and the potential consequences of using them. Although the intervention was not based on social skills training (SST), as the aim was to raise awareness of the four humour styles, some of the principles of SST were utilised. The first stage of social skills training often involves teaching children about a topic. For example, during Fox and Boulton's (2003) SST programme for victims of bullying, the trainers spent time introducing and teaching about different social skills, before using techniques to actively help children to improve their

social skills. It is proposed nonetheless that humour styles are not necessarily skills which

can be taught and that 'funniness' may not be something which can be learnt.

To ensure suitability, the activities used in the current intervention were developed

in consultation with two primary school teachers. Through the children developing the

teaching materials it was anticipated that their knowledge and understanding of the topic

would be reinforced. In the current study the intervention was evaluated by asking

participants to complete both the HSQ-Y and a specially developed measure of

understanding of humour styles prior to and at the end of the intervention.

As discussed, research has investigated the application of humour in different

settings, for example, in therapy, education, healthcare and the workplace (e.g. Berg et al.,

2009; Gibson, 1994; Goodenough & Ford, 2005; Ziv, 1988). As stated by Edwards and

Martin (2010), it would be more beneficial for specific humour based interventions to

focus on the use of humour in everyday life and aim to encourage the use of positive uses

of humour and discourage the use of more detrimental forms of humour. Based on the

findings presented in the preceding chapters, it seems there may be clear links between

children's humour styles, social relationships and well-being. For example, the

experimental study (Chapter 3) demonstrated that whilst the adaptive humour styles may

be perceived positively, the maladaptive humour styles may be perceived more negatively.

The cross sectional study highlighted associations between the humour styles and

psychosocial adjustment variables. For example, the adaptive humour styles were found to

be positively related to self-worth, social competence, peer acceptance and number of

friends. Moreover, the longitudinal study highlighted relationships between humour styles

and adjustment over time. Whilst these associations were not found to be bidirectional, Fox

et al. (2016a) did find bidirectional associations between humour styles and psychosocial

adjustment in older children aged 11-13 years. Self-defeating humour at time one for

example, was found to predict an increase in depression at time two, whilst depressive symptoms also predicted an increase in the use of self-defeating humour over time. Fox et al. (2016a) suggested that children may get caught in a vicious cycle when using this sort of humour with one problem exacerbating the other. These findings seem to provide clear evidence for the need to raise younger children's awareness of different styles of humour and aim to encourage the use of the more adaptive humour styles whilst discouraging the use of the maladaptive humour styles.

Also relevant to this chapter is the question of whether humour styles may or may not be malleable. Research in this area in particular is lacking, but Vernon et al. (2008b) did find in their study with twins, that all four humour styles were attributable to both genetic and non-shared environmental factors. Vernon et al. (2008a) however found that whilst the adaptive humour styles may be more likely to be governed by genetic factors, the maladaptive humour styles may be more governed by environmental factors. In terms of interventions, if maladaptive humour styles are learnt, it may be possible to tackle these behaviours. On the other hand, it may be more challenging to increase use of adaptive styles of humour. In spite of this it is hypothesised that following the intervention, children's use of adaptive humour styles should increase and their use of maladaptive humour styles should decrease. Similarly, it is also predicted that their understanding of both adaptive and maladaptive humour styles should increase after the intervention. As males were found to use maladaptive humour styles more in both Studies Two and Three (chapter 4 and 5), gender differences were also examined to investigate whether the intervention may be more or less effective for one gender in comparison to the other. `

6.2. Method

    6.2.1. Participants. 115 children were recruited from one primary school in central England. Participants were aged 9-11 with a mean age of 10.25 years (SD=.67), were in school years 5/6 and the sample consisted of 56 girls and 59 boys. Parental consent was gained using an opt-out method.

    6.2.2. Materials. As was the case for studies two and three, the HSQ-Y was used to assess children's use of the four humour styles (see Appendix 4.1 for HSQ-Y). In addition, the following measures were also included: Children's Understanding of Humour Styles, and Enjoyment of the Intervention.

    An eight item measure (Flesch reading ease score = 84.6, US grade level = 6.0) developed by the researcher was included to assess children's understanding of the potential consequences of using adaptive and maladaptive styles of humour (see Appendix 6.1). Two items measured each of the four humour styles with one item for each humour style assessing understanding of social consequences and one item assessing understanding of emotional consequences. Children were asked to indicate on a four point scale from strongly disagree to strongly agree, how much they agreed that Child A's use of humour would lead to a certain outcome. For the adaptive humour styles, outcomes were positive, whilst for the maladaptive humour styles, outcomes were negative. Negatively worded items were avoided due to previous research such as Marsh (1986) showing that younger children may not be able to comprehend negatively worded items. As with the HSQ-Y, a four point response scale was implemented to avoid the potential tendency for younger children to opt for a neutral mid-point response should one be available (Borgers et al., 2004). Items were scored by the response 'strongly disagree' acquiring the lowest score and 'strongly agree' acquiring the highest score for the humour style measured by that

item. Mean scores for understanding of adaptive humour styles and maladaptive humour styles were then calculated for analysis.

A single item measuring children's enjoyment of the intervention was also included in the post-intervention questionnaire. Children were asked to indicate on a 4 point scale ranging from strongly disagree to strongly agree, how much they agreed with the statement 'I enjoyed learning about different kinds of humour'. Again, items were scored by the response 'strongly disagree' acquiring the lowest score and 'strongly agree' acquiring the highest score. A blank box was also provided following the question, 'what did you like best about learning about different kinds of humour' for children to add their thoughts. This was included with the intent of adjusting future interventions to increase effectiveness (see Appendix 6.1).

6.2.3. Procedure. Following the development of questionnaire and intervention materials, recruitment was embarked upon. The same procedure used for the cross-sectional study (see chapter 4) was adopted to gain access to schools (see Appendix 6.2). To gain consent from parents the opt-out method was again used, although no children were opted out of the research (see Appendix 6.3). When contacting schools, an information sheet was also sent which provided key details of the intervention including the background, aims and duration (Appendix 6.4).

Data collection took place over two sessions two weeks apart, once prior to the intervention and once immediately after completion. The questionnaire itself, which took approximately twenty minutes to complete, was administered on a whole class basis using a standardised preamble (Appendix 6.5) to ensure consistency (see chapter 4 for further details of information/instructions given to children). Each item was read aloud to the children and they were thanked and debriefed after each session. After the second session

of data collection it was explained to the children that completing the questionnaire both before and after the intervention, would allow any changes to be investigated.

6.2.4. Intervention. The intervention itself was delivered on a whole class basis as part of PSHE. This was done over three sessions, each one week apart, which each lasted for forty five minutes. During the first session, activities, suggested and trialled by teachers, were used to introduce children to the four humour styles using simplified names (friendly humour, mean humour, humour to cheer yourself up, making fun of yourself). Beere's (2012) suggestions for the ideal lesson based on Ofsted criteria were also taken into account. Firstly, pupils were given three clear learning objectives at the beginning of the intervention which were revisited half way through the intervention. As Beere (2012) highlighted, sharing criteria for success and frequently reminding pupils to reflect on what they have learned are vital parts of the learning process. Similarly, it is also suggested that a memorable plenary can be essential in demonstrating the progress in learning that has been made. In the current intervention, although completing the questionnaire on a second occasion took the place of a final activity, children were asked to reflect on their new position as experts on the topic of younger children's humour styles.

To introduce the topic of humour styles, children were firstly asked to consider the meaning of humour and how many different kinds there might be. As stated by Beere (2012), the first learning activity should incite curiosity and open mindedness and also prepare the brain for further learning. The teacher's role should be to hold a high level of subject knowledge and to promote enthusiasm for the topic. This may therefore place a researcher in an ideal position to deliver sessions on a specific topic relevant to their research area.

The following components of the lesson should then include a combination of visual aids, high order questions, interesting resources, practical activities and

collaborative learning (Beere, 2012). To aid class discussion, in which children were questioned about their thoughts on the meaning of the four humour styles, brightly coloured slides depicting memorable images of children using humour in different contexts were presented. The purpose of this was to address a number of aims of the intervention, for example, to encourage children to think about: how they could use humour to help them to cope or to make themselves feel better; how their use of humour might make others feel; what their use of humour might make others think about them; how humour might be interpreted in different ways by different people; when humour may or may not be appropriate; what could happen if they use humour to make fun of themselves.

The approach taken can also be related to the spiral learning model, whereby pupils are introduced to concepts of the project at more than one time point, with increasing levels of detail and sometimes in different forms. This approach is based on the premise that learning will not necessarily take place at the first point in which the topic is introduced (Jaime et al., 2016). A small number of group activities therefore followed initial class discussion. To familiarise the children with the different humour styles, they were given a card game to play in small groups. The game comprised of cards featuring the names of the four humour styles, four pictures representing each of the four types of humour, four descriptions and eight outcomes of using humour in a certain way. Children were required to match the picture cards, description cards and outcome cards to the correct humour style. Beere (2012) referred to the importance of group work in enhancing the learning process for all group members and encouraging collaborative learning. The matching game also included an element of learning through play, something which is encouraged by Honeyford and Boyd (2015). Following this activity, the children took part in an activity adding thought bubbles to captioned pictures depicting use of the four humour styles. A discussion question was also raised alongside each picture to encourage children to think

further about the positive and negative consequences of different forms of humour. For this purpose, the researchers and members of teaching staff moved around the classroom eliciting small group discussions. As argued by Beere (2012), small group discussions may be superior to whole class discussions as they allow for a greater level of depth. It was also stated that Teaching Assistants should be briefed prior to the lesson to allow them to take an active role.

During the second session, children were asked to create materials of their choice e.g. posters to teach younger children about the four different humour styles. As argued by Coad (2007), using art based techniques such as posters to engage children in research can be both challenging and rewarding; for example, they often feel proud of the work they create. The children were instructed that their materials needed to inform younger pupils about the four different humour styles and also what could happen if they use them. As discussed, this approach was based on the cross age teaching intervention (CATS) developed to teach social skills to victims of bullying (Boulton, 2014). It was anticipated that through developing the materials, the children would become more aware of their own humour use and the potential outcomes of using different forms. In the third session, the children finished their materials and arrangements were made for the materials to be shared with children in the lower junior year groups (see Appendix 6.6 for toolkit developed for use by teachers which gives examples of the activities and slides presented to the children).

The CATs approach taken brings together a number of principles of learning. Firstly, it can be said to draw on some of the principles of peer assisted learning, whereby pupils act as agents in the learning process (Rohrbeck, Ginsburg-Block, Fantuzzo & Miller, 2003). Although in the current approach it was not possible for interaction to take place with those in the younger year groups, children were still required to think about how to teach the concepts to others. When considering how to provide explanations, it may also

be that information is more likely to be remembered (Webb, 1985). As argued by Greenwood, Carta and Hall (1988) there may be more gain to peer tutors than to those whose learning they assist. In the case of the current intervention, adopting a CATs approach with year groups 5 and 6 was particularly appropriate as year groups 3 and 4 were not participating. There was therefore a clear incentive to produce materials for the lower year groups.

As mentioned previously, children were given the option of creating posters on the topic of humour styles. Jeffrey and Woods (2009) highlighted the importance of creative learning when designing lessons; for example, they suggested that for children, learning that is also fun is the best way to instil knowledge. The characteristics of creative learning include pupils being able to see the relevance of what they are learning to their lives and society, having control of the learning process whereby learning is not just task orientated, as well as promoting self-motivation. In this case for example, pupils may be motivated by the incentive to help the researchers to raise awareness of the topic of humour. Although creative learning is not about learning which makes a difference to others, the activities used for the intervention may also allow children to see how understanding different styles of humour would make a difference to themselves. The last characteristic of creative learning is innovation whereby knowledge is acquired or something new is created. The creation of teaching materials would therefore fit well with this concept.

Watkins, Carnell and Lodge (2007) encourage the use of active learning in effective teaching. Important aspects of active learning include actively thinking, actively engaging with others and actively creating new materials. It is also important that learners make decisions about aspects of the learning process. As stated by Beere (2012), an element of choice makes learners feel more committed to the learning process. In the current intervention, although it was suggested that children could produce materials

including posters or leaflets, ultimately they were given a choice of what they would like to create. Watkins et al. (2007) also highlighted the importance of collaborative learning, as exemplified by, in most cases, children working together to create their materials. The act of having to make sense to a peer challenges a child to clarify and communicate in a way in which their own learning is enhanced (Watkins et al., 2007).

6.3. Results

Prior to data analysis, the data was screened and relevant assumptions were checked (see Appendix 6.7 for procedure used to screen the data and to check the assumptions).

6.3.1. Reliability analysis. Reliability of the 24 item HSQ-Y was reviewed alongside the eight understanding of humour items. Table 6.1 shows the Cronbach's alphas for all subscales.

Table 6.1

Cronbach's alphas for individual subscales (n in brackets)

Subscales	
Affiliative	.86 (114)
Aggressive	.80 (114)
Self-enhancing	.78 (114)
Self-defeating	.72 (113)
Understanding adaptive	.45 (110)
Understanding maladaptive	.42 (111)

All items for the HSQ-Y subscales were found to have acceptable reliability being above the .70 level considered satisfactory. For the understanding subscales however the reliability was lower suggesting that further development of the measure is needed with a larger sample and that the current results should be treated with caution.

6.3.2. Changes from before to after the intervention. To examine changes from before to after the intervention for males and females a 2(time) x 2(gender) mixed MANOVA was carried out taking into account all variables (see table 6.2 for means and SDs) (see Appendix 6.8 for MANOVA summary table). For the four humour styles, a significant main effect of gender was found in that boys used more affiliative humour than females $F(1,87) = 5.66$, $p < .05$, $\eta^2p = .06$. Similarly, for the maladaptive humour styles significant main effects of gender were also found in that boys used significantly more aggressive $F(1,87) = 9.73$, $p < .01$, $\eta^2p = .10$ and self-defeating humour $F(1,87) = 10.41$, $p < .01$, $\eta^2p = .11$ than girls. For self-defeating humour a significant main effect of time was also found in that participants used significantly less self-defeating humour after the intervention $F(1,87) = 20.67$, $p < .001$, $\eta^2p = .19$. No significant interaction effects were found. For understanding of adaptive humour styles a significant main effect of time was also found in that participants understood the adaptive humour styles significantly better after the intervention $F(1,87) = 10.57$, $p < .01$, $\eta^2p = .11$. For understanding of maladaptive humour styles a significant main effect of time was also found with participants understanding maladaptive humour styles significantly better after the intervention $F(1,87) = 8.41$, $p < .01$, $\eta^2p = .09$. Again no significant interaction effects were discovered.

Table 6.2.

Means (and SDs) for use and understanding of humour styles before and after the

intervention

Subscales	Before	After	Overall	*F* values
Affiliative				
Female	3.22 (.47)	3.22 (.64)	3.22 (.53)[d]	G $F(1,87)$ = 5.66*
Male	3.48 (.56)	3.50 (.60)	3.49 (.53)[d]	T $F(1,87)$ =.05
Overall	3.36 (.53)	3.37 (.63)	3.36 (.54)	G*T $F(1,87)$ =.05
Aggressive				
Female	2.05 (.54)	1.92 (.64)	1.99 (.60)[e]	G $F(1,87)$ = 9.73**
Male	2.43 (.69)	2.35 (.75)	2.39 (.60)[e]	T $F(1,87)$ =2.98
Overall	2.26 (.65)	2.16 (.73)	2.19 (.60)	G*T $F(1,87)$ =.18
Self-enhancing				
Female	2.75 (.65)	2.81 (.65)	2.78 (.63)	G $F(1,87)$ = 1.85
Male	2.97 (.65)	2.96 (.80)	2.96 (.62)	T $F(1,87)$ =.15
Overall	2.87 (.65)	2.89 (.74)	2.87 (.63)	G*T $F(1,87)$ =.36
Self-defeating				
Female	2.29 (.55)	2.09 (.59)	2.19 (.57)[f]	G $F(1,87)$ = 10.41**
Male	2.76 (.70)	2.39 (.68)	2.58 (.57)[f]	T $F(1,87)$ =20.67***
Overall	2.55 (.68)[a]	2.26 (.65)[a]	2.38 (.58)	G*T $F(1,87)$ =1.80
Understanding Adaptive				
Female	2.99 (.38)	3.57 (1.87)	3.28 (.73)	G $F(1,87)$ = .07
Male	3.09 (.48)	3.39 (.43)	3.24 (.73)	T $F(1,87)$ =10.57**
Overall	3.04 (.44)[b]	3.47 (1.29)[b]	3.26 (.73)	G*T $F(1,87)$ =1.07
Understanding Maladaptive				
Female	2.98 (.46)	3.08 (.42)	3.03 (.39)	G $F(1,87)$ = .16
Male	2.90 (.49)	3.09 (.45)	3.00 (.39)	T $F(1,87)$ =8.41**
Overall	2.93 (.47)[c]	3.09 (.43)[c]	3.01 (.39)	G*T $F(1,87)$ =.72

*$p < .05$, **$p < .01$, ***$p < .001$, n = 49 males, 40 females. Means in a row or column sharing a superscript
are significantly different. G is gender, T is time.*

6.3.3. Enjoyment. 43% of participants agreed that they enjoyed the intervention whilst

56% strongly agreed. Less than 1% of participants disagreed. There was no significant

difference between males' and females' enjoyment of the intervention t (108) = 1.17, p

>.05 (see Appendix 6.9 for a summary of children's comments about the intervention).

6.4. Discussion

Following the development of a suitable measure of humour styles for primary aged

children, various links between children's humour and psychosocial adjustment were

found. The current study therefore involved the development and evaluation of a short

intervention aimed at encouraging the use of positive forms of humour and discouraging

the use of more negative forms.

Firstly, in terms of the four humour styles, use of self-defeating humour was found

to decrease significantly after the intervention sessions. Considering the negative outcomes

found to be related to children's use of this humour style, for example depression and

anxiety (Fox et al., 2013), this finding is positive. Furthermore, in terms of the

intervention, this implies that raising children's awareness of different humour styles may

be beneficial. It also suggests that humour styles may be malleable. Previous research has

not really considered whether an individual's use of humour styles can be changed.

However, Vernon et al. (2008b) found that all four humour styles were attributable to both

genetic and non-shared environmental factors. Vernon et al. (2008a) on the other hand

proposed that maladaptive humour styles may be easier to tackle as they are less governed

by genetic factors, whilst it may be harder to increase people's use of adaptive humour

styles. Whilst these findings are inconsistent, the current findings may contribute to the

idea that certain humour styles are learnt, as opposed to innate. To support the fact that the

decrease in self-defeating humour was due to the intervention, a control group, not

receiving the intervention could also have been asked to complete the measures at the same

time points. Time constraints meant that this was not possible in the current study. It may

however be that including a control group not receiving a potentially beneficial

intervention could be deemed unethical. To overcome this, a waiting list control group as used by Fox and Boulton (2003) could be utilised. The inclusion of a control group nonetheless, would still not overcome the fact that due to their participation in the intervention, children may potentially adjust their responses to the HSQ-Y to show a decreased use of maladaptive humour styles (i.e. demand characteristics).

For aggressive humour, a reduction in use was also found after the intervention, although this decrease was not found to be significant. This could however suggest that children were responding honestly to the HSQ-Y rather than adjusting their responses based on the intervention. For example, it could be argued that following the intervention children may be even less likely to admit to use of this humour style, due to discussions surrounding it causing harm to others and users being viewed particularly negatively. Aggressive humour is thought to be used with little regard for others resulting in alienating individuals and seriously impacting on interpersonal relationships (Klein & Kuiper, 2006). As the sample size used in the current study was fairly small, it is believed that the decrease in use of aggressive humour may become significant with a larger number of participants. Placing a greater focus on the outcomes of using aggressive humour as part of the intervention could also be considered. This may be particularly worthwhile, considering that the absence of maladaptive forms of humour may be just as important as the presence of adaptive forms (Martin et al., 2003). Moreover, gender differences in use of the four humour styles were found in both Study Two and Study Three (chapters 4 and 5), with boys being found to use more of the maladaptive humour styles. The intervention was not however found to be more or less effective with one gender compared to the other. This suggests that future interventions may not need to consider how humour styles are used differently by girls and boys. A greater focus on the maladaptive humour styles however, may be particularly beneficial for boys.

For the adaptive humour styles, significant increases in use were not found. However for affiliative humour, it could be argued that being skilful in the use of this humour style may be more to do with a natural ability or having a good sense of humour. As Vernon et al. (2008a) highlighted, adaptive humour styles may be governed by genetic factors. If this is the case, an intervention which focuses on increasing the use of adaptive humour styles may be ineffective. This could strengthen the argument for placing more of an emphasis on the maladaptive forms of humour. Vernon et al. (2008b) however found that all four humour styles were attributable to both genetic and non-shared environmental factors. Furthermore, findings from Study Three (chapter 5) using cluster analysis, suggest that when used in conjunction with adaptive humour styles, maladaptive humour styles may not be detrimental. With this in mind, aiming to encourage the use of adaptive humour styles may be important in counteracting the potentially negative effects of the maladaptive humour styles.

Similarly, for self-enhancing humour a significant increase was not found. Use of this humour style as a coping technique however may increase at times of need. As highlighted by Fox et al. (2013), children may be able to use humour as a coping tool to deal with various different challenges. It may also be that the positive effects of the intervention could be more long term. Although a follow up session of data collection several months later may have been desirable, this was not possible due to year 6 leaving the school shortly after the sessions had been completed. It is hoped that following the intervention, year six children may now be equipped with the knowledge that self-enhancing humour may be a useful coping technique to utilise during their transition to secondary school.

As well as significantly reducing use of self-defeating humour, the intervention also led to an increase in children's understanding of both adaptive and maladaptive humour

styles. This suggests that children may be more aware and able to consider the consequences of their use of different forms of humour, which may be positive in terms of their social development. It is acknowledged nonetheless that further work is required to improve the reliability of the understanding of humour styles measure, primarily through the use of a larger sample size. The current findings although positive should therefore be treated with a degree of caution. In terms of developing the measure of understanding further it may be beneficial to refer to both positive and negative consequences for all four humour styles. For instance, children could be asked to indicate their agreement to statements whereby use of a maladaptive humour style is described as leading to positive as well as negative outcomes.

The overall aim of the intervention was to raise children's awareness of different styles of humour as opposed to teaching children skills surrounding how to use different styles of humour. Although a social skills training (SST) approach was considered, as discussed, it is proposed that *humour styles* are not skills which can be taught and that 'funniness' may not be something which can be learnt. As discussed by Martin (2007), humour may be thought of as a creative ability, a form of mental play or a personality trait. Moreover, as mentioned previously, the adaptive humour styles may be more governed by genetic factors, which may mean it is more challenging to increase them. Although the maladaptive humour styles may be more governed by environmental factors, in this case the aim of an intervention would be to decrease the use of these humour styles. In SST techniques such as modelling and roleplay are often employed (e.g. Fox & Boulton, 2003). It is difficult however, to envisage how these sorts of techniques would apply to teaching the four humour styles. It was therefore decided that an approach aimed at raising awareness and increasing understanding would be most effective.

In terms of the intervention itself, the current findings provide key support for use of the CAT approach (Boulton, 2014). Through producing materials (see Appendix 6.10 for example posters) to teach younger children about humour, they were able to apply their newly acquired knowledge, something they indicated was enjoyable. As discussed previously, the approach was adopted as it incorporates a number of principles of learning. Firstly, for example, it can be said to draw on some of the principles of peer assisted learning whereby children act as agents in the learning process and may benefit from considering how to explain things to others (Rohrbeck et al., 2003; Webb, 1985). An important aspect of peer assisted learning however, is interaction between the children and those they are teaching, something which due to time constraints was absent in the current intervention. As argued by Rohrbeck et al. (2003), motivation for learning is enhanced by interactions which also allow children to elaborate on the ideas they are teaching. Further intervention work could therefore place more focus on the interaction element of the CATS approach rather than focusing solely on the creation of materials. The intervention did however incorporate principles of both collaborative and active learning whereby children worked together in groups. As argued by Watkins et al. (2007), communicating with others is key to enhancing the process of learning.

Principles of creative learning can also be applied to the CATS approach, for example, the topic of humour styles is of high relevance to children's everyday lives and the incentive to assist the researchers by creating materials was intended to increase children's motivation. A further principle relevant to both creative and active learning involves the creation of something new (Jeffrey & Woods, 2009; Watkins et al., 2007). In the current work, it was suggested that children could produce posters or leaflets. As discussed in section 6.2.4., using art based techniques can help children to feel pride in what they produce and can also engage children with writing difficulties. They can

however have a number of limitations. For example, children may become overly focused on the style as opposed to substance, whilst others may feel anxious about their creative abilities (Coad, 2007). In the current intervention however, children were offered the choice of what they could produce which can help them to feel committed to the learning process (Berre, 2012).

Due to provisions within the school, children were not able to use technology such as computers as part of the intervention. As stated by Berre (2012), ICT is now an integral part of children's learning. Future developments to the intervention could therefore include more use of ICT if available within the schools. Similarly, more consideration could also be given to the fact that not all children learn in the same way. Activities could therefore be reviewed to ensure they are accessible for children with a range of different learning styles, for example, visual learners may benefit most from memorable images, whilst kinaesthetic learners may benefit from techniques such as roleplay (Dunn & Honingsfield, 2006). Berry (2015) for example, used a drama based approach in an intervention for children with emotion processing difficulties, whereby children were asked to act out short scenarios. Children could therefore be asked to act out short scenarios depicting adaptive or maladaptive forms of humour, as a way of familiarising them with the four different humour styles. Discussion could then focus around the thoughts and feelings of the different characters in the scenarios.

Whilst the original plan was to look at the effectiveness of the intervention in terms of high and low enjoyment, this seemed superfluous considering that ninety nine percent of participants either agreed or strongly agreed that the intervention was enjoyable. Furthermore, in terms of gender, the intervention was equally appealing to both males and females, and no differences were apparent in terms of the effectiveness of the intervention. Given that all participants were from the upper junior age group, it was not deemed

necessary to examine any year group differences. Further work should now be carried out to assess the effectiveness of the intervention using a larger sample size, over multiple schools. In the longer term, it may also be possible to measure the success of such sessions by investigating the impact on children's psychosocial adjustment.

In the current study, the intervention sessions took place as part of PSHE. The aims of the intervention would also fit well with the goals of SEAL (Social and Emotional Aspects of Learning). The SEAL programme is an English approach created to support and promote the social and emotional competence of children and to facilitate goals relating to relationships, behaviour and learning. For example, the programme focuses on a number of themes including empathy and conflict resolution. SEAL also focuses on the ways in which the whole school community can promote positive social and emotional development (Banerjee, Weare & Farr, 2010). The CATS approach of encouraging children to create materials to raise awareness in younger year groups would therefore seem to fit particularly well within this focus.

6.5. Conclusion

In conclusion, the current study provides an important introduction to the potential benefits of raising children's awareness of different styles of humour. It demonstrates how the findings of the preceding studies have been brought together and applied in an attempt to bring about positive change. As highlighted, studies which investigate the manipulability of humour styles are lacking. The current study may therefore add support to the view that maladaptive humour styles in particular may be malleable. Should the current findings be replicated in future studies, this would provide evidence for the value of introducing children to the consequences of different forms of humour, perhaps even as part of the school PSHE curriculum.

7. Discussion

This chapter will bring together the findings of each of the four studies in this thesis and discuss how these can be used to make recommendations both in terms of further research and how to improve children's psychosocial adjustment. In particular, this chapter will focus on: the application of the four humour styles model with junior aged children, the methods used to investigate humour with this age group, the relationship between children's use of humour and psychosocial adjustment, and children's knowledge and understanding of adaptive and maladaptive forms of humour.

7.1. The HSQ-Y

As Klein and Kuiper (2006) stated, the four humour styles model had previously not been considered with respect to children. They proposed that Martin et al.'s (2003) model of humour may be relevant to the humour used by children, particularly during the latter stage of middle childhood. They argued that adaptive or maladaptive uses of humour could either help or hinder children's position within their peer group. Although Erikson and Feldstein (2007) administered the HSQ to a sample of adolescents aged 12-15 years, when examining associations between humour styles and variables such as well-being, unacceptably low reliability coefficients were found for the maladaptive humour style sub-scales. This led Fox et al. (2013) to develop a measure of the four humour styles which was found to be suitable for older, secondary-age children. In support of previous work with adults, a number of associations between humour styles and adjustment were also found in this age group. As previously discussed, Fox et al. (2013) stated that a measure of humour styles was still needed for younger, primary aged children. A major aim of this

thesis was therefore to provide validation for a measure of the four humour styles suitable for younger children.

Fox et al. (2013) had previously questioned whether younger children are able to use all four styles of humour, suggesting that self-enhancing and self-defeating humour may develop later as they are more reliant on cognitive processes. They also questioned whether younger children have the necessary understanding and awareness to accurately self-report their own humour use. In Study two (chapter 4), through the use of both self and peer reports, agreement was found for three of the four humour styles suggesting that when using the HSQ-Y, children appear to be fairly accurate reporters of their own humour use. For self-enhancing humour a significant association was not found between self and peer reports. Given the nature of this humour style as an internal coping strategy which may not be visible to peers, this is not surprising. As stated by Cann and Matson (2014), self-enhancing humour is often not observable.

The HSQ-Y can be deemed to be a reliable measure of the four humour styles. In both Study Two and Study Four (chapters 4 and 6), acceptable reliability was found for all four humour styles. In Study Three (chapter 5), although at Time 1 reliability for the self-defeating subscale was found to be slightly below the acceptable level, at Time 2, all subscales were again found to have acceptable reliability. Furthermore, in Study Two, when the HSQ-Y was administered twice, three weeks apart, test re-test reliability was also found to be acceptable. In support of previous work with adults and older children, when administering the HSQ-Y, significant associations were also found between humour styles and psychosocial adjustment variables with younger children. Most notably in both Study Two and Study Three (chapters 4 and 5), significant positive associations were found between the adaptive humour styles and psychosocial adjustment. Consideration should still be given however to potential limitations of the HSQ-Y. Most notably, there is the

potential for socially desirable answering. For example, when using the HSQ-Y, mean scores for affiliative humour tended to be higher compared to the other three humour styles. This may indicate that children are inclined to overestimate their ability to use this humour style. As found by Allport (1961), when asked about their humour abilities, the majority of people do tend to view themselves as having an average or above average sense of humour. Furthermore, for children, socially desirable responding is considered to be quite normal, but something which decreases with age (Klesges et al., 2004). Future work could involve utilising a measure of social desirability alongside the HSQ-Y to investigate this potential limitation further.

As argued in section 2.2.3., whilst previous self-report measures of humour failed to adequately assess more maladaptive forms of humour, the four humour styles approach takes into account the fact that humour can be both adaptive and maladaptive. The approach itself has still however been criticised. As discussed previously, Cervone et al. (2010) stated that the HSQ can be criticised for assuming that people do not differ in the meaning they assign to their behaviours. The approach assumes that behaviours correspond to intentions when this may not always be the case. For example, someone using affiliative humour may do so with the intention of increasing their social status rather than for the enjoyment of their peers. Similarly, an incident of aggressive humour where someone teases someone for making a mistake may not have been driven by the need to make someone feel sad. The fact that several of the HSQ subscales, for example, affiliative and aggressive overlap could be evidence to support this. Furthermore, Cervone et al. (2010) believed that rather than trying to infer the goals which underlie the use of different styles of humour, they should be directly assessed. It could be argued that this is done with some of the items, but not all. Yet, this does not seem to affect the reliability of the sub-scales. To explore the meaning and goals of the use of different humour styles a qualitative

approach could be taken. For example, although interviews and focus groups have been utilised to investigate humour with children (e.g. Dowling, 2014; James & Fox, 2016a), qualitative research investigating different styles of humour with adults has not yet been attempted. In a similar way, it is also acknowledged that the HSQ does not always consider an individual's competence in using different styles of humour and instead tends to focus on the likelihood of humour being used in a particular way. This should also therefore be considered if future attempts are made to develop the HSQ further.

A further criticism of the HSQ came from Heintz and Ruch (2015). They examined convergence between the conceptualisation and measurement of the four humour styles by rephrasing the definitions and construct descriptions outlined by Martin et al. (2003), into self-report statements which were then administered alongside the HSQ. Analysis then involved comparing the different indicators of the four humour styles. Findings showed that good convergence was found for the self-defeating scale, but convergence was lower for the remaining humour styles. Heintz and Ruch (2015) stated that their findings only lend partial support to the convergence of the HSQ and the original conceptualisation of the four humour styles. Although Martin (2015) agreed that eventually the HSQ may be replaced by other measures, he argued that Heintz and Ruch's (2015) study had a number of limitations including questionable reliability and validity and that as yet, there is no evidence strong enough to dismiss the value of the measure. Some researchers still argue however, that it may not be appropriate to categorise aggressive and self-defeating humour as maladaptive. Leist and Müller (2013) for example, stated that for Germans, self-defeating humour is common in young adults and that laughing at yourself may be a culture specific expectation. Although it is recognised that with future research, further cultural variations in the outcomes of using different humour styles may become apparent,

based on previous evidence, the terms adaptive and maladaptive were adopted for this thesis.

As mentioned previously, in Study Two (chapter 4), peer reports of the four humour styles were utilised alongside self-reports to examine convergence. Using peer report methods alongside self-report can offer an insider perspective, multiple informants, and can also lessen concerns surrounding shared method variance (Jones et al., 2013; Perry et al., 1988). Although schools and parents may be wary of peer report, evidence shows that these methods place children at no greater risk than they already face in their everyday lives (Jones et al., 2013). As previously mentioned, teacher reports were not utilised as they may view humorous behaviours as disruptive meaning children use humour less in their presence (Damico & Purkey, 1978; Fabrizi & Polio, 1987). Similarly, parents or caregivers may not have sufficient experience of their child interacting with peers to be able to report on their use of different humour styles. As discussed, in Study Two, agreement was found between self and peer reports for three of the four humour styles. Thus, whilst recognising the limitations, future studies could attempt to utilise a combination of different methods such as parent or teacher reports to assess children's humour styles. This may be particularly important if researchers wish to investigate the potential presence of humour styles in children even younger than eight years and in different contexts.

7.2. Associations between humour styles and psychosocial adjustment in children

As well as applying the four humour styles model to younger children, another major aspect of the research for this thesis involved investigating the relationship between younger children's humour styles and aspects of psychosocial adjustment. As discussed, a multitude of studies with adults have found significant relationships between the four

humour styles and psychosocial adjustment variables such as self-esteem, anxiety and depression to name just a few (Kuiper et al. 2004). In support of research with adults, Fox et al. (2013) also found significant associations between humour styles and psychosocial adjustment in older, secondary aged children. This was seen as providing evidence for the discriminant validity of the subscales. For example, affiliative humour was found to be positively related to self-perceived social competence and self-worth. Self-defeating humour on the other hand was found to be negatively related to self-perceived social competence and self-worth and positively related to both anxiety and depression. The question of whether these associations would be present in younger children however remained unanswered.

In both Studies Two and Three (chapters 4 and 5), cross sectional findings showed that the adaptive humour styles were positively related to variables including self-worth, self-perceived social competence, number of friends and peer acceptance and negatively related to variables such as loneliness and emotional symptoms. Although the cross sectional nature of Study Two means that the direction of causality cannot be inferred, these findings suggest that relationships seen in adults and older children may be very much present in younger children. It seems that the use of adaptive humour styles in children may be particularly important in terms of their psychosocial adjustment.

For the maladaptive humour styles, associations were not as evident. For these humour styles it therefore seems that potentially negative outcomes may be more long term. For self-defeating humour, if children have only just begun to use humour at the expense of the self, then it may take longer for it to be deemed as excessive disparagement. As children get older however, peers may begin to tire of its use or become frustrated with the lack of confidence it can portray. This in turn could have a detrimental impact on relationships. Similarly, it may also be that as children get older, their constant focus on

their flaws impacts on their emotional health. As Dyck and Holtzman (2013) stated, inconsistent findings often occur between aggressive humour and measures of psychological adjustment, with several studies finding no significant results. Whilst aggressive humour may often be unrelated to well-being, it may play a detrimental role in the quality of interpersonal relationships (Martin et al., 2003). Having poor quality relationships may therefore have a negative impact on adjustment in the long term. For example, poor quality peer relationships in childhood have been found to be associated with a range of negative consequences in later life (see Kupersmidt, Coie & Dodge, 1990). Future studies could aim to incorporate a range of different age groups investigated over a longer period of time.

In each of the four studies conducted, gender differences were also explored. In support of research with adults and older children (Fox et al., 2013; Martin et al., 2003), in each of the studies utilising the HSQ-Y, boys were consistently found to use more maladaptive humour styles. This suggests that boys may be at higher risk of negative consequences and also that attempts to discourage maladaptive uses of humour should be aimed more at boys. However, in the experimental study, females using aggressive humour were rated as being significantly less popular, whilst children wanted to play with girls using self-defeating humour significantly less than boys using it. These findings suggest that maladaptive uses of humour may be particularly damaging for girls as it is not seen as normative behaviour. For example, Coyne et al. (2008) argued that even relational aggressive behaviour is thought to be less justified in girls compared to boys, as they may be seen to be straying away from appropriate gender roles.

In the cross sectional study, peer, but not self-reports suggested that boys are seen to use more affiliative humour. Warnars-Kleverlann et al. (1996) also found that boys were perceived to be more humorous by their peers. McGhee (1979) believed that boys are more

likely to create humour and that in terms of gender-role expectations the initiation of humour is thought to be more appropriate for boys. As discussed, these findings may represent a commonly held view that males are funnier than females (Mickes et al., 2012). The question of why boys may adopt the use of maladaptive humour styles more than girls remains unanswered. As Martin et al. (2003) stated it is relatively unsurprising that males engage in more aggressive humour. It is less clear why they should engage in more self-defeating humour. Future research should thus aim to understand the motivations behind the use of different styles of humour for boys and girls. Qualitative methods such as focus groups or interviews as used by Dowling (2014) and James and Fox (2016a), could therefore also be utilised for this purpose. For example, James and Fox (2016a) used paired interviews and found that some children use humour in specific circumstances to make a difficult situation easier to deal with.

Longitudinal work with both adults and children investigating the relationships between humour and psychosocial adjustment is noticeably lacking. Longitudinal studies allow for patterns over time to be assessed which enables a more complete interpretation of data. Klein and Kuiper (2006) suggested that it could be that children using the adaptive humour styles are more likely to have friends and be accepted by their peers. It could however be that socially skilled children are provided with more opportunities to develop their use of the adaptive humour styles. When considering the issue Klein and Kuiper (2006) proposed that the relationship was likely to be reciprocal in nature. Children who are socially skilled are more likely to be provided with opportunities to practice using the more adaptive humour styles. In turn these children may therefore be more likely to become accepted by their peers. In terms of the maladaptive humour styles, children who lack social skills may not have opportunities to practice using the adaptive humour styles and may therefore resort to using maladaptive forms of humour.

Fox et al. (2016a) did conduct a longitudinal study with secondary aged children, which found bi-directional relationships between humour styles and adjustment. For example, use of self-defeating humour was found to predict an increase in depression over time, whilst depressive symptoms predicted an increase in use of self-defeating humour over time. Fox et al. (2016a) suggested these findings represent a problematic spiral of thoughts and behaviours and that children may get caught up in a vicious cycle when using maladaptive forms of humour, with one problem exacerbating the other. In Study Three (chapter 5), a short term longitudinal design was used across the school year from the autumn to the summer term. Based on Fox et al.'s (2016a) findings with older children, it was predicted that bi-directional associations would be found between humour styles and adjustment in younger children.

Findings in Study Three showed a number of significant associations across time. For example, having more friends in the autumn predicted higher use of affiliative humour in the summer, whilst higher social competence in the autumn predicted less use of self-defeating humour in the summer. As mentioned previously children with friends may be provided with more opportunities to practice using affiliative humour, whilst children with higher social competence may not feel the need to use self-defeating humour as a way of gaining acceptance from others. Similarly, emotional symptoms in the autumn predicted more use of aggressive humour in the summer. This may be explained by the fact that anxious children can often display aggression as a response to misinterpreting situations, due to their anxiety (Ialonogo, et al., 1996). As discussed, these findings suggest that humour is influenced by children's psychosocial adjustment. Unexpectedly however, aggressive humour in the autumn was also found to predict higher self-perceived social competence. As discussed previously, Fox et al. (2013) argued that self-perceived social competence is a measure of thoughts about the self and not necessarily a measure of a

child's status. Whilst a child using aggressive humour may believe they are achieving their social goals, they may be doing this in a way which over a longer period of time, could be perceived negatively by others. In the future, research should aim to use a wider range of measures of social competence rather than relying on self-report measures. For example, peer ratings of liking to assess acceptance and peer nominations to assess 'popularity' could be utilised. The above finding does however suggest that humour styles also influence psychosocial adjustment as well as adjustment influencing humour styles.

Two main questions arose from the longitudinal study. Firstly, why many of the associations found in cross sectional analysis were not found to be significant across time. Secondly, why, as predicted, associations between humour styles and adjustment were not found to be bi-directional. As argued previously, it may be that at this age, children's humour styles are still in development. Furthermore, it could be that such a short term longitudinal design may make it difficult to detect change (Fox et al., 2015). When brought together, these findings indicate that examining longitudinal associations between younger children's humour styles and psychosocial adjustment may prove difficult unless conducted over a longer period of time.

It is also acknowledged that the associations found in Study Three (chapter 5) could be confounded by shared method variance. As discussed in section 2.2.4. if the same method is used to assess two different variables, a significant correlation between the variables may be partly explained by the fact that measurement variance is shared between the two variables. For example, rather than explaining an association between two variables, a correlation may represent the degree to which a child who has negative feelings about one aspect of their life, may also tend to have similar feelings about another aspect of their life (Hawker & Boulton, 2000). Although it may not always be the case that shared method variance is a cause for concern (Conway & Lance, 2010), relying solely on

self-reports when investigating the relationships between humour styles and adjustment could be problematic.

Further research should also aim to examine a number of possible mediator and moderator variables. For example, variables such as perceived social support have been found to mediate the relationships between humour styles and adjustment in adults (Dyck & Holtzman, 2013). Similarly, humour styles themselves have also been found to both mediate and moderate the associations between different adjustment variables. Kuiper and McHale (2009) for instance, found that different humour styles mediated the relationship between self-evaluative standards and self-esteem. Examining mediation and moderation could further add to understanding of the specific role humour styles may play in children's psychosocial adjustment. This knowledge may be particularly useful for therapists working with children and allow them to gain a greater understanding of a child's needs. Research with children however, is yet to consider possible mediator and moderator variables. Overall, considering the lack of longitudinal studies investigating the associations between humour and adjustment in adults and children, this seems to be a clear area for further research.

In the future, use of longitudinal studies across a longer period of time would also be beneficial in allowing for more to be known about the development of different humour styles, throughout the course of childhood. Subsequently, more could then be done to increase understanding of the development of associations between humour and psychosocial adjustment. For example, Fox et al. (2013) found associations between self-defeating humour and adjustment in secondary aged children. A longitudinal study following children as they transition to secondary school may therefore be useful in identifying when this relationship becomes apparent. It may also be beneficial to consider the potential to measure different styles of humour in children even younger than eight. If

some children are using all four humour styles by this age, then it is likely that they may actually begin to use them at an even earlier point. Further consideration should therefore be given to possible methods for assessing humour styles which would be appropriate for children below the age of eight. For example, Sletta et al. (1995) utilised one to one interviews with children aged 4-7 years to administer a questionnaire about humour and social behaviour to participants verbally. Similarly, as used in Study One (chapter 3), vignettes describing a particular humour style could be utilised in one to one interviews with children below the age of 8 years. This would allow younger participants to report on whether they use that particular style of humour portrayed in the vignette.

Galloway (2010) and Leist and Müller (2013) identified humour types in adult samples suggesting that individuals use a combination of different styles of humour. Following this work, Fox et al. (2016b) identified the presence of distinctive humour types in secondary aged children, through the use of cluster analysis. Differences in humour types were then found in terms of psychosocial adjustment. As Fox (2016b) stated, identifying humour types extends knowledge beyond the examination of simple correlations. In view of this, cluster analysis was also utilised in the current work to examine the potential presence of humour types in younger children. In this case, three clusters were identified, all of which have been previously identified with both older children and/or adults. Firstly, adaptive humourists (above average on the adaptive humour styles), secondly, humour endorsers (above average on all humour styles) and lastly, humour deniers (below average on all humour styles). In terms of psychosocial adjustment, findings suggested that a lack of ability to use any form of humour may be particularly detrimental. Moreover, in support of Fox et al. (2016b), the findings suggested that when used in combination with adaptive humour styles, the maladaptive humour styles may not be as detrimental. These findings may help to explain why for the thesis as a whole,

significant associations between the maladaptive humour styles and psychosocial adjustment were not necessarily evident.

7.3. Children's understanding of different humour styles

Both the experimental and intervention studies contribute to our knowledge of children's understanding of different styles of humour. Firstly, the experimental study which was the first of its kind to take this approach, investigated children's perceptions of children using different styles of humour. An experimental approach was taken as used in a number of studies with adults, for example Zeigler-Hill et al. (2013) found that those using the adaptive styles of humour were rated more positively. Findings of the experimental study showed that children had more positive perceptions of those using the adaptive compared to the maladaptive styles of humour, namely aggressive. Their understanding of self-defeating humour was slightly less clear from this study. Using an experimental approach allowed for the consequences of using different styles of humour to be explored without the potential weaknesses associated with self-reports. Moreover, the fact that the humourists were presented as real people and the use of an unrelated design, meant that it was harder for participants to establish the aim of the study. Further research could expand on the experimental approach taken, for example, by exploring children's perceptions of humour use in different contexts such as in the playground and in the classroom. It may be that even the use of adaptive humour styles are perceived negatively in certain contexts. For example, children may not perceive the use of affiliative humour in a classroom environment as appropriate. Similarly, the experimental study can also be criticised for its use of written vignettes. As Kuiper and Leite (2010) highlighted, providing a written description does not represent the more complex way that personal information is processed in real life. They suggested that use of recorded social interactions should be attempted in further work of this nature. This could allow for the situation or context

presented to be varied and a combination of different humour styles to be portrayed. As discussed in chapter 5, individuals do not tend to use just one style of humour.

The final study also investigated children's understanding of both adaptive and maladaptive forms of humour, both before and after an intervention aimed at raising children's awareness of different styles of humour. In this study, understanding of the different humour styles was assessed using a questionnaire whereby children were asked to indicate how much they agreed that a child's certain use of humour would lead to a particular social or emotional outcome. The measure which was developed specifically for the study was found to have low internal reliability in the current study. Results should therefore be treated with some caution whilst future efforts should involve further work to improve the reliability of the measure.

The intervention itself involved using a cross age teaching (CATS) intervention. As outlined in chapter 6, this approach was previously used by Boulton (2014) to teach social skills to victims of bullying and involved children creating materials to teach younger children about a topic. It is anticipated that through creating the materials, the older children become more engaged with the topic. Following discussion with teachers, it was concluded that this approach would be particularly suitable for primary aged children. As discussed in chapter 6, it can also be related to a number of principles of learning including peer assisted learning, active learning and creative learning.

After being introduced to the different humour styles and the potential consequences of using them through activities and discussions also suggested by teachers, children created materials such as posters and leaflets to teach children in lower year groups about what they had learnt. As well as completing a measure of understanding of different styles of humour before and after the intervention, participants also completed the HSQ-Y. Findings showed that whilst children's understanding of both adaptive and

maladaptive forms of humour increased after the intervention, their use of self-defeating humour also decreased significantly after the intervention. Although it is acknowledged that children may have adjusted their answers to the HSQ-Y, following their participation in the intervention, a significant decrease in use of aggressive humour was not found which could suggest that children were responding honestly. As argued previously, greater demand characteristics may be expected for aggressive humour, as other children's negative perceptions of users of this humour style were evident due to its hurtful nature.

Whilst the sample size utilised was fairly small, this was the first study of its kind to attempt to raise awareness of different styles of humour and to encourage the use of adaptive styles of humour, whilst discouraging the use of more maladaptive forms. It is hoped that the participants will progress to secondary school with knowledge of the potential importance of humour and the ability to consider what they may be portraying to others, through their use of different styles of humour. As discussed in section 6.4., this may have positive outcomes in terms of their social development and also their psychological adjustment. For example, children may be equipped with the knowledge that for some, humour can be used as an effective coping technique. Similarly, they may be discouraged from using self-defeating humour which has previously been found to be related to anxiety and depression in older children (Fox et al., 2013). To assess the effectiveness of the intervention over a longer period of time, follow up sessions could also be considered in future research.

The findings of the intervention study in particular raise a number of questions for future research. Firstly very little research has explored the degree to which humour styles may be malleable and whether they are influenced by genetics or environmental factors. A small amount of research has explored the role of genetics in the development of humour styles. For example, Vernon et al. (2008b) conducted a twin study and found that all four

humour styles were attributable to both genetic and non-shared environmental factors. Vernon et al. (2008a) on the other hand found that whilst the adaptive humour styles may be more governed by genetic factors, the maladaptive humour styles may be down to environmental factors. As discussed previously, this suggests that the maladaptive humour styles may be easier to tackle, which could explain why use of self-defeating was found to decrease significantly, whilst use of the adaptive increased only marginally.

The role of environmental factors such as the influence of caregivers has been largely ignored. As findings of the intervention study demonstrated, if it is possible to increase children's understanding of the outcomes of their use of humour, perhaps caregivers could be equipped with the knowledge to be able to do this. Similarly, as proposed by James and Fox (2016a), children may be influenced by their parents' or guardians' use of humour. Currently, no research has yet explored children's use of different styles of humour in relation to their parent's use of humour styles. This seems like an essential next step in exploring the origins of children's use of humour styles. If it is that the development of children's humour styles is influenced by the humour use of their parents, interventions to raise awareness may be most effective if targeted at caregivers. Future work to examine the relative influence of parents in children's humour development compared to peers or teachers may now be useful. It should be acknowledged however, that children may be influenced by different people in different age groups. For example, Hunter et al. (2016) found that adolescents in best friend dyads became similar in their use of affiliative humour over time. Furthermore, it is also possible that children may be influenced to use humour differently in different settings, for example at home or at school.

In terms of the intervention itself, further work is firstly needed to assess the effectiveness of the approach with a larger sample size and a greater number of schools and to develop the measure of understanding of humour styles, which was found to have

low reliability. Similarly, other approaches to increasing children's understanding could be trialled using alternative approaches. For example, Berry (2015) used a drama based approach in an intervention for children with emotion processing difficulties, whereby children were asked to act out short scenarios. Children could therefore be asked to act out short scenarios depicting adaptive or maladaptive forms of humour, as a way of familiarising them with the four different humour styles. Discussion could then focus around the thoughts and feelings of the different characters in the scenarios.

The activities used in the intervention to introduce the children to humour styles had been recommended by teachers and the CATS approach seemed to be highly effective in terms of engaging children with the topic. As the decrease in use of aggressive humour post intervention was not found to be significant, future interventions could focus more on this humour style. If use of aggressive humour is more governed by environmental factors as opposed to genetic factors, then it may be appropriate to give more time to this humour style compared to the adaptive humour styles.

To inform the development of future approaches to raising children's awareness of adaptive and maladaptive uses of humour, there is still a need for further research to investigate the ways in which children employ different styles of humour. James and Fox (2016a) conducted a qualitative study using paired interviews to assess children's use and understanding of self-enhancing and self-defeating humour. This study, however, was very small scale and only explored the self-focused humour styles. It would therefore be beneficial to build on this qualitative research, with the aim of gaining more knowledge about how children actually use humour in different ways. This could perhaps lead to the expanding of the four humour styles model and would also provide an opportunity to ask children more specifically about motivations and the outcomes of using different humour styles.

7.4. Future research

As discussed in sections 2.2.5. and 2.3.4., research with adults and also older children has identified many significant associations between the four humour styles and different psychosocial adjustment variables. The current research therefore aimed to investigate the associations between younger children's humour styles and a range of different psychosocial adjustment variables. There are still many associations found with adults however, which remain unexplored with younger children. For example, as discussed in sections 2.2.4. and 2.2.5., with adults, significant associations have been found between humour styles and variables including aggression, rumination, shyness, social support, empathy and attachment. These may all be relevant to children. For example, previous studies investigating humour styles have assessed factors such as parental warmth in retrospect (Kazarian et al., 2010). Furthermore, children prone to aggression may also adopt using an aggressive style of humour, whilst those who score highly on self-defeating humour, may also score highly on rumination as they become increasingly focused on their flaws. In terms of the adaptive humour styles, children who score highly for social support may have increased opportunities to continue practising their use of adaptive humour styles; those who score highly on shyness however, may not have the same opportunities. In addition, previous work has also explored various different aspects of self-esteem. For example, Saraglou and Scariot (2002) found associations between humour styles and aspects of self-esteem including social, family and education related. The current work however only examined associations between humour styles and global feelings of self-worth. Further research could therefore aim to address this gap.

As discussed in section 2.3.1., children are thought to reach the final stage of humour development at around the age of 7 years (McGhee, 1974). By this age it is suggested that children may use humour for emotional mastery and as a way of dealing with various challenges imposed on them (McGhee, 1979). They may also have an ability to manage emotions using more cognitive as opposed to behavioural strategies and are capable of recognising that thoughts can be manipulated (Altshuler & Ruble, 1983). Children may also however, display maladaptive explanatory styles which include self-derogatory attributions (Nolen-Hoeksema et al., 1991). The findings in this thesis suggest that for some children, at the age of eight they may begin to externalise these thoughts in attempts to make others laugh.

With middle childhood also comes increased concerns about peer acceptance, adhering to social norms and avoiding negative evaluation by others (Rubin, Bukowski & Parker, 2006). When explaining others' behaviour children from around 8 years of age are more likely to refer to self-presentational motives and can also use a variety of self-presentational tactics and goals (Banerjee, Bennett & Luke, 2010; Banerjee & Yuill, 1999). Children may however still vary in the degree to which they think about how they are seen by others (Banerjee, 2002). Taking this into account, it may be useful to investigate how humour may relate to the degree to which children consider how they are viewed by others and how likely they may be to utilise self-presentational tactics and goals. For example, those using the maladaptive humour styles may be less likely to consider how others view them.

Children's humour styles may also be related to a number of other social cognition variables. For example, studies with adults have found associations between humour styles and a number of different facets of emotional intelligence (Gignac et al., 2014; Greven et al., 2008; Yip & Martin, 2006). Similarly, children's humour styles may also be related to

their moral development and theory of mind. For example, during their junior school years, according to Piaget (1932) children move to the final stage of moral development. As they get older, it is proposed that children become less egocentric and more capable of empathy. Children older than 7 years can imagine how another person feels so their behaviour may be guided by the effects it has on others as well as themselves (Piaget, 1932). In terms of humour styles it would therefore be expected that junior aged children would be able to imagine how their humour, namely aggressive humour would make others feel. For children younger than 7 years however, this may not be the case. When investigating the development of humour styles in younger children it may therefore be useful to also examine their emotional and moral development. This would allow for a greater understanding of the degree to which younger children may be able to imagine the effects that their humour use has on others.

Similarly, in a longitudinal study with children (mean age 10 years), Bosacki (2013) found that children who scored higher for theory of mind also scored higher for self-perceptions of humour and their perception of humour in others. It may therefore now be useful to investigate how different styles of humour may relate to theory of mind. This could potentially lead to future research which considers humour styles in children with special educational needs or learning disabilities, or with disorders such as autism. Children with Asperger's syndrome and autism have deficits in terms of their communication skills, social cognition and pragmatics. They may therefore have difficulties appreciating and producing humour in a social context and may not process humour in the same way as typically developing children (Hoicka, 2014). As found by Reddy, Williams and Vaughan (2002), children with autism particularly struggle when it comes to laughing with others, but can show an increased use of unshared laughter. In terms of the four humour styles, the fact that children with autism may use humour more

when they are alone, could suggest they may be more proficient in using self-enhancing rather than affiliative humour. The fact that they are less likely to use adaptive emotion regulation strategies however means that this is doubtful (Khor, Melvin, Reid & Gray, 2014). This could therefore mean that children with autism may be more likely to resort to using more maladaptive forms of humour such as self-defeating. Moreover, aggression can sometimes be considered as a symptom of autism (Campbell, Malone & Kafantaris, 1990). This may also come across if children make attempts to use humour.

It is acknowledged that none of the work included in this thesis considers the potential for cultural differences in children's humour styles. The HSQ (Martin et al., 2013) has received cross cultural validation among European (Saraglou & Scariot, 2002), Chinese (Chen & Martin, 2007) and Arabic samples (Kazarian & Martin, 2004). Gender differences and associations with adjustment have also been found to be consistent. It is therefore reasonable to expect that findings from studies using the HSQ-Y would also be supported in other cultures. School based interventions aimed at raising awareness of humour styles however, may require alternative approaches based on cultural variations. For example, as mentioned in section 7.1, it could be that the maladaptive humour styles are not always considered maladaptive in certain cultures.

Lastly, whilst there has been a substantial body of research which has sought to examine teasing in children, it has not been covered extensively in this thesis as it is viewed as only one aspect of aggressive humour. It may however be a key way that young children exhibit aggressive humour and could be related to all four humour styles.

Although there are considerable variations in the way teasing is defined, it is thought to integrate elements of aggression, humour and ambiguity (Shapiro, Baumeister & Kessler, 1991). When defining teasing, a distinction should be drawn between prosocial and antisocial teasing (Barnett, Burns, Sanborn, Bartel & Wilds, 2004). Whilst prosocial

teasing can be thought of as humorous, playful and enjoyable, antisocial teasing can be considered hurtful to the target and intended to bring about social harm (Kowalski, 2004). Antisocial teasing may therefore by more closely aligned to aggressive humour and could be considered by some to be a form of verbal victimisation (Hawker & Boulton, 1997). Prosocial teasing on the other hand could be used as a form of affiliative humour. As significant associations have often been found between affiliative and aggressive humour, it may be easy for children to cross a line into laughing at the expense of others.

Considering how and why teasing behaviours develop can be linked to the development of aggressive humour in general. As found by Vernon et al. (2008b), aggressive humour may be attributable to both genetic and environmental factors, suggesting that some teasing behaviours may be learnt. It has been found that for even young children, acts signifying aggression could be seen as humorous or appealing (Sinnott & Ross, 1976). Hostile forms of humour have been observed in young children, particularly boys (Groch, 1974); whilst at a young age children also begin to show preference for humour at the expense of others dissimilar to them (McGhee & Duffey, 1983; McGhee & Lloyd, 1981).

Whilst it may be that the type of children who tease are those thought to be bullies, it may also be that some teasers are funny or popular children or those who may hold a position of dominance or power. Their reasons for teasing may be to joke around, to indicate they dislike someone or to make themselves feel good (Shapiro et al., 1991). Watts (1998, as cited in Kowalski, 2001) also found that children thought others teased to look cool, display power and to hurt and put down others. Whilst children described teasers as rude and abusive they also described them positively and portrayed them as having a sense of humour. This in particular highlights the difficulty children may have in understanding the motives of teasing and further demonstrates the need to differentiate

between prosocial and antisocial teasing. There may also be a fine line between aggressive and affiliative humour. As mentioned previously, aggressive humour is considered to be a form of antisocial teasing. For example, the items from the HSQ-Y, 'When I tell jokes I don't think about who I might upset' and 'I find it funny when people laugh at someone to make them look silly' represent this humour style. Whilst affiliative humour may also involve witty banter, friendly teasing or playfully poking fun at others, this is done in a benign way, with the intention of enhancing relationships as opposed to belittling others (Martin et al., 2003).

As stated by Klein and Kuiper (2006), users of self-defeating humour, who may already be victimised, tend to portray neediness and low self-esteem. Children prone to using this style of humour may therefore be particularly at risk of being teased. It therefore seems particularly important to raise awareness of the consequences of aggressive forms of humour such as teasing. Moreover, increasing children's awareness of adaptive forms of humour, namely self-enhancing, may help children to cope with the potentially negative effects of being teased.

Ultimately, based on the findings of this thesis it is recommended that humour could usefully be covered as part of primary schools' PSHE (personal, social, health and economic education) curriculums. Ofsted (2010) stated that PSHE is intended to support children's personal development as well as their learning and to ensure children develop fully as individuals and as members of families and social communities. Effective PSHE should equip children with knowledge, understanding and attitudes to help them in their daily lives. As outlined in chapter 6, covering the topic of humour would also fit well with the goals of SEAL (social and emotional aspects of learning). As discussed previously, the SEAL approach was created to support and promote the social and emotional competence of children and to facilitate goals relating to relationships, behaviour and learning

(Banerjee et al., 2010). For example, the programme focuses on a number of themes including empathy and conflict resolution, both of which could be related to humour styles.

Following Study Four, a toolkit was created containing the activities and lesson plans used in the humour styles intervention. This self-contained resource is designed to be used by primary school teachers without the need for researchers with previous knowledge of the topic. Whilst initially the purpose of the toolkit would be to raise children's awareness of different styles of humour, the ultimate aim would be to improve children's well-being and to enhance their social relationships. It is hoped that alongside the findings contained in this thesis which emphasise the relationship between humour styles and psychosocial adjustment, the creation of this resource may strengthen the argument for covering the topic of humour as part of PSHE.

7.5. Conclusion

To conclude, this thesis brings together four research studies which apply the four humour styles model to junior aged children; this is an age group which had not previously been investigated. Due to the development of a measure of humour styles suitable for this age group, it now seems apparent that by the age of 8 years, some children may use all four humour styles. Moreover, associations between humour styles and adjustment found in adults and older children may also be present in younger children, particularly for the adaptive humour styles. The longitudinal study, although only short-term, indicated that whilst psychosocial adjustment may influence children's use of different styles of humour, their humour styles could also influence their adjustment. Longitudinal research conducted over a longer period of time would now be beneficial.

In terms of children's knowledge of different styles of humour, adopting an experimental approach to assess perceptions of those using different humour styles,

indicated that children do seem to understand that some forms of humour may not be positive. Their understanding of the self-defeating humour style however was slightly less clear. In an attempt to raise children's understanding of both adaptive and maladaptive forms of humour, a short intervention was designed and delivered to a sample of junior aged children. Whilst findings suggested that the intervention was successful in increasing children's understanding of different humour styles and discouraging their use of self-defeating humour, further work is required.

Overall, future research should now aim to expand upon the current work to address a number of further research questions, for example, how and when humour styles in children develop. Although children's humour styles seem to be important in terms of both their social and emotional adjustment, further research would help to locate humour in the broader context of development and address the issue of just how important humour might be. In sum, the work conducted for this thesis and the creation of the HSQ-Y has begun to address the gap in research exploring the role of humour styles in younger children and sets the scene for a number of future studies.

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Appendices

Appendix 3.1 - Example Vignettes and questionnaire

Children were presented with one of the four following vignettes describing **either** Tim **or** Rose.

Tim/Rose is ten years old and loves reading. He/She has one brother and an older sister who takes him/her swimming every week. Tim/Rose has a dog called Rex and enjoys going to the park to play with him. When Tim/Rose is with his/her friends he/she likes to tell a lot of jokes and funny stories to make other people laugh. He/She has always found it is easy to make other people around him/her laugh.

Tim/Rose is ten years old and loves reading. He/She has one brother and an older sister who takes him/her swimming every week. Tim/Rose has a dog called Rex and enjoys going to the park to play with him. When Tim/Rose is at school he/she often tells jokes about other children in front of their classmates without thinking about how they might feel. Sometimes he/she also makes fun of or teases his/her friends in a nasty way.

Tim/Rose is ten years old and loves reading. He/She has one brother and an older sister who takes him/her swimming every week. Tim/Rose has a dog called Rex and enjoys going to the park to play with him. When Tim/Rose is feeling sad or worried, he/she thinks about funny things to make himself/herself feel better. He/She also likes to think back to funny times when he/she is by himself/herself.

Tim/Rose is ten years old and loves reading. He/She has one brother and an older sister who takes him/her swimming every week. Tim/Rose has a dog called Rex and enjoys going to the park to play with him. When Tim/Rose is with his/her friends, he/she often gets carried away making jokes about himself/herself to try and make people laugh. He/She also talks a lot about things he/she is not very good at in a funny way.

For the following questions, please tick one box

1. How much would you like to play with Tim/Rose?

Not at all	Not much	A bit	A lot
☐	☐	☐	☐
1	2	3	4

2. How much would you like to work with Tim/Rose?

Not at all	Not much	A bit	A lot
☐	☐	☐	☐
1	2	3	4

3. How much would you like to be friends with Tim/Rose?

Not at all	Not much	A bit	A lot
☐	☐	☐	☐
1	2	3	4

4. How popular do you think Tim/Rose is?

Not at all popular	A bit popular	Popular	Very popular
☐	☐	☐	☐
1	2	3	4

5. How would being around Tim/Rose make you feel about yourself?

Very bad	Bad	Good	Very good
▭	▭	▭	▭
1	2	3	4

6. What do you think about Tim/Rose?

   Just tick one box for each pair of words

	1	2	3	4	5	
Bad						Good
Horrible						Nice
Unpleasant						Pleasant
Unfriendly						Friendly
Unkind						Kind
Uncool						Cool
Boring						Fun
Mean						Caring

7. Can you write a sentence to tell us why you ticked the numbers you did?

_____

_____

_____

Thanks for taking part!

Appendix 3.2 – Ethical approval

Keele University

RESEARCH AND ENTERPRISE SERVICES

27th January 2014

Lucy James
DH1.23
Dorothy Hodgkin Building

Dear Lucy,

Re: Children's perception of other children's humour

Thank you for submitting your application for review. I am pleased to inform you that your application has been approved by the Ethics Review Panel. The following documents have been reviewed and approved by the panel as follows:

Document	Version	Date
Summary of Proposal	2	16/01/14
Letters of Invitation	2	16/01/14
Information Sheets	2	16/01/14
Consent Forms	2	16/01/14
Questionnaire	1	28/11/13

The panel is grateful for the clarification of how you will manage the issues of a child writing anything that might be a cause for concern and acknowledge that this may not occur at all, but recommend that this is reviewed.

Thank you for letting us know that you have not approached the schools - we did ask for names as it appeared from your original letter to the 'parents/guardians' a School's name was included. Sometimes informal approaches to Schools are made through various contacts/conferences etc. and this is fine but formal invitation is as you note subject to ethical approval. The panel were clarifying if you had or had not approached Schools.

The panel would agree with you that the Letter of invitation should not be too long and is about raising interest. However it can also be useful to send other paperwork with it, such as consent forms, information sheet, such that when the researcher does the follow up the potential participant already has the information for an informed discussion etc. and may well expedite the process.

If the fieldwork goes beyond the date stated in your application, you must notify the Ethical Review Panel via the ERP administrator at uso.erps@keele.ac.uk stating ERP1 in the subject line of the e-mail.

If there are any other amendments to your study you must submit an 'application to amend study' form to the ERP administrator stating ERP1 in the subject line of the e-mail. This form is available via http://www.keele.ac.uk/researchsupport/researchethics/

Yours sincerely

pp

Dr Jackie Waterfield
Chair – Ethical Review Panel

CC   RI Manager
        Supervisor

Appendix 3.3 – Head teacher letter and consent form

12th February 2014

Dear Head teacher

I am a Psychology PhD student at Keele University and I am currently conducting a piece of research alongside two third year students. We are interested in investigating children's responses to different styles of humour. The research would involve children reading a short paragraph and answering some questions during class time. If possible, we would like to come into your school at a time convenient to you and work with classes from years 5 and 6.

The research will present the children with a description of a boy or a girl using one of four different humour styles, which are either positive or negative. The following questions, which I have attached, will assess how much the participating children would like to work with and play with the child in the scenario, how the information about the child made them feel themselves and also ask them to rate their perceptions of the child's personality. The whole session should take about 20 minutes to complete on a whole class basis. It is hoped that from the research we can discover if the way children use humour changes the way their peers relate to them.

Informed consent will be obtained from the pupils and they will have the right to withdraw from the study at any time. They will also be told that it is fine to only answer the questions that they feel comfortable answering. For those who do not wish to take part we will provide an activity as an alternative to completing the questionnaire. After finishing the tasks the children will be fully debriefed. We will also provide a letter for parents to obtain parental consent on an opt-out basis.

All answers will be treated as confidential and the data collected will be anonymous. The children will however be informed that in the event of them disclosing something or writing something extra on their questionnaire that raised concern, we would pass this onto the school. We will be present to talk the children through the task and also to answer any questions should they arise, we will ask, however, that if any questions come up afterwards that they be directed to a teacher or a parent.

Ideally we would like the data collection to happen in February/March 2014. I will be in contact with you soon to discuss this further. If there are any further questions please do not hesitate to get in touch, I would be extremely grateful of your assistance with this study.

With very best wishes

Yours Sincerely

Lucy James, Sofia Zahid and Shannen Fuller

Lucy James

PhD researcher

School of Psychology

Keele University

l.a.james@keele.ac.uk

Sofia Zahid

Third year Psychology student

School of Psychology

Keele University

Shannen Fuller

Third year Psychology student

School of Psychology

Keele University

Head teacher consent form: Children's perceptions of others' use of humour

The research we are conducting aims to investigate how children in school years 5 and 6 perceive other children's use of humour. More specifically it explores what children think and how they feel when people around them use both positive and negative forms of humour.

Pupils will be asked if they would like to read a very short description about a child using humour and take part in a questionnaire which should take around twenty minutes to complete. The children will be made aware that their answers will be kept confidential. The only exception to this would be if they were to say something that suggested they were at risk and this would then be passed onto the school. It will also be made clear to them that they can stop taking part at any time and they will be fully debriefed afterwards. Parental consent will be gained using an opt-out method.

I have read and understood the information above, have seen the research materials, and have been given the opportunity to ask questions. I give my consent for the above study to be carried out in

_____ School.

Head teacher signature: _____

Print name: _____

Date: _____

Researcher signature: _____

Print name: _____

Date: _____

Contact details

Lucy James

PhD researcher

School of Psychology

Keele University

l.a.james@keele.ac.uk, 01782 734402

Appendix 3.4 – Letter to parents

Date

Dear Parent / Guardian,

I am a Psychology PhD student at Keele University investigating humour in younger children. I am currently working with two third year psychology students at the university, to investigate how children perceive other people's use of humour. Details of the research, which we will be carrying out in your child's school are given below. **If, after reading this information, you decide that you do NOT wish your child to take part in the research then please complete the reply slip and return it to the school as soon as possible**. If you do not complete the reply slip we will assume that you are willing for your child to participate in the research.

We are investigating children's perceptions of other people's use of humour. In particular, we are interested in what children think and how they feel when people around them use positive and negative forms of humour and how gender may affect their perceptions. This sort of research is important as it can help to identify both the positive and negative consequences that may result from using humour in different ways.

In the near future we would like year 5 and 6 pupils to fill out a questionnaire on a whole class basis; the questions ask about their responses to a description of a child displaying positive or negative forms of humour. The questionnaire should take up just 20 minutes of class time and has been approved by the head teacher who is happy for us to carry out the research.

Your child will be made fully aware of what the research is about and we will obtain their informed consent before they complete the questionnaire. Their responses will be anonymous and will be treated as confidential. They will also be able to stop taking part at any time and will

be told to only answer the questions that they feel comfortable answering. The children will be fully debriefed after they have completed the questionnaire and directed to speak to a teacher or parent if they are unsure of anything. If you have any queries regarding this research please do not hesitate to contact the project supervisor: Dr Claire Fox: Tel 01782 733330 email: c.fox@keele.ac.uk.

If you have a concern about any aspect of this study, you should speak to Claire Fox. If you remain unhappy about the research and/or wish to raise a complaint about any aspect of the way that you have been approached or treated during the course of the study please contact Nicola Leighton, Research Governance Officer, Research & Enterprise Services, Dorothy Hodgkin Building, Keele University. ST5 5BG, Tel: 01782 733306.

Yours faithfully

Lucy James, Sofia Zahid and Shannen Fuller

– – – – – – ——————————

REPLY SLIP: HUMOUR RESEARCH   **Please return to your child's class teacher by _____**

I **DO NOT** give permission for (child's name) _____ to take part.

Child's year group:_____ Child's Class:_____

PRINT NAME:_____

SIGNED:_____   DATE:_____

Children's perceptions of others' humour instructions

Hi, my name's _____ and I've come from Keele University to see if you would like to help me with some research I am doing on what children think and how they feel when other children make jokes and try to be funny. I would like you to help me by reading a short description of someone and filling in a questionnaire.

Consent and Confidentiality

As you will probably know, I sent a letter home to your parents or guardians to tell them about what you would be doing today. If you feel you don't want to take part then that is fine, I can give you another activity. If there are any questions you feel that you don't want to answer, then it is fine to leave those questions out or to stop taking part. I am not going to show your answers to anyone in the school. The only time this would be different is if you were to write something extra on your questionnaire or say something to me today that made me feel worried, I would have to pass this on to one of your teachers.

Completing the Questionnaires

The questions I am going to be asking are about what **you think,** so I just want you to think about the right answer for you and not for anybody else in the class. It's not a test so there aren't any right or wrong answers but I would still like you to do the questionnaire quietly and not show or talk about your answers with anyone else. You can use your arm to cover up your answers if you like.

Now I'm going to hand out the questionnaires, before we start, would you be able to fill out the details on the front, it asks for your age, class, year group and whether you are a girl or a boy. You don't need to put your name on. Is everyone

ok with that? If at any time you have any questions or would like some help, just put up your hand, but it is really important that you don't shout out.

Guiding the children through the questionnaire

Now turn over the page and we will start. At the top of the page, you will see a short description of someone. I would like you to spend a few minutes reading it, but remember not to talk about it with anyone else. If you would like some help with reading, just put your hand up.

(When children seem to have read the description) Now we are going to do the questions together to make sure we are all at the same place.

So the first question asks you how much you would like to play with the person in the description. I just need you to tick one box (talk children through the different options).

(Move onto the next questions in the same way)

Now you will see a grid with some words on the left hand side and some words on the right hand side. Could you put a tick in the box you think best describes the person. So for the first one, if you think they are bad then you would put a tick in the first box or if you think they are good then you would put a tick in the last box, or you might think they are somewhere in the middle. (Talk children through the rest of the grid).

Just to finish you will see a question that asks you to write a sentence or two. For this one, I would like you to think about all the questions that we have done and tell me what made you choose the responses you gave. If you can't think of anything to write then that is fine.

Debrief

We have now finished. Thank you very much for doing the questions for me. You have been really helpful and I will be able to learn a lot about what children think and how they feel when other children use humour and try to be funny. This will help us to find ways to help other children think about what happens when they try to be funny in different ways.

What I didn't tell you before was that not everybody had the same descriptions; in fact there were four different ones. We also made it look like they had come from the CBBC website, but we did make them up ourselves. Can anyone guess why we did this or did anyone guess that other people might have had different descriptions? Does anyone mind that we made it seem like they were real?

So some people had a description about a child who finds it easy to tell jokes and funny stories, whilst others had a description about someone who makes fun of or teases other children. The third description was about a child who thinks of funny things to make themself feel better and the last was about someone who gets carried away making jokes about themself. Also some of the descriptions were about a boy and some of them were about a girl.

I will be able to look at whether you thought different things and felt differently depending on which description you had and whether the person was a girl or a boy. Does anyone have any questions they'd like to ask about what we have done today?

Just to remind you that I won't show any of the answers you have given to anyone. If after I have gone today you have any more questions or are unsure of anything, please do talk to one of your teachers about it. But thank you again and I hope that you have enjoyed what we have done today.

Appendix 3.6 – Screening the data and checking the assumptions

Chapter 3 - Before proceeding with the analysis a number of assumptions for MANOVA outlined by Pallant (2010) were tested. As stated by Pallant (2010), due to the large sample size, the testing some of assumptions is not strictly necessary. Firstly a matrix of scatterplots was produced to check for the presence of a linear relationship between pairs of independent variables. As stated by Pallant (2010) MANOVA is quite robust to modest violations of normality. Multivariate normality was checked by obtaining Mahalanoblis distances. In this case the Mahal. Distance maximum value was slightly larger than the critical value determined by using a chi-square table, suggesting there may be multivariate outliers. Further investigation indicated that only one person had a score that exceeded the critical and therefore did not warrant removal from the sample.

Univariate normality was checked by using a number of steps including inspection of histograms, detrended normal Q-Q plots and boxplots. The 5% trimmed mean values were very similar to original means suggesting that any more extreme scores had little influence on the mean. Although the Kolmogorov-Smirnov statistic was significant suggesting possible violation of the assumption of normality, Pallant (2010) stated that this is common in larger sample sizes. Similarly, the risk of skewness and kurtosis is also reduced with a large sample size.

To check for multicollinearity and singularity a correlation was run to check the strength of the correlations between the dependent variables. This indicated that the majority were moderately correlated. Furthermore, Box's test of equality of covariance matrices was larger than .001 suggesting that the assumption of homogeneity of variance-covariance matrices had not been violated. In contrast, for Levene's test of equality of error variances some variables were less than .05, indicating that this assumption had been

violated. As suggested by Tabachnick and Fidell (2007), a more conservative alpha value

of .025 was therefore adopted for these variables.

Appendix 3.7 - MANOVA summary table for humour style, gender and gender of pp

Source	SS	df	MS	F	P	η^2_p
Play with						
HS	21.82	3	7.27	11.64	< .001	.11
Gender	.34	1	.34	.54	> .05	.00
Gender pp	4.44	1	4.44	7.11	< .01	.02
HS*Gender	7.16	3	2.39	3.82	< .01	.04
HS*Gender pp	.84	3	.28	.45	> .05	.01
Gender*Gender pp	2.12	1	2.12	3.39	> .05	.01
HS*Gender*Gender pp	2.83	3	.94	1.51	> .05	.02
Error	180.01	288	.63			
Total	2472.00	304				
Work with						
HS	13.89	3	4.63	5.81	<.001	.06
Gender	.28	1	.28	.36	> .05	.00
Gender pp	.39	1	.39	.49	>.05	.00
HS*Gender	3.15	3	1.05	1.32	>.05	.01
HS*Gender pp	6.71	3	2.24	2.81	<.05	.03
Gender*Gender pp	.45	1	.45	.57	> .05	.00
HS*Gender*Gender pp	.82	3	.27	.34	> .05	.00
Error	229.46	288	.80			
Total	2123.00	304				
Friends with						
HS	41.38	3	4.63	5.81	< .001	.15
Gender	.12	1	.12	.15	> .05	.00
Gender pp	4.09	1	4.09	5.03	< .05	.02
HS*Gender	1.83	3	.61	.75	>.05	.01
HS*Gender pp	2.76	3	.92	1.13	>.05	.01
Gender*Gender pp	.83	1	.83	1.02	>.05	.00
HS*Gender*Gender pp	3.50	3	1.17	1.44	.23	.02
Error	234.03	288	.81			
Total	2657.00	304				
Popularity						
HS	17.83	3	7.27	11.64	<.001	.08
Gender	.00	1	.00	.00	>.05	.00
Gender pp	.07	1	.07	.11	>.05	.00
HS*Gender	8.00	3	2.67	3.82	<.01	.04
HS*Gender pp	.62	3	.21	.30	>.05	.00
Gender*Gender pp	2.28	1	2.28	3.26	>.05	.01
HS*Gender*Gender pp	.24	3	.08	.11	>.05	.00
Error	201.35	288	.70			
Total	1842.00	304				

Feel like

HS	36.66	3	12.22	23.42	< .001	.20
Gender	.70	1	.70	1.35	>.05	.01
Gender pp	.56	1	.56	1.07	>.05	.00
HS*Gender	3.53	3	1.18	2.26	>.05	.02
HS*Gender pp	2.32	3	.77	1.48	>.05	.02
Gender*Gender pp	.01	1	.01	.01	>.05	.00
HS*Gender*Gender pp	3.01	3	1.00	1.92	>.05	.02
Error	150.27	288	.52			
Total	2583.00	304				

Overall Perceptions

HS	67.51	3	22.50	31.28	< .001	.25
Gender	.08	1	.08	.12	>.05	.00
Gender pp	.25	1	.25	.34	>.05	.00
HS*Gender	5.15	3	1.72	2.39	>.05	.02
HS*Gender pp	3.63	3	1.21	1.68	>.05	.02
Gender*Gender pp	.85	1	.85	1.18	>.05	.00
HS*Gender*Gender pp	1.16	3	.39	.54	.05	.01
Error	207.20	288	.72			
Total	4087.03	304				

ANOVA Summary table for play/work and humour style

Source	SS	df	MS	F	P	$\eta^2 p$
HS	44.36	3	14.79	12.84	< .001	.10
Error	399.51	347	1.15			
Play/work	12.00	1	12.00	27.81	< .001	.07
Play/work*HS	3.25	3	1.08	2.51	> .05	.02
Error	149.69	347	.43			

Appendix 3.8 – Summary of Qualitative data

Short summary of unusable qualitative data (Experimental study)

The participants were asked 'Can you write a sentence to tell us why you ticked the numbers you did?' The majority of the data was unusable for three main reasons - individual words rather than a sentence were provided, an opinion of Rose/Tim was given with no real explanation, or content from the vignette was simply repeated.

In some cases children seemed unable to write a full sentence and instead listed individual words or short phrases. For example, in response to a vignette describing affiliative humour answers included 'very nice kind person' and 'she is good, nice, pleasant, friendly and kind'. Similarly for aggressive humour children responded with short phrases such as 'she will be hated' and 'because he is horrible and selfish'.

In the same way that children gave short responses they also tended to state an opinion without really expanding, for instance 'Rose is fun to play with even if she is a girl', 'sounds like a nice person, does not sound like a bad person' and 'she is friendly but a bit uncool as well'. Children did appear to have given thought to their answers, for example, 'cool as I have many friends like him', 'because he is a bully' 'I think his jokes would be fun', but seemed to struggle to explain their justifications further. This was often the case in response to the maladaptive humour styles, for example, 'I think she might be nasty to me', 'I think he doesn't mean to be nasty' and 'might take it too far'.

Although there was not an adequate amount of quality data for analysis, some participants did attempt to justify their choices. Examples include, 'If he is funny and you are upset, he would make you laugh and try and cheer you up', 'I ticked the ones I did because he does his best to make his friends laugh, he sounds fun', 'I think she would be fun but could also get boring after a while. I would not like to work with someone who

thinks everything is a joke', and 'trying too hard to be funny isn't going to get friends that way'. There was not a sufficient amount of content however, to identify themes from the data.

For the following questions, please tick one box

I can be funny without having to try very hard

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

When other people are laughing at someone, I will join in

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

When I am feeling sad, I think of something funny to cheer myself up

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

I let other children laugh or joke about me more than I should

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

My jokes and funny stories make people laugh

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

When I think of something that is funny about someone, I say it, even if it gets me into trouble

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

If I am feeling worried, it helps to think of something funny

Not at all like me Not like me A bit like me A lot like me

☐   ☐   ☐   ☐

I am often the person others are laughing at

Not at all like me Not like me A bit like me A lot like me

☐   ☐   ☐   ☐

It is easy for me to think of funny things to say when I am with other children

Not at all like me Not like me A bit like me A lot like me

☐   ☐   ☐   ☐

When something is really funny, I will laugh about it even if it will upset someone

Not at all like me Not like me A bit like me A lot like me

☐   ☐   ☐   ☐

If something is difficult, it helps to find something funny about it

Not at all like me Not like me A bit like me A lot like me

☐   ☐   ☐   ☐

Making fun of myself makes other people laugh

Not at all like me Not like me A bit like me A lot like me

☐   ☐   ☐   ☐

I am a funny person

Not at all like me Not like me A bit like me A lot like me

☐   ☐   ☐   ☐

When I tell jokes, I do not think about who I might upset

Not at all like me Not like me A bit like me A lot like me

☐   ☐   ☐   ☐

Even if I am feeling angry or upset, I can still find something to laugh about

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

Letting others laugh at me is a good way to make friends

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

People often laugh at the funny things I say.

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

I find it funny when people laugh at someone to make them look silly

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

I can find things to laugh about when I am on my own

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

I often find myself laughing with others about things I am not very good at

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

I find it easy to make people laugh

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

I sometimes laugh at other people if my friends are too

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

Being a funny person stops me from being sad

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

At times, I make jokes about myself when I am with others a bit too much

Not at all like me   Not like me   A bit like me   A lot like me

☐   ☐   ☐   ☐

These questions are about how you feel, just tick one box

I am lonely

Not at all like me   Not like me   A bit like me   A lot like me

[ ]   [ ]   [ ]   [ ]

I feel alone

Not at all like me   Not like me   A bit like me   A lot like me

[ ]   [ ]   [ ]   [ ]

I feel left out of things

Not at all like me   Not like me   A bit like me   A lot like me

[ ]   [ ]   [ ]   [ ]

I have no one to talk to

Not at all like me   Not like me   A bit like me   A lot like me

[ ]   [ ]   [ ]   [ ]

For each sentence you first need to decide whether you are more like the people on the left side or the right side of the page. Then, you need to decide whether this is sort of true for you or really true for you. For each sentence you tick only <u>one</u> of the four boxes.

1) Some children are often   **Other children are pretty**

unhappy **with themselves**   BUT   *pleased* **with themselves**

Really true for me	Sort of true for me		Sort of true for me	Really true for me
☐	☐		☐	☐

2) Some children *don't* **like**   **Other children** *do* **like the**
the way they are leading their life   BUT   **way they are leading their life**

Really true for me	Sort of true for me		Sort of true for me	Really true for me
☐	☐		☐	☐

3) Some children are usually   BUT   **Other children are often not**
happy with themselves   **happy with themselves as a person**

Really true for me	Sort of true for me		Sort of true for me	Really true for me
☐	☐		☐	☐

4) Some children like the kind of person they are   BUT   **Other children often wish they were someone else**

Really true for me	Sort of true for me		Sort of true for me	Really true for me
☐	☐		☐	☐

5) Some children are very happy being the way they are   BUT   **Other children wish they were different**

Really true for me	Sort of true for me		Sort of true for me	Really true for me
☐	☐		☐	☐

6) Some children are not happy with the way they do a lot of things   BUT   **Other children think the way they do things is fine**

Really true for me	Sort of true for me		Sort of true for me	Really true for me
☐	☐		☐	☐

1) Some children find it hard

to make friends   BUT   **Other children find it's**

pretty easy to make friends

Really true   Sort of true   Sort of true   Really true

for me   for me   for me   for me

☐   ☐   ☐   ☐

2) Some children have a lot

of friends   BUT   **Other children don't have**

very many friends

Really true   Sort of true   Sort of true   Really true

for me   for me   for me   for me

☐   ☐   ☐   ☐

3) Some children would like to

have a lot more friends   BUT   **Other children have as**

many friends as they want

Really true   Sort of true   Sort of true   Really true

for me   for me   for me   for me

☐   ☐   ☐   ☐

4) Some children are always doing things with a lot of other children   BUT   **Other children usually do things by themselves**

Really true for me	Sort of true for me		Sort of true for me	Really true for me
☐	☐		☐	☐

5) Some children wish that more people their age liked them   BUT   **Other children feel that most people their age do like them**

Really true for me	Sort of true for me		Sort of true for me	Really true for me
☐	☐		☐	☐

6) Some children are popular with others their age   BUT   **Other children are not very popular**

Really true for me	Sort of true for me		Sort of true for me	Really true for me
☐	☐		☐	☐

Appendix 4.2 – Peer report tasks

Your classmates - please put a tick in the boxes if you think the sentence matches the name.

	They find it easy to make people laugh	They find it funny when people laugh at someone to make them look silly	Even if they are feeling angry or upset, they can still find something to laugh about	They think letting people laugh at them is a good way to make friends	They are one of my closest friends

Do you have one friend who you are closest to? If so, can you write their name below?

_____

Please circle how much you would like to play with each of your classmates

1	2	3	4	5
I wouldn't really like to play with them at all	I wouldn't like to play with them	I would like to play with them a bit	I would like to play with them	I would like to play with them very much

	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5

Thanks so much for all your help!

Appendix 4.3 – Example Activity for peer report task

Put a tick in the box if you think the sentence matches the character

	Plays a lot of football	Lives in a big house	Good at singing	Likes magic	Is a caring person	Is hardworking
The Queen		✓				
David Beckham						
Katy Perry						
Harry Potter						
Gary Barlow			✓			

Appendix 4.4 – Ethical approval

Keele University

RESEARCH AND ENTERPRISE SERVICES

19th March 2014

Lucy James
School of Psychology
Dorothy Hodgkin Building

Dear Lucy,

Re: Younger children's humour, psychosocial adjustment and peer acceptance

Thank you for submitting your application for review. I am pleased to inform you that your application has been approved by the Ethics Review Panel. The following documents have been reviewed and approved by the panel as follows:

Document	Version	Date
Summary of Proposal	2	13/03/14
Letter of Invitation	2	13/03/14
Information Sheets	2	13/03/14
Consent Forms	2	13/03/14
Questionnaire	1	31/01/14

If the fieldwork goes beyond the date stated in your application, you must notify the Ethical Review Panel via the ERP administrator at uso.erps@keele.ac.uk stating ERP1 in the subject line of the e-mail.

If there are any other amendments to your study you must submit an 'application to amend study' form to the ERP administrator stating ERP1 in the subject line of the e-mail. This form is available via http://www.keele.ac.uk/researchsupport/researchethics/

If you have any queries, please do not hesitate to contact me via the ERP administrator on uso.erps@keele.ac.uk stating ERP1 in the subject line of the e-mail.

Yours sincerely

pp

Dr Jackie Waterfield
Chair – Ethical Review Panel

CC   RI Manager
          Supervisor

Research and Enterprise Services, Keele University, Staffordshire, ST5 5BG, UK
Telephone: + 44 (0)1782 734466   Fax: + 44 (0)1782 733740

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Appendix 4.5 – Letter and consent form to head teacher

Dear _____

Date

I am a PhD student at Keele University based in the school of psychology. During the current school year I will be carrying out a piece of research examining the relationship between children's humour, well-being and peer acceptance as part of my wider PhD research which investigates humour in younger children.

If possible, I would like to come into your school, at a time convenient for you, and work with the children from years 4, 5 and 6. The children would be asked to complete two questionnaires, which will take around 30 minutes each to complete over two sessions. The questions, which I have attached, have been designed especially for younger children. They explore children's use of humour when alone, for example to cope with a difficult situation and their use of humour when around other people, for instance, using humour to put themselves down or laughing and joking with other children. Also, some questions ask about how the children feel, for example whether they feel happy with themselves or if they feel lonely.

A further section of questions will involve the children being asked to complete a peer report activity which would involve them ticking the names of classmates who fit a particular description for example, being able to make people laugh easily or putting themself down to make others laugh. They will also be asked how much they like to play with other children in their class and who are their closest friends. As the children will be reporting on their peers I will talk to them about the importance of not discussing their answers with other children. Please be reassured that peer report is a widely-used method in this type of research which many children seem to enjoy. The children will also only be reporting on other children who are also taking part. Due to some of the problems associated with asking children to self-report on topics like humour and peer acceptance it is really important that peer reports are also included in the research.

Given the inherently social nature of humour there is a compelling case for studying its role within the context of peer acceptance. In addition, a wealth of research has indicated that there may be a strong links between humour and emotional health. Humour may therefore be a useful tool for children to cope with all sorts of difficulties they may face including problematic peer relationships. Ultimately, carrying out this sort of research is greatly important as it can help to identify both adaptive and maladaptive uses of humour and the positive and negative outcomes that may result from them.

Informed consent will be obtained and pupils will be told it is fine to only answer questions that they feel comfortable answering. They will have the right to withdraw at any point. After the questionnaire has been completed, pupils will be fully debriefed about the nature of the study. I will provide a letter for parents to gain parental consent on an opt-out basis.

The children's responses will be treated as completely confidential and no child will be named in any reports written. As I will explain to the children, in the event of them disclosing something during the session or writing something extra on their questionnaire that raises concern about their safety, I would pass this onto the school. In terms of support for children, they will be encouraged to speak to the class teacher about any questions they might have in relation to the research.

If you would be happy for your school to take part, let me know and I can arrange to discuss my research with you further. My contact details can be found below. I would be really grateful for your help with the research.

 Please do not hesitate to contact me if you have any further questions.

With very best wishes,

Yours sincerely

Lucy James

PhD Psychology student

Email: l.a.james@keele.ac.uk

Supervisor:

Dr Claire Fox

School of Psychology

University of Keele

Email: c.fox@keele.ac.uk

Head teacher consent form: Younger children's humour, psychosocial adjustment and peer acceptance

The research aims to investigate use of humour, well-being and peer acceptance in children in years 4-6. More specifically it examines both positive and negative uses of humour and how children feel about themselves. It also uses a peer report method whereby children are required to nominate classmates who use humour in a particular way and classmates who are their closest friends. They will also be asked to indicate how much they would like to play with their classmates.

Pupils will be asked if they would like to take part in two questionnaires, over two sessions of data collection, which should take around 30 minutes each to complete. The children will be told about the importance of not sharing their answers with other children and made aware that their answers will be kept confidential. The only exception to this would be if they were to say something that suggested they were at risk and this would then be passed onto the school. It will also be made clear to them that they can stop taking part at any time and they will be fully debriefed afterwards. Parental consent will be gained using an opt-out method.

I have read and understood the information above, have seen the research materials, and have been given the opportunity to ask questions. I give my consent for the above study to be carried out in

_____ School.

Head teacher signature: _____

Print name: _____

Date: _____

Researcher signature: _____

Print name: _____

Date: _____

Contact details

Lucy James

PhD researcher

School of Psychology

Keele University

l.a.james@keele.ac.uk, 01782 734402

Appendix 4.6 – Letter to parents

Dear Parent/Guardian,

Date

I am a Psychology PhD student at Keele University investigating the role of humour in children's lives. I am writing to tell you about a piece of research I will be carrying out at your child's school in the near future, as part of my PhD. **If, after reading this information you decide you do NOT wish your child to take part in the research then please complete the reply slip and return it to the school by _____.** If you do not complete the reply slip I will assume that you are happy for your child to participate in the research.

I am interested in finding out about the different ways children use humour and also how this influences their well-being and also their relationships with other children. I will therefore be asking the children if they would like to take part in two questionnaires, over two sessions, answering some specially designed questions.

The first questions that the children will be asked explore the ways in which children use humour. More specifically they assess children's use of humour when they are alone, for example, to cope with a difficult situation or to cheer themselves up. Also, they investigate their use humour when they are with other people. This can include positive uses of humour, for instance telling funny stories, but also more negative uses of humour such as teasing other children or perhaps putting themselves down in a funny way to make others laugh. The children will also be asked questions about how they feel, for example if they feel happy with themselves or if they sometimes feel left out.

A further section of questions will involve the children being asked to complete a peer report activity which would involve them ticking the names of classmates who fit a particular description for example, being able to make people laugh easily or putting themself down to make others laugh. They will also be asked how much they like to play with their classmates and who are their closest friends. As the children will be reporting on their peers I will talk to them about the importance of not discussing their answers with other children. Please be reassured that peer report is a widely-used method in this type of research which many children seem to enjoy. Both previous research and my own experience suggest that children are unfazed by these sorts of tasks and children will also only be reporting on other children who are also taking part. When the findings of the research are brought together and written up, no names of children will be included. Due to some of the

problems associated with asking children to self-report on topics like humour and peer relationships it is really important that peer reports are also used.

This sort of research is highly beneficial as it can help in developing ways to help children to use humour in a positive and constructive way and identify any sorts of harmful consequences that may stem from the use of negative types of humour.

The research which will be completed on a whole class basis will last around 30 minutes for each session and children in years 4, 5 and 6 will be asked if they would like to take part. The questionnaire responses will be kept completely confidential. The children will be informed beforehand that in the case of them writing something extra or saying something that suggests that they or someone else is at risk, the school will be informed. The children will be encouraged to ask questions and speak to their teacher or someone at home if they do have any concerns. In addition, the children will be told that they can stop taking part at any time and they only have to answer questions that they feel comfortable answering. I will also explain to the children afterwards how their answers will be useful to my research.

The head teacher has approved the questions and is happy for me to conduct my research. If you have any concerns or further questions, please get in contact with me, either by email l.a.james@keele.ac.uk or by telephone 01782 734402. I would be happy to discuss my research further with you. The project supervisor Dr Claire Fox (Senior Lecturer in Psychology) can also be contacted by email c.fox@keele.ac.uk or by telephone 01782 733330. If you remain unhappy about the research and/or wish to raise a complaint about any aspect of the way that you have been approached or treated during the course of the study please contact Nicola Leighton, Research Governance Officer, Research & Enterprise Services, Dorothy Hodgkin Building, Keele University. ST5 5BG, Tel: 01782 733306.

If after reading this information you **would not** be happy for your child to take part, please complete the reply slip and return it to the school.

Yours faithfully

Lucy James

_____

Humour Research Reply Slip: return to the class teacher by
_____.

I **do not** give permission for (child's name) _____to take part.

Child's year group:_____ Child's Class:_____

PRINT NAME:_____

SIGNED:_____

DATE:_____

Appendix 4.7 – Instructions given to children (session1 and 2)

Humour, psychosocial adjustment and peer report instructions session 1

Hi, my name's _____ and I've come from Keele University to see if you would like to help me with some research I'm doing. My research is on the things children find funny, how you make yourself and other people laugh and also about how children feel about themselves. I would like you to help me today by filling in a questionnaire and then another one in a week or two. The questions today are about things you find funny and some are about how you feel. Next time I come in I will be asking some questions about your classmates, for example how your classmates use humour or try to make people laugh and who in the class are your closest friends.

Consent and Confidentiality

As you will probably know, I sent a letter home to your parents or guardians to tell them about what you would be doing today. If you feel you don't want to do the questionnaire then that is fine, I can give you another activity. Also, if you take part today, it doesn't mean that you have to take part next time I come in. Some of the questions are quite personal so if there are any questions you feel that you don't want to answer, then it is fine to leave those questions out or to stop taking part. Only I will see your answers and I won't show them to anyone else and nobody in the school will see them. The only time this would be different is if you were to write something extra on your questionnaire or said something to me today that made me feel worried, I would have to pass this on to one of your teachers.

Completing the Questionnaires

The questions I am going to be asking are about what **you think** so I just want you to think about the right answer for you and not for anybody else in the class. It's not a test so there aren't any right or wrong answers but I would still like you to do the questionnaire very quietly without talking to anyone else. I'm going to give you a few minutes to think about whether you would like to take part before we begin. If there is anything else you would like to ask, just put your hand up.

Now I'm going to hand out the questionnaires, let me know as I am coming round if you don't want to take part. Before we start, would you be able to fill out the details on the front, it asks for your name, age, class, year group and whether you are a girl or a boy. The only reason I need you to put your name on is so that if you

fill in the questionnaire next time, I can match up your answers. Is everyone ok with that? Don't turn over the page until we are all ready to start.

If you would like to turn over the page - the first questions are about **how you make jokes and try to be funny**. I am going to read out each question and give you time to think about your answers carefully. For each question I would like you to tell me whether the sentence that I read out is, not at all like you, not like you, a bit like you or a lot like you, by ticking **just one** of the boxes underneath.

We've now finished the first set of questions, which you've done really well. If you turn over, we will now do the next set together which are about how you feel about yourself.

There are only a few of these. They are just like the other questions so again I would just like you to tick one box. So the first one is ….

These next ones are also about how you feel. **First I need to explain how I would like you to fill in these ones in.**

I would still like you to tick just **one** box for each of the questions. What I will do is read out the two sentences, first I need you to decide which sentence is most like you, so it might be the one on the left hand side of the page, or it might be the one on the right. Once you have chosen one, could you tell me whether it is sort of true for you, or really true for you. **So it's just one box that I need you to tick, and not one from each side.** We will have ago at the first one.

Debrief

Thank you so much for doing the questionnaire for me. You have been really helpful and I will be able to learn an awful lot about how children try to be funny and how they feel about themselves. So for example, I might be able to look at things like if children who can think of funny things to cheer themselves up also feel quite good about themselves or if children who make jokes about themself feel lonely.

Does anyone have any questions they'd like to ask about what we have done today?

Just to remind you that I won't show any of the answers you have given to anyone. If after I have gone today you have any more questions or are unsure of anything, please do talk to one of your teachers about it. But thank you again and I hope that you have enjoyed what we have done. I will be back in a week or two to ask if you would like to take part in another questionnaire that has some questions about your classmates. This will give you some time to think about if you would like to take part again and to talk to your friends, parents or teachers about it if you would

like to. If before then you decide you don't want to take part, then that is fine. I look forward to seeing you all again next time.

<center>Humour, psychosocial adjustment and peer report instructions session 2</center>

Hi, I'm back again to see if you would like to take part in another questionnaire. If you remember, my name's _____ and I've come from Keele University to see if you would like to help me with some research I'm doing. My research is on the things children find funny, how you make yourself and other people laugh and also about how children feel about themselves. I would like you to help me today by answering some more questions. Some are like last time and are about you and some are about your classmates, for example about how your classmates use humour or try to make people laugh and about who in the class are your friends.

Consent and Confidentiality

Just a reminder of what I talked to you about last week. I sent a letter home to your parents or guardians to tell them about what you would be doing today. If you feel you don't want to do the questionnaire then that is fine, even if you took part last time, I can give you another activity. If there are any questions you feel that you don't want to answer, then it is fine to leave those questions out or to stop taking part. Only I will see your answers and I won't show them to anyone else and nobody in the school will see them. The only time this would be different is if you were to write something extra on your questionnaire or said something to me today that made me feel worried, I would have to pass this on to one of your teachers.

Completing the Questionnaires

Even if you weren't here last week you can still take part today as long as someone at home has said that it's ok. The questions I am going to be asking are about what **you think** so I just want you to think about the right answers for you and not for anybody else in the class. It's not a test so there aren't any right or wrong answers but I have given you an extra piece of paper to cover your answers. It is really important that you don't share your answers with anybody else, and that you don't talk about what you have put with any other children afterwards. As some of the questions ask about other people, I would like you to have the chance to tell me what you think in private and so this way it is fair as nobody will know what anyone else has put. Just like last time, I'm going to give you a few minutes to think about whether you would like to take part before we begin. If there is anything else you would like to ask, just put your hand up.

Now I'm going to hand out the questionnaires, let me know as I am coming round if you don't want to take part. Before we start, would you be able to fill out the details on the front again, it asks for your name, age, class, year group and whether you are a girl or a boy. If you remember, the only reason I need you to put your name on is so that I can match your answers to the ones that you gave last time. Is everyone ok with that? Don't turn over the page until we are all ready to start.

If you would like to turn over the page - these first questions are the same as last time and ask about **how you make jokes and try to be funny**. Again, I am going to read out each question and give you time to think about your answers carefully. For each question I would like you to tell me whether the sentence that I read out is, not at all like you, not like you, a bit like you or a lot like you, by ticking **just one** of the boxes underneath.

Now we have finished those questions which you did really well, the next set of questions will be asking about your classmates, but first we are going to do a little activity that will help me to show you how to answer the questions. On the next page you will see a grid with some famous names down the side and some sentences across the top. What I would like you to do is have a look at the names first of all then have a look at the sentences and put a tick in the box if you think the sentence matches the name. Some have been done for you. If we have a go at the others together, there aren't any right or wrong answers and it doesn't matter if you aren't sure who they are. So the next one is _____, should we put a tick in the box that says _____ etc.

Ok, so now we are going to do exactly the same, but with your classmates' names. This time the sentences are about how they use humour or try to be funny and if they are one of your close friends. You will also see a question that asks you to write the name of your closest friend if you have one.

 In a minute when I ask you, can you do the same as we have just done for me on your own? Remember it is really really important that you keep your answers to yourselves and do not talk to anyone else. I would like you to think very carefully about who the sentences are really like rather than just ticking everyone's names for all the sentences.

Just before we start I would like to check that only the children taking part today have their name on the list, this makes it fairer for everyone. Also if anyone is taking part today and can't see their name on the list, put your hand up and we can all add your name.

(Check only children taking part are on **both** lists) **If a child is away/not participating** – Would you be able to put a big line through their name so you remember not to put a tick in any of the boxes for them. You will also find their name on the next page, could you also do the same there for me.

If a child's name is not on the list – Can we all add _____'s name to the list and also to the list on the next page.

Also, wherever you see your name, could you put a big circle around it so you remember not to put any ticks for you. So the sentences say (read out sentences). If you would like to have a look over the page you will see the names of your classmates again, this time I would like you to circle a number to tell me how much you would like to play with that person, so for example, if you would like to play with them very much you could give them a 5, and if you wouldn't like to play with them you could give them a 2. If you would like to turn back and have a go at that now, just put your hand up if you would like any help.

When you have finished doing that, if you put your pen down so I can see who is finished and collect in your questionnaire.

Debrief

Thank you so much for doing the questionnaires for me, I am so grateful. You have been really helpful and I will be able to learn such a lot about how children feel about other people. So for example, I might be able to look at things like, if lots of children would like to play with children who find it easy to be funny or if children who can think of funny things to cheer themselves up have more friends. Also, the reason I asked you to do the questions on humour again for me is to see if your answers are the same or different. If I know your answers are pretty much the same, that tells me it's a good questionnaire for me to use in another study.

Does anyone have any questions they'd like to ask about what we have done today?

Just to remind you that I won't show any of the answers you have given to anyone and that I'd like you to not share your answers with any other children. If after I have gone today you have any more questions or are unsure of anything, please do talk to one of your teachers about it. But thank you again and I hope that you have enjoyed what we have done today.

Appendix 4.8 – Screening the data and checking the assumptions

Chapter 4 - Before proceeding with the analysis a number of assumptions for MANOVA outlined by Pallant (2010) were tested. Tabachnick and Fidell (2007) also propose testing some of these assumptions before using structural equation modelling. As stated by Pallant (2010), due to the large sample size, the testing of some of assumptions is not strictly necessary. Firstly a matrix of scatterplots was produced to check for the presence of a linear relationship between pairs of independent variables. Due to the use of a correlation, scatterplots were also used to inspect the distribution of data points and to check the assumption of homoscedasticity. As stated by Pallant (2010) MANOVA is quite robust to modest violations of normality. Multivariate normality was checked by obtaining Mahalanoblis distances. In this case the Mahal. Distance maximum value was slightly larger than the critical value determined by using a chi-square table, suggesting there may be multivariate outliers. Further investigation indicated that only one person had a score that exceeded the critical and therefore did not warrant removal from the sample.

Univariate normality was checked by using a number of steps including inspection of histograms, detrended normal Q-Q plots and boxplots. The 5% trimmed mean values were very similar to original means suggesting the any more extreme scores had little influence on the mean. Although the Kolmogorov-Smirnov statistic was significant suggesting possible violation of the assumption of normality, Pallant (2010) stated that this is common in larger sample sizes. Similarly, the risk of skewness and kurtosis is also reduced with a large sample size.

To check for multicollinearity and singularity a correlation was run to check the strength of the correlations between the dependent variables. This indicated that the majority were moderately correlated. In contrast, Box's test of equality of covariance

matrices was smaller than .001 suggesting that the assumption of homogeneity of variance-covariance matrices may have been violated. Tabachnick and Fidell (2007) however warn that this may be too strict for larger sample sizes. For Levene's test of equality of error variances some variables were also less than .05, indicating that this assumption had been violated. As suggested by Tabachnick and Fidell (2007), a more conservative alpha value of .025 was adopted for these variables.

Appendix 4.9 - MANOVA summary table for gender and year group (chapter 4)

Source	SS	df	MS	F	P	η²p
Affiliative						
Gender	.06	1	.06	.13	>.05	.00
YG	.70	2	.35	.77	>.05	.01
Gender*YG	1.49	2	.75	1.63	>.05	.02
Error	71.96	157	.46			
Total	1616.92	163				
Aggressive						
Gender	7.33	1	7.33	17.12	< .001	.10
YG	2.27	2	1.13	2.65	>.05	.03
Gender*YG	1.07	2	.53	1.25	>.05	.02
Error	67.20	157	.43			
Total	716.06	163				
Self-enhancing						
Gender	.11	1	.11	.25	>.05	.00
YG	.02	2	.01	.02	>.05	.00
Gender*YG	3.99	2	2.00	4.55	<.01	.06
Error	68.91	157	.44			
Total	1299.06	163				
Self-defeating						
Gender	2.09	1	2.09	5.15	<.05	.03
YG	1.81	2	.91	2.23	>.05	.00
Gender*YG	.09	2	.05	.11	>.05	.00
Error	63.72	157	.41			
Total	992.08	163				
Loneliness						
Gender	2.12	1	2.12	.25	>.05	.00
YG	4.09	2	2.04	3.06	<.05	.04
Gender*YG	.57	2	.29	.43	>.05	.01
Error	104.88	157	.67			
Total	726.38	163				
GSW						
Gender	1.48	1	1.48	4.27	<.05	.03
YG	.69	2	.35	1.00	>.05	.01
Gender*YG	2.66	2	1.33	3.85	<.05	.05
Error	54.26	157	.35			
Total	1431.67	163				
SPSC						
Gender	6.47	1	6.47	13.11	< .001	.08
YG	5.37	2	2.68	5.43	<.01	.07
Gender*YG	4.73	2	2.36	4.79	<.01	.06

Error	77.53	157	.49			
Total	1406.61	163				

PR Affiliative

Gender	8271.91	1	8271.91	27.43	<.001	.15
YG	89.72	2	44.86	.15	>.05	.00
Gender*YG	1117.38	2	558.69	1.85	>.05	.02
Error	47343.05	157	301.55			
Total	176539.25	163				

PR Aggressive

Gender	5176.23	1	5176.23	27.65	<.001	.15
YG	244.29	2	122.15	.65	>.05	.01
Gender*YG	121.18	2	60.91	.33	>.05	.00
Error	29391.99	157	187.21			
Total	67811.68	163				

PR Self-enhancing

Gender	227.01	1	227.01	2.09	>.05	.01
YG	5409.60	2	2704.80	24.95	<.001	.24
Gender*YG	793.99	2	397.00	3.66	.03	.05
Error	17019.72	157	108.41			
Total	100295.04	163				

PR Self-defeating

Gender	495.61	1	495.61	6.28	<.01	.04
YG	76.12	2	38.06	.48	>.05	.01
Gender*YG	350.50	2	175.25	2.22	>.05	.03
Error	12395.68	157	78.95			
Total	27757.15	163				

Friends

Gender	143.74	1	143.74	1.73	.19	.01
YG	185.63	2	92.81	1.11	.33	.01
Gender*YG	163.49	2	81.75	.98	.38	.01
Error	13081.70	157	83.32			
Total	43716.67	163				

Peer acceptance

Gender	.09	1	.09	.34	.56	.00
YG	1.63	2	.81	3.11	<.05	.04
Gender*YG	1.14	2	.57	2.18	>.05	.03
Error	41.11	157	.26			
Total	1492.89	163				

Appendix 4.10 - Schematic of Structural Model for Self-reported Humour Styles
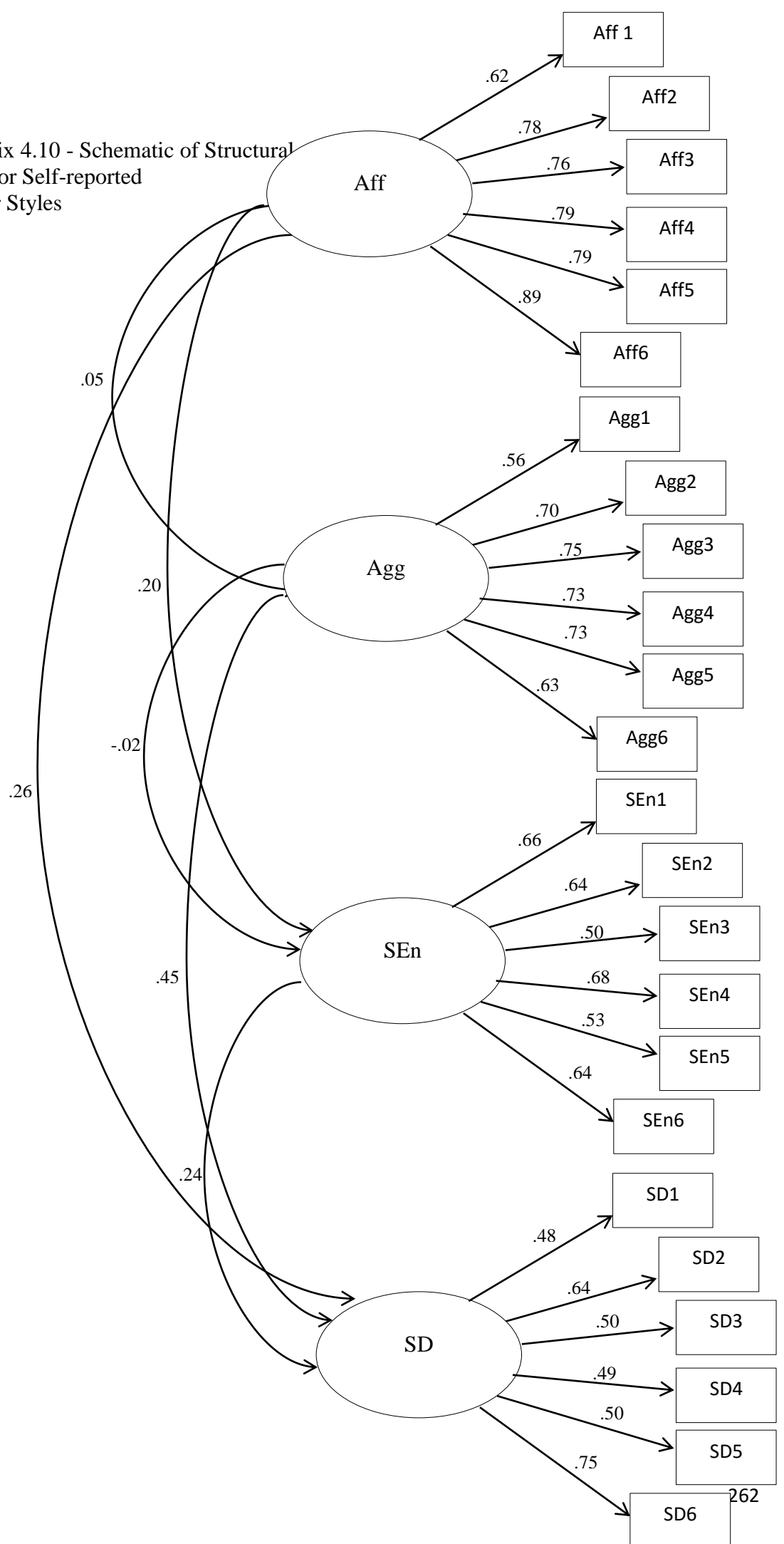
For the following questions, please tick one box

I worry a lot

Not true   A bit true   Very true

I am often unhappy, sad and tearful

Not true   A bit true   Very true

I am nervous in new situations, I easily lose confidence

Not true   A bit true   Very true

I have many fears, I am easily scared

Not true   A bit true   Very true

I get a lot of headaches, stomach aches or sickness

Not true   A bit true   Very true

I am interested in knowing who your friends are. Can you write down the names of your close friends in this class in the space below?

_____

_____

Thanks so much for all your help!

Appendix 5.2 – Ethical approval

RESEARCH AND ENTERPRISE SERVICES

REF: ERP2226

24th September 2014

Lucy James
School of Psychology
Keele University

Dear Lucy,

Re: A longitudinal study of children's humour and psychosocial adjustment

Thank you for submitting your revised application for review. I am pleased to inform you that your application has been approved by the Ethics Review Panel. The following documents have been reviewed and approved by the panel as follows:

Document	Version	Date
Summary of Proposal	1	27-08-14
Letters of Invitation	1	27-08-14
Information Sheets	1	27-08-14
Consent Forms	1	27-08-14
Questionnaire	1	27-08-14

If the fieldwork goes beyond the date stated in your application, you must notify the Ethical Review Panel via the ERP administrator at uso.erps@keele.ac.uk stating ERP2 in the subject line of the e-mail. If there are any other amendments to your study you must submit an 'application to amend study' form to the ERP administrator stating ERP2 in the subject line of the e-mail. This form is available via http://www.keele.ac.uk/researchsupport/researchethics/

If you have any queries, please do not hesitate to contact me via the ERP administrator on uso.erps@keele.ac.uk stating ERP2 in the subject line of the e-mail.

Yours sincerely

Dr Bernadette Bartlam
Chair – Ethical Review Panel

CC   RI Manager
      Supervisor

Research and Enterprise Services, Keele University, Staffordshire, ST5 5BG, UK
Telephone: + 44 (0)1782 734466   Fax: + 44 (0)1782 733740

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Dear _____

Date

I am a PhD student at Keele University based in the school of psychology. During the current school year I will be carrying out a piece of research examining the relationship between children's humour and psychosocial adjustment as part of my wider PhD research which investigates humour in younger children.

If possible, I would like to come into your school in the autumn term and the summer term, at a time convenient for you, and work with the children from years 4, 5 and 6. The children would be asked to complete a questionnaire which will take around 20-30 minutes. The questions, which I have attached, have been designed especially for younger children. They explore children's use of humour when alone, for example to cope with a difficult situation and their use of humour when around other people, for instance, using humour to put themselves down or laughing and joking with other children. In addition to the humour questions, the children will be asked about how they feel, for example whether they feel happy with themselves or if they feel lonely. The last part of the questionnaire also asks the children about who their closest friends are, an activity they seem to particularly enjoy. As the children will be reporting on their peers I will talk to them about the importance of not discussing their answers with other children.

Visiting your school on two occasions will allow me to examine changes over time in children's uses of humour, well-being and friendships. It will also allow for causal relationships to be looked at.

Given the inherently social nature of humour there is a compelling case for studying its role within the context of social adjustment. In addition, a wealth of research has indicated that there may be a strong links between humour and emotional health. Humour may therefore be a useful tool for children to cope with all sorts of difficulties they may face including problematic peer relationships. Ultimately, carrying out this sort of research is greatly important as it can help to identify both adaptive and maladaptive uses of humour and the positive and negative outcomes that may result from them.

Informed consent will be obtained and pupils will be told it is fine to only answer questions that they feel comfortable answering. They will have the right to withdraw at any point. After the questionnaire has been completed, pupils will be fully debriefed about the nature of the study. I will provide a letter for parents to gain parental consent on an opt-out basis in both the autumn and summer.

The children's responses will be treated as completely confidential and no child will be named in any reports written. As I will explain to the children, in the event of them disclosing something during the session or writing something extra on their questionnaire that raises concern about their safety, I would pass this onto the school. In terms of support for children, they will be encouraged to speak to the class teacher about any questions they might have in relation to the research.

If you would be happy for your school to take part, let me know and I can arrange to discuss my research with you further. My contact details can be found below. I would be really grateful for your help with the research and am offering £100 worth of amazon vouchers to all schools that participate.

Please do not hesitate to contact me if you have any further questions.

With very best wishes,

Yours sincerely

Lucy James

PhD Psychology student

Email: l.a.james@keele.ac.uk

Supervisor:

Dr Claire Fox

School of Psychology

University of Keele

Email: c.fox@keele.ac.uk

Head teacher consent form: A longitudinal study of younger children's humour and psychosocial adjustment.

The research aims to investigate use of humour and psychosocial adjustment in children in years 4-6. More specifically it examines both positive and negative uses of humour and how children feel about themselves. It also involves asking the children who their closest friends are.

In both the autumn term and the summer term, pupils will be asked if they would like to take part in a questionnaire, which should take around 30 minutes each to complete. The children will be told about the importance of not sharing their answers with other children and made aware that their answers will be kept confidential. The only exception to this would be if they were to say something that suggested they were at risk and this would then be passed onto the school. It will also be made clear to them that they can stop taking part at any time and they will be fully debriefed afterwards. Parental consent will be gained using an opt-out method.

I have read and understood the information above, have seen the research materials, and have been given the opportunity to ask questions. I give my consent for the above study to be carried out in

_____ School.

Head teacher signature: _____

Print name: _____

Date: _____

Researcher signature: _____

Print name: _____

Date: _____

Contact details

Lucy James

PhD researcher

School of Psychology

Keele University

l.a.james@keele.ac.uk, 01782 734402

Dear Parent/Guardian,

Date

I am a Psychology PhD student at Keele University investigating the role of humour in children's lives. I am writing to tell you about a piece of research I will be carrying out at your child's school in the near future, as part of my PhD. **If, after reading this information you decide you do NOT wish your child to take part in the first stage of the research then please complete the reply slip and return it to the school by _____.** If you do not complete the reply slip I will assume that you are happy for your child to participate in the research.

I am interested in finding out about the different ways children use humour and also how this influences their well-being and their relationships with other children. I will therefore be asking the children if they would like to take part in a questionnaire, answering some specially designed questions in both the autumn and summer term.

The first questions that the children will be asked explore the ways in which children use humour. More specifically they assess children's use of humour when they are alone, for example, to cope with a difficult situation or to cheer themselves up. Also, they investigate their use of humour when they are with other people. This can include positive uses of humour, for instance telling funny stories, but also more negative uses of humour such as teasing other children or perhaps putting themselves down in a funny way to make others laugh. Alongside these questions the children will be asked about how they feel, for example if they feel happy with themselves or if they sometimes feel left out. They will also be asked to give the names of their closest friends to see if friends use humour in similar ways. Please be assured that I have experience in using these sorts of questions with children as part of my research and have always found that they enjoy taking part.

This sort of research is highly beneficial as it can help in developing ways to help children to use humour in a positive and constructive way and identify any sorts of harmful consequences that may stem from the use of negative types of humour. Administering the questionnaire at the beginning and end of the school year will also help me to investigate whether the way children feel or the way they use humour can change over time.

The research which will be completed on a whole class basis will last around 30 minutes and children in years 4, 5 and 6 will be asked if they would like to take part. The questionnaire responses will be kept completely confidential and when the findings of the research are brought together and written up, no names of children will be included. The children will be informed beforehand that in the case

of them writing something extra or saying something that suggests that they or someone else is at risk, the school will be informed. The children will be encouraged to ask questions and speak to their teacher or someone at home if they do have any concerns. In addition, the children will be told that they can stop taking part at any time and they only have to answer questions that they feel comfortable answering. I will also explain to the children afterwards how their answers will be useful to my research.

The head teacher has approved the questions and is happy for me to conduct my research. If you have any concerns or further questions, please get in contact with me, either by email l.a.james@keele.ac.uk or by telephone 01782 734402. I would be happy to discuss my research further with you. The project supervisor Dr Claire Fox (Senior Lecturer in Psychology) can also be contacted by email c.fox@keele.ac.uk or by telephone 01782 733330. If you remain unhappy about the research and/or wish to raise a complaint about any aspect of the way that you have been approached or treated during the course of the study please contact Nicola Leighton, Research Governance Officer, Research & Enterprise Services, IC1, Keele University. ST5 5BG, Tel: 01782 733306.

If after reading this information you **would not** be happy for your child to take part during the autumn term, please complete the reply slip and return it to the school. I will write to you again later on in the year before I return to the school and ask for your consent for your child to take part in the summer term.

Yours faithfully

Lucy James

_____

Humour Research reply slip: return to the class teacher by _____

I **do not** give permission for (child's name) _____to take part.

Child's year group:_____ Child's Class:_____

PRINT NAME:_____

SIGNED:_____

DATE:_____

Dear Parent/Guardian,

Date

I am a Psychology PhD student at Keele University investigating the role of humour in children's lives. In the autumn term, I wrote to tell you about a piece of research I am carrying out at your child's school, as part of my PhD research at Keele University. In the near future, I will be returning to your child's school again to complete the research. **If, after reading this information you decide you do NOT wish your child to take part in the second stage of the research then please complete the reply slip and return it to the school by _____.** If you do not complete the reply slip I will assume that you are happy for your child to participate in the research.

I am interested in finding out about the different ways children use humour and also how this influences their well-being and also their relationships with other children. I will therefore be asking the children again if they would like to take part in a questionnaire, answering some specially designed questions.

The first questions that the children will be asked explore the ways in which children use humour. More specifically they assess children's use of humour when they are alone, for example, to cope with a difficult situation or to cheer themselves up. Also, they investigate their use of humour when they are with other people. This can include positive uses of humour, for instance telling funny stories, but also more negative uses of humour such as teasing other children or perhaps putting themselves down in a funny way to make others laugh. Alongside these questions the children will be asked about how they feel, for example if they feel happy with themselves or if they sometimes feel left out. They will also be asked to give the names of their closest friends to see if friends use humour in similar ways. Please be assured that I have experience in using these sorts of questions with children as part of my research and have always found that they enjoy taking part.

This sort of research is highly beneficial as it can help in developing ways to help children to use humour in a positive and constructive way and identify any sorts of harmful consequences that may stem from the use of negative types of humour. Administering the questionnaire at the beginning and end of the school year will also help me to investigate whether the way children feel or the way they use humour can change over time.

The research which will be completed on a whole class basis will last around 30 minutes and children in years 4, 5 and 6 will be asked if they would like to take part. The questionnaire responses will be kept completely confidential and when the findings of the research are brought together and written up, no names of children will be included. The children will be informed beforehand that in the case of them writing something extra or saying something that suggests that they or

someone else is at risk, the school will be informed. The children will be encouraged to ask questions and speak to their teacher or someone at home if they do have any concerns. In addition, the children will be told that they can stop taking part at any time and they only have to answer questions that they feel comfortable answering. I will also explain to the children afterwards how their answers will be useful to my research.

The head teacher has approved the questions and is happy for me to conduct my research. If you have any concerns or further questions, please get in contact with me, either by email l.a.james@keele.ac.uk or by telephone 01782 734402. I would be happy to discuss my research further with you. The project supervisor Dr Claire Fox (Senior Lecturer in Psychology) can also be contacted by email c.fox@keele.ac.uk or by telephone 01782 733330. If you remain unhappy about the research and/or wish to raise a complaint about any aspect of the way that you have been approached or treated during the course of the study please contact Nicola Leighton, Research Governance Officer, Research & Enterprise Services, IC1, Keele University. ST5 5BG, Tel: 01782 733306.

If after reading this information you **would not** be happy for your child to take part, please complete the reply slip and return it to the school.

Yours faithfully

Lucy James

_____

Humour Research reply slip: return to the class teacher by _____

I **do not** give permission for (child's name) _____to take part.

Child's year group:_____ Child's Class:_____

PRINT NAME:_____

SIGNED:_____

DATE:_____

Humour and psychosocial adjustment (Longitudinal) instructions – Time 1

Hi, my name's _____ and I've come from Keele University to see if you would like to help me with some research I'm doing. My research is on the things children find funny, how you make yourself and other people laugh and also about how children feel about themselves. I would like you to help me today by filling in a questionnaire now and then also in the summer term. The questions today are about things you find funny and some are about how you feel.

Consent and Confidentiality

As you will probably know, I sent a letter home to your parents or guardians to tell them about what you would be doing today. If you feel you don't want to do the questionnaire then that is fine, I can give you another activity. Also, if you take part today, it doesn't mean that you have to take part next time I come in. Some of the questions are quite personal so if there are any questions you feel that you don't want to answer, then it is fine to leave those questions out or to stop taking part. Only I will see your answers and I won't show them to anyone else and nobody in the school will see them. The only time this would be different is if you were to write something extra on your questionnaire or said something to me today that made me feel worried, I would have to pass this on to one of your teachers.

Completing the Questionnaires

The questions I am going to be asking are about what **you think** so I just want you to think about the right answer for you and not for anybody else in the class. It's not a test so there aren't any right or wrong answers but I would still like you to do the questionnaire very quietly without talking to anyone else. I'm going to give you a few minutes to think about whether you would like to take part before we begin. If there is anything else you would like to ask, just put your hand up.

Now I'm going to hand out the questionnaires, before we start, would you be able to fill out the details on the front, it asks for your age, class, year group and whether you are a girl or a boy. The only reason it also asks for your name is so I can match up your answers when I come in again in the summer. Is everyone ok with that? Don't turn over the page until we are all ready to start.

If you would like to turn over the page - the first questions are about **how you make jokes and try to be funny**. I am going to read out each question and give you time to think about your answers carefully. For each question I would like you to tell me whether the sentence that I read out is, not at all like you, not like you, a bit like you or a lot like you, by ticking **just one** of the boxes underneath.

We've now finished the first set of questions, which you've done really well. If you turn over, we will now do the next set together which are about how you feel about yourself.

They are very similar to the other questions so again I would just like you to tick one box. So the first one is ….

These next ones are also about how you feel. **First I need to explain how I would like you to fill in these ones in.**

I would still like you to tick just **one** box for each of the questions. What I will do is read out the two sentences, first I need you to decide which sentence is most like you, so it might be the one on the left hand side of the page, or it might be the one on the right. Once you have chosen one, could you tell me whether it is sort of true for you, or really true for you. **So it's just one box that I need you to tick, and not one from each side.** We will have ago at the first one.

That's great, just before we finish in the space below could you write down the names of your closest friends in **this class** for me. It would be helpful if you could tell me their first name and the first letter of their last name if you can. It is fine to share what you have put with your teachers or someone at home, but I would just like you to make sure you don't share them with any

other children now or after we have finished today. This is just so you can keep what you have written private and to make sure nobody will feel left out.

Debrief

Thank you so much for doing the questionnaire for me. You have been really helpful and I will be able to learn an awful lot about how children try to be funny and how they feel about themselves. So for example, I might be able to look at things like if children who can think of funny things to cheer themselves up also feel quite good about themselves or if children who make jokes about themself feel lonely. I will also be able to see if children who are friends use humour in the same sorts of ways.

Does anyone have any questions they'd like to ask about what we have done today?

Just to remind you that I won't show any of the answers you have given to anyone and that we talked about not sharing your answers to the last question with other children. If after I have gone today you have any more questions or are unsure of anything, please do talk to one of your teachers about it. But thank you again and I hope that you have enjoyed what we have done. I will come back again in the summer term and ask if you would like to help me with the questionnaire again. I will send another letter home then so you will know when I will be coming back. I look forward to seeing you all again then.

Humour and psychosocial adjustment (Longitudinal) instructions – Time 2

Hi, my name's _____ and I've come from Keele University. If you remember I came in, in the autumn and you filled in a questionnaire for me. I've come back today to see if you would like to help me again with the research I'm doing. My research is on the things children find funny, how you make yourself and other people laugh and also about how children feel about themselves.

Consent and Confidentiality

Just to remind you of the things I talked to you about last time I came in. As you will probably know, I sent another letter home to your parents or guardians to tell them about what you would be doing today. If you feel you don't want to do the questionnaire then that is fine, I can give you another activity. Also, if you took part last time, it doesn't mean that you have to take part today. Some of the questions are quite personal so if there are any questions you feel that you don't want to answer, then it is fine to leave those questions out or to stop taking part. Only I will see your answers and I won't show them to anyone else and nobody in the school will see them. The only time this would be different is if you were to write something extra on your questionnaire or said something to me today that made me feel worried, I would have to pass this on to one of your teachers.

Completing the Questionnaires

The questions I am going to be asking are about what **you think** so I just want you to think about the right answer for you and not for anybody else in the class. It's not a test so there aren't any right or wrong answers but I would still like you to do the questionnaire very quietly without talking to anyone else. I'm going to give you a few minutes to think about whether you would like to take part before we begin. If there is anything else you would like to ask, just put your hand up.

Now I'm going to hand out the questionnaires, before we start, would you be able to fill out the details on the front, it asks for your age, class, year group and whether you are a girl or a boy. The only reason it also asks for your name is so I can match up your questionnaires to the ones you did earlier in the year. Is everyone ok with that? Don't turn over the page until we are all ready to start.

If you would like to turn over the page - the first questions are about **how you make jokes and try to be funny**. I am going to read out each question and give you time to think about your answers carefully. For each question I would like you to tell me whether the sentence that I read out is, not at all like you, not like you, a bit like you or a lot like you, by ticking **just one** of the boxes underneath.

We've now finished the first set of questions, which you've done really well. If you turn over, we will now do the next set together which are about how you feel about yourself.

They are very similar to the other questions so again I would just like you to tick one box. So the first one is ….

These next ones are also about how you feel. **First I need to explain how I would like you to fill in these ones in.**

I would still like you to tick just **one** box for each of the questions. What I will do is read out the two sentences, first I need you to decide which sentence is most like you, so it might be the one on the left hand side of the page, or it might be the one on the right. Once you have chosen one, could you tell me whether it is sort of true for you, or really true for you. **So it's just one box that I need you to tick, and not one from each side.** We will have ago at the first one.

That's great, just before we finish in the space below could you write down the names of your closest friends in **this class** for me. It would be helpful if you could tell me their first name and the first letter of their last name if you can. It is fine to share what you have put with your teachers or someone at home, but I would just like you to make sure you don't share them with any other children now or after we have finished today. This is just so you can

keep what you have written private and to make sure nobody will feel left out.

Debrief

Thank you so much for doing the questionnaire for me, I am so grateful. You have been really helpful and I will be able to learn an awful lot about how children try to be funny and how they feel about themselves. So for example, I might be able to look at things like if children who can think of funny things to cheer themselves up also feel quite good about themselves or if children who make jokes about themself feel lonely. I will also be able to see if children who are friends use humour in the same sorts of ways and if things have changed since you last filled in the questionnaire.

Does anyone have any questions they'd like to ask about what we have done today?

Just to remind you that I won't show any of the answers you have given to anyone and that we talked about not sharing your answers to the last question with other children. If after I have gone today you have any more questions or are unsure of anything, please do talk to one of your teachers about it. But thank you again and I hope that you have enjoyed what we have done.

Appendix 5.6 – Screening the data and checking the assumptions

Chapter 5 - Before proceeding with the analysis a number of assumptions for MANOVA outlined by Pallant (2010) were tested. Tabachnick and Fidell (2007) also propose testing some of these assumptions before using structural equation modelling. As stated by Pallant (2010), due to the large sample size, testing some of assumptions is not strictly necessary. Firstly a matrix of scatterplots was produced to check for the presence of a linear relationship between pairs of independent variables. Due to the use of a correlation, scatterplots were also used to inspect the distribution of data points and to check the assumption of homoscedasticity. As stated by Pallant (2010) MANOVA is quite robust to modest violations of normality. Multivariate normality was checked by obtaining Mahalanoblis distances. In this case the Mahal. Distance maximum value was slightly larger than the critical value determined by using a chi-square table, suggesting there may be multivariate outliers. Further investigation indicated that only one person had a score that exceeded the critical and therefore did not warrant removal from the sample.

Univariate normality was checked by using a number of steps including inspection of histograms, detrended normal Q-Q plots and boxplots. The 5% trimmed mean values were very similar to original means suggesting the any more extreme scores had little influence on the mean. Although the Kolmogorov-Smirnov statistic was significant suggesting possible violation of the assumption of normality, Pallant (2010) stated that this is common in larger sample sizes. Similarly, the risk of skewness and kurtosis is also reduced with a large sample size.

To check for multicollinearity and singularity a correlation was run to check the strength of the correlations between the dependent variables. This indicated that the majority were moderately correlated. Furthermore, Box's test of equality of covariance matrices was

larger than .001 suggesting that the assumption of homogeneity of variance-covariance matrices had not been violated. Similarly, for Levene's test of equality of error variances no variables were found to be less than .05, indicating that this assumption had also not been violated.

Appendix 5.7 - MANOVA summary table for time, gender and year group (chapter 5)

Source	SS	df	MS	F	P	$\eta^2 p$
Affiliative						
Gender	.10	1	.10	.13	>.05	.00
YG	1.63	2	.81	.99	>.05	.01
Gender*YG	.16	2	.08	.10	>.05	.00
Error	239.03	291	.82			
Time	.04	1	.04	.23	.64	.00
Time*Gender	.16	1	.16	.83	>.05	.00
Time*YG	.12	2	.06	.32	>.05	.00
Time*Gender*YG	.10	2	.05	.26	>.05	.00
Error	55.90	291	.19			
Aggressive						
Gender	22.45	1	22.45	27.44	< .001	.09
YG	2.32	2	1.16	1.42	>.05	.01
Gender*YG	3.44	2	1.72	2.10	.12	.01
Error	238.12	291	.82			
Time	.38	1	.38	2.06	.15	.001
Time*Gender	.07	1	.01	.36	>.05	.00
Time*YG	.39	2	.19	1.05	>.05	.01
Time*Gender*YG	.87	2	.43	2.35	>.05	.02
Error	53.72	291	.19			
Self-enhancing						
Gender	.00	1	.00	.01	>.05	.00
YG	1.92	2	1.72	2.10	>.05	.01
Gender*YG	.74	2	.37	.56	>.05	.00
Error	192.95	291	.66			
Time	.96	1	.96	3.76	.53	.01
Time*Gender	.15	1	.15	.59	>.05	.00
Time*YG	.81	2	.40	1.57	>.05	.01
Time*Gender*YG	.65	2	.33	1.27	>.05	.01
Error	74.65	291	.26			
Self-defeating						
Gender	3.05	1	3.05	5.31	.02	.02
YG	5.47	2	2.73	4.77	< .001	.03
Gender*YG	.39	2	.20	.34	>.05	.00
Error	166.90	291	.57			
Time	.59	1	.59	2.54	>.05	.01
Time*Gender	.82	1	.82	3.50	>.05	.01
Time*YG	.34	2	.17	.72	>.05	.01
Time*Gender*YG	.24	2	.12	.51	>.05	.00
Error	67.84	291	.23			

Appendix 6.1 – Understanding of humour styles scale

If child A tells lots of jokes and funny stories, child A would feel good about themselves.

Strongly disagree   Disagree   Agree   Strongly agree

If child A makes jokes about someone in front of others, it could make child A feel bad too.

Strongly disagree   Disagree   Agree   Strongly agree

If child A can think of funny things when they are by themselves, this could make child A feel happy.

Strongly disagree   Disagree   Agree   Strongly agree

Child A often talks about things they are not very good at in a funny way. This could make child A feel sad.

Strongly disagree   Disagree   Agree   Strongly agree

If child A finds it easy to make other people laugh, child A would have lots of close friends.

Strongly disagree   Disagree   Agree   Strongly agree

If child A finds it funny when people laugh at someone to make them look silly, other children may not like child A.

Strongly disagree	Disagree	Agree	Strongly agree
☐	☐	☐	☐

If when child A is feeling sad or worried they can think of funny things, this could make other people like child A more.

Strongly disagree	Disagree	Agree	Strongly agree
☐	☐	☐	☐

If child A gets carried away making jokes about themselves to make other children laugh, child A would have less friends.

Strongly disagree	Disagree	Agree	Strongly agree
☐	☐	☐	☐

I enjoyed learning about different kinds of humour.

Strongly disagree	Disagree	Agree	Strongly agree
☐	☐	☐	☐

What did you like best about learning about different types of humour?

Thanks so much for all your help!

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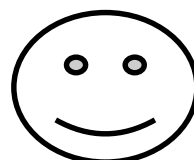
Dear Head teacher,

Date

I am a 2nd year PhD student based in the school of Psychology at Keele University. I am writing to tell you about an opportunity to participate in some new research currently being carried out at the university.

My wider PhD research investigates the relationship between children's humour and psychosocial adjustment. Given the inherently social nature of humour there is a compelling case for studying its role within the context of social adjustment. In addition, a wealth of research has indicated that there may be strong links between humour and emotional health. Humour may therefore be a useful tool for children to cope with all sorts of difficulties they may face including problematic peer relationships. Ultimately, carrying out this sort of research is greatly important as it can help to identify both adaptive and maladaptive uses of humour and the positive and negative outcomes that may result from them. Currently, we are interested in finding ways to help children to understand about the outcomes of using humour in different ways.

During the summer term I will be visiting schools to present a short intervention programme based on positive and negative uses of humour. Participating in the project would involve me coming into your school at a time convenient to you, to work with children in years 5/6 on 3 occasions, each up to an hour in length. The sessions would involve introducing children to different ways in which humour can be used and of the consequences that can arise from different uses. I would then work with the children to produce materials based on what they had learnt, which could then be shared with younger pupils during or after the final session. I have attached an information sheet which provides a more detailed summary of the planned sessions.

Before and after the intervention children would also be asked if they would like to take part in a questionnaire which takes around 20 minutes to complete. The questions, which I have attached, have been designed especially for younger children. They explore children's understanding of humour and use of humour when alone, for example to cope with a difficult situation and their use of humour when around other people, for instance, using humour to put themselves down or laughing and joking with other children. Administering the questionnaire to the children both at the start and the end of the intervention will allow us to investigate changes and evaluate the effectiveness of the intervention.

Informed consent will be obtained and pupils will be told it is fine to only answer questions that they feel comfortable answering. They will have the right to withdraw at any point. After the questionnaire has been completed, pupils will be fully debriefed. I will provide a letter for parents to gain parental consent on an opt-out basis.

The children's responses will be treated as completely confidential and no child will be named in any reports written. As I will explain to the children, in the event of them disclosing something during the session or writing something extra on their questionnaire that raises concern about their safety, I would pass this onto the school. In terms of support for children, they will be encouraged to speak to a teacher about any questions which result from the sessions.

If you would be interested in being part of the research, let me know and I can arrange to discuss the project with you further. My contact details can be found below. I would be really grateful for your help and am offering £100 worth of amazon vouchers to schools as a thank you for their participation.

Please do not hesitate to contact me if you have any further questions.

With very best wishes,

Yours sincerely

Lucy James

PhD Psychology student

Email: l.a.james@keele.ac.uk

Supervisor:

Dr Claire Fox

School of Psychology

University of Keele

Email: c.fox@keele.ac.uk

Head teacher consent form – Intervening with children's humour styles

The research involves delivering a short intervention programme to teach children in years 5/6 about positive and negative uses of humour. Before and after the intervention the children would be asked to fill in a questionnaire containing questions which ask about the way they use humour and also their understanding of humour

The intervention programme will consist of 2-4 sessions lasting up to an hour in length, whilst the questionnaire itself will take around 20 minutes to complete. The children will be made aware that their answers will be kept confidential. The only exception to this would be if they were to say something that suggested they were at risk and this would then be passed onto the school. It will also be made clear to them that they can stop taking part at any time and they will be fully debriefed afterwards. Parental consent will be gained using an opt-out method.

I have read and understood the information above, have seen the research materials, and have been given the opportunity to ask questions. I give my consent for the above study to be carried out in

_____ School.

Head teacher signature: _____

Print name: _____

Date: _____

Researcher signature: _____

Print name: _____

Date: _____

Contact details

Lucy James

PhD researcher

School of Psychology

Keele University

l.a.james@keele.ac.uk, 01782 734402

Dear parent/guardian,

Date

I am PhD student based at the school of psychology at Keele University and I am interested in the importance of humour in children. I am writing to tell you about some new research I will be carrying out at your child's school in the near future as part of my PhD. If after reading the information below, you are happy for your child to participate in my research, you do not need to return the attached reply slip. **If however, you would not be happy for your child to take part, then I would be grateful if you could return the attached reply slip to the school by____.** If you do not return the slip, I will conclude that you are happy for your child to take part.

My wider PhD research focuses on different ways children use humour and how this influences their well-being and relationships with others. This sort of research is highly beneficial as it can help in developing methods to help children to use humour in a positive and constructive way and identify any sorts of harmful consequences that may stem from the use of negative types of humour. I am particularly enjoying working on my current project, as this aims to find new ways to teach children about different types of humour. I will therefore be delivering some sessions to children in years 5/6, to introduce them to different styles of humour and to help them to understand both the positive and negative outcomes of different uses.

Both before and after the sessions, I will be asking the children if they would like to help me by completing a short questionnaire, answering some specially designed questions. The first questions that the children will be asked explore the ways in which they use humour. More specifically they assess children's use of humour when they are alone, for example, to cope with a difficult situation or to cheer themselves up. Also, they investigate their use of humour when they are with other people. This can include positive uses of humour, for instance telling funny stories, but also more negative uses of humour such as teasing other children or perhaps putting themselves down to make others laugh. Alongside these questions, the children will also be asked about how much they understand different sorts of humour. Please be assured that I have experience in using these sorts of questions with children as part of my research and have always found that they enjoy taking part. Asking the children to complete the questionnaire at the start and the end of sessions will allow me investigate how effective they may be. It is important to know this so that similar sessions can be delivered to more schools in the future.

The questionnaire which will be completed on a whole class basis will take around 20 minutes and all children participating in the sessions will be asked if they would like to take part. The questionnaire responses will be kept completely confidential and when the findings of the research are brought together and written up, no names will be included. The children will be informed beforehand that in the case of them writing something extra or saying something that suggests that they or someone else is at risk, the school will be informed. The children will be encouraged to ask questions and speak to their teacher or someone at home if they do have any

concerns. In addition, the children will be told that they can stop taking part at any time and they only have to answer questions that they feel comfortable answering. I will also explain to the children afterwards how their answers will be useful to my research.

The head teacher has approved the questions and is happy for me to conduct my research. If you have any concerns or further questions, please get in contact with me, either by email l.a.james@keele.ac.uk or by telephone 01782 734402. I would be very happy to discuss my research further with you. The project supervisor Dr Claire Fox (Senior Lecturer in Psychology) can also be contacted by email c.fox@keele.ac.uk or by telephone 01782 733330. If you remain unhappy about the research and/or wish to raise a complaint about any aspect of the way that you have been approached or treated during the course of the study please contact Nicola Leighton, Research Governance Officer, Research & Enterprise Services, IC1, Keele University. ST5 5BG, Tel: 01782 733306.

If after reading this information you **would not** be happy for your child to take part in the questionnaire please complete the reply slip and return it to the school.

Yours faithfully

Lucy James

_____

Humour Research reply slip: return to the class teacher by _____

I **do not** give permission for (child's name) _____to take part.

Child's year group:_____ Child's Class:_____

PRINT NAME:_____

SIGNED:_____

DATE:_____

Humour Intervention information sheet for Head Teachers

Background

Four styles of humour were proposed by Martin et al. (2003). To date little research has looked at their role in the lives of younger children. As highlighted by Fox et al. (2013), whilst use of adaptive humour styles may have very positive consequences in terms of children's well-being and social relationships, use of maladaptive humour styles may have a number of negative consequences. Our aim at Keele is to find the best ways to help children to understand about different forms of humour and the consequences of using humour in different ways.

Adaptive humour styles

Affiliative: Making other people laugh, often through telling jokes or funny stories.

Self-enhancing: Humour used to enhance one's own mood or to cope in a difficult situation.

Maladaptive humour styles

Self-defeating: Making others laugh at your own expense.

Aggressive: Laughing at the expense of others.

Intervention

- ❖ The invention itself will consist of 3 sessions between 45 minutes and an hour in length. (The time commitment for both teachers and children will therefore be a maximum three hours).
- ❖ The intervention will be based on CATS (cross age teaching intervention) previously used by Professor Mike Boulton at the University of Chester to teach social skills to victims of bullying.
- ❖ Children will be introduced to the four styles of humour (see above).
- ❖ It will be explained that researchers at Keele are looking for ways to teach younger children about different kinds of humour and that their help is needed to produce materials that could be used to help.
- ❖ The children will be asked to create materials e.g. leaflet/poster/presentation suitable for younger children based on the humour styles.
- ❖ They will then present/share their materials with other children at their school.
- ❖ It is hoped that through producing the materials, the children themselves will become more aware of the ways they use humour and also of the consequences of different uses.

Appendix 6.5 – Instructions given to children

Intervening with children's humour styles, questionnaire instructions (Before)

My name is _____ and I am a researcher from Keele University. I have come in today to see if you would like to help me with some research I am doing. My research is about how children use humour or the things children find funny, and also about how children feel about themselves. It would help me to find out about the different ways that you use humour, so I have brought in a questionnaire to see if you would like to take part. This would involve answering some questions on the things you find funny and how you make yourself and other people laugh. There will be a questionnaire today and then I will also ask you if you would like to do it again in a few weeks' time.

Consent and Confidentiality

As you will probably know, I sent a letter home to your parents or guardians to tell them about what you would be doing today. If you feel you don't want to do the questionnaire then that is fine, I can give you another activity. Also, if you take part today, it doesn't mean that you have to take part next time. Some of the questions are quite personal so if there are any questions you feel that you don't want to answer, then it is fine to leave those questions out or to stop taking part. Only I will see your answers and I won't show them to anyone else and nobody in the school will see them. The only time this would be different is if you were to write something extra on your questionnaire or said something to me today that made me feel worried, I would have to pass this on to one of your teachers.

Completing the Questionnaires

The questions I am going to be asking are about what **you think** so I just want you to think about the right answer for you and not for anybody else in the class. It's not a test so there aren't any right or wrong answers but I would still like you to do the questionnaire very quietly without talking to anyone else. I'm going to give you a few minutes to think about whether you would like to take part before we begin. If there is anything else you would like to ask, just put your hand up.

Now I'm going to hand out the questionnaires, before we start, would you be able to fill out the details on the front, it asks for your age, class, year group and whether you are a girl or a boy. The only reason it also asks for your name is so I can match up your answers if you take part next time. Is everyone ok with that? Don't turn over the page until we are all ready to start.

If you would like to turn over the page - the first questions are about **how you make jokes and try to be funny**. I am going to read out each question and give you time to think about your answers carefully. For each question I would like you to tell me whether the sentence that I read out is, not at all like you, not like you, a bit like you or a lot like you, by ticking **just one** of the boxes underneath.

We've now finished the first set of questions, which you've done really well. If you turn over, we will now do the next set together

They are similar to the other questions so again I would just like you to tick one box. Again just give the right answer for you. So the first one is ….

Debrief

Thank you so much for doing the questionnaire for me. You have been really helpful and I will be able to learn an awful lot about how children try to be funny and how they feel about themselves. So for example, I might be able to look at things like if children who can think of funny things to cheer themselves up also feel quite good about themselves.

Does anyone have any questions they'd like to ask about my research? Just to remind you that I won't show any of the answers you have given to anyone. If after I have gone today you have any more questions or are unsure of anything, please do talk to one of your teachers about it. But thank you again and I hope that you have enjoyed completing the questionnaire.

As I will explain in more detail later on, for the next couple of weeks I am going to be coming in and working with you again. This time, I would like you to help me to make some materials to help to teach younger children about different types of humour. I am very much looking forward to seeing you all again and to telling you more about my work.

Intervening with children's humour styles, questionnaire instructions (After)

A few weeks ago, before you made your leaflets/posters etc., you helped me by filling in a questionnaire about the ways you use humour. It would be really useful if you could fill in the questionnaire for me again today.

Just to remind you of the things I talked to you about last time. As you know, I sent a letter home to your parents or guardians to tell them about what you would be doing today. If you feel you don't want to do the questionnaire then that is fine, I can give you another activity. Also, if you took part last time, it doesn't mean that you have to take part today. Some of the questions are quite personal so if there are any questions you feel that you don't want to answer, then it is fine to leave those questions out or to stop taking part. Only I will see your answers and I won't show them to anyone else and nobody in the school will see them. The only time this would be different is if you were to write something extra on your questionnaire or said something to me today that made me feel worried, I would have to pass this on to one of your teachers.

Completing the Questionnaires

The questions I am going to be asking are about what **you think** so I just want you to think about the right answer for you and not for anybody else in the class. It's not a test so there aren't any right or wrong answers but I would still like you to do the questionnaire very quietly without talking to anyone else. I'm going to give you a few minutes to think about whether you would like to take part before we begin. If there is anything else you would like to ask, just put your hand up.

Now I'm going to hand out the questionnaires, before we start, would you be able to fill out the details on the front, it asks for your age, class, year group and whether you are a girl or a boy. The only reason it also asks for your name is so I can match up your questionnaires to the ones you did last time. Is everyone ok with that? Don't turn over the page until we are all ready to start.

If you would like to turn over the page - the first questions are about **how you make jokes and try to be funny**. I am going to read out each question and give you time to think about your answers carefully. For each question I would like you to tell me whether the sentence that I read out is, not at all like you, not like you, a bit like you or a lot like you, by ticking **just one** of the boxes underneath.

We've now finished the first set of questions, which you've done really well. If you turn over, we will now do the next set together

They are similar to the other questions so again I would just like you to tick one box. Again just give the right answer for you. So the first one is ....

Debrief

Thank you so much for doing the questionnaire for me, I am so grateful. You have been really helpful and I will be able to learn an awful lot about how children try to be funny and how they feel about themselves. So for example, I might be able to look at things like if children who can think of funny things to cheer themselves up also feel quite good about themselves. I will also be able to see if things have changed since you last filled in the questionnaire or since you have been thinking a lot about humour when making your leaflets/posters.

Does anyone have any questions they'd like to ask about what we have done today?

Just to remind you that I won't show any of the answers you have given to anyone. If after I have gone today you have any more questions or are unsure of anything, please do talk to one of your teachers about it. But thank you again and I hope that you have enjoyed what we have done.

Appendix 6.6 – Intervention toolkit

Keele University

Children's Humour Styles Project
Teacher Resource Booklet

We are extremely grateful to the teachers and children at Ash Green Primary School for their help in creating and trialling the following lessons.

Contents page

Background and Aims

Welcome to our children's humour styles resource pack.

- This booklet has been produced by researchers working in the School of Psychology at the University of Keele.

- After several years of researching the topic of children's humour, we were keen to put our findings to practical use.

- We found the following lessons worked successfully when used with around 100 children aged 9-11 as part of PSHE.

Background and Aims

- Researchers and psychologists believe that humour may play a key role in children's social relationships and emotional well-being.

- It is thought that there may be 4 main types of humour, 2 of which are adaptive, 2 of which are maladaptive (Martin et al., 2013).

- The aim of the following lessons is to introduce children to the different types of humour and to the potential consequences of using humour in different ways.

- By producing materials to teach younger pupils about different types of humour, it is hoped that the children themselves will become more aware of the humour that they use and be encouraged to use humour in more positive ways, whilst avoiding more negative uses. This approach is based on CAT (cross age teaching intervention) previously used by Professor Mike Boulton at the University of Chester to teach social skills to victims of bullying.

Testimonials

Children

"I loved learning about the 4 types of humour" Thomas, Y6

"I think the best thing was that everybody was learning together so, hopefully, it would help to stop teasing and make people realise about humour more" Lauren, Y6

"I liked doing the leaflet so other people will know as well as me" Emily, Y6

"It was a really fun subject and I learnt a lot about humour!" Poppy, Y6

"I liked learning about humour because it gave me chance to express my feelings and taught me not to be mean to anyone because if it was the other way around it would upset me" Maddison, Y6

"I liked learning about humours as when I go to high school it can help me make more friends" Lottie, Y6

"I enjoyed it all and it has been a great addition to year 6 and I've enjoyed doing it as one of my last weeks of year 6" Leticia, Y6

Teaching staff

"The children enjoyed making the posters for other children and learning about something different that we don't normally cover. Important stuff!" Y6 class teacher

"The sessions have made them aware of humour styles and I think it will make them think about their own behaviour. We don't do enough PSHE and having the opportunity to discuss things like humour, especially when they're just about to move to high school, provides them with useful strategies and food for thought" Y6 class teacher

"They should have an awareness of what they are conveying to others and ways in which they could behave differently. I doubt they'd thought about different humour styles before" Y5 class teacher

"The sessions benefited the children because they now know a lot more about different styles of humour and which are the more positive ones to use with their friends" Y5 class teacher

"The children enjoyed making posters and working together to create something. They liked working with someone different too!" Y5 class teacher

6

Lesson 2

- Y5/Y6, around 30 children, 1 class teacher, 1 member of support staff, 60 minute lesson

- Objectives – Recap 4 humour styles, introduce task, brief discussion on what makes a good poster/leaflet, children create their posters/leaflets.

- Recap what are the four humour styles - 5 minutes
- Introduce task and discuss what makes a good poster/leaflet - 5 minutes
- Children create their posters/leaflets - 45 minutes
- Quiz to finish - 5 minutes

8

PowerPoint slides

- The following pages (10-39) contain the slides for lessons 1 and 2.

- Resources for the matching game to be copied, can be found on page 40 following the slides.

HUMOUR

younger
children's
humour
styles

Learning objectives

- **What is humour?**

- **How many different kinds are there?**

- **What happens when you use different kinds?**
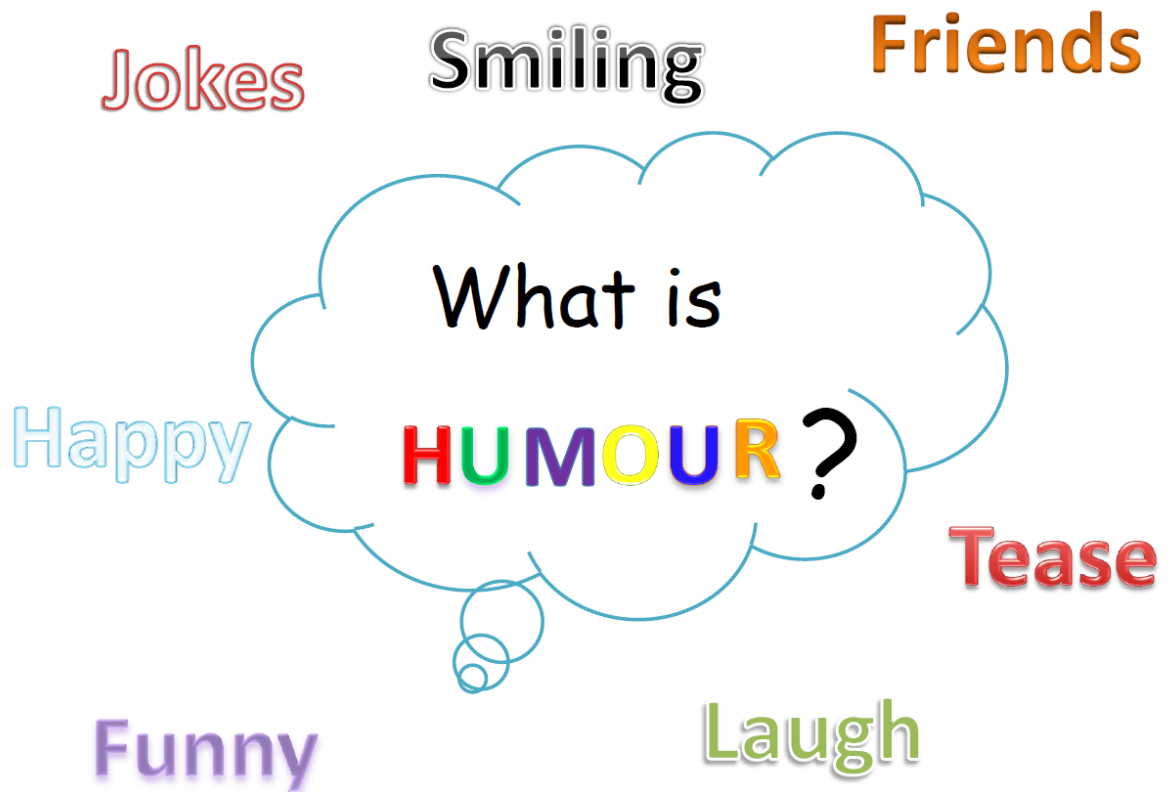
Jokes   Smiling   Friends

What is

Happy   HUMOUR?

Funny   Laugh

Tease

Is there just one kind of HUMOUR?

Mean humour

Friendly humour

Is there just one kind of HUMOUR?

Humour to cheer yourself up

Making fun of yourself

Friendly humour

Happy

Humour to cheer yourself up

Sad
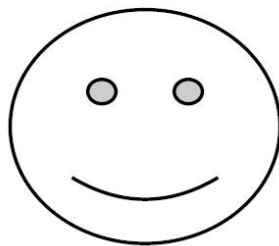
Mean
humour
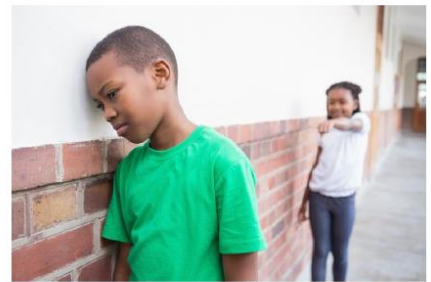
Making
fun of
yourself

MATCHING GAME

4 types of humour cards

4 picture cards

8 example cards

8 effect cards

Friendly humour

Sharing funny stories with others

Telling jokes to make your friends laugh

This type of humour can make others feel happy

Children who use this type of humour have lots of friends. They feel happy as lots of children like them

Mean humour

Laughing at someone to make them look silly

Making jokes without thinking of others' feelings

Children who use this type of humour might end up feeling bad as less children want to play with them

Children might think that someone who uses this type of humour is unkind

Humour to cheer yourself up

Thinking of funny things when you feel upset

Laughing even is something is difficult

Could stop you from being sad

Others think that children who use this type of humour are usually in a good mood

Making fun of yourself

Making jokes about things you aren't very good at

Making jokes about yourself a bit too much

Could make you feel bad about yourself

Other children can find this type of humour annoying

Making your friends and family laugh

Friendly humour

Sharing funny stories

Laughing with others

Telling jokes

21

Happy   Sad
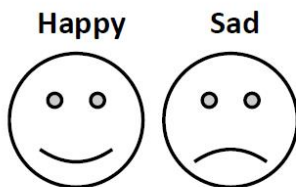
Laughing on your own

Thinking of funny things when you feel angry or worried

Humour to cheer yourself up

Laughing even if something is difficult

Being a funny person can stop you from feeling sad

22

303

Making jokes without thinking of others' feelings

Laughing at someone if others are too

Mean humour

Laughing at someone to make them look silly

Teasing

Making jokes about things you aren't very good at

Letting others laugh at you to make new friends

Making fun of yourself

Letting others make jokes about you

Making jokes about yourself a bit too much

What have we learnt?

- **Different styles of humour**

- **If they are good or bad**

- **What might happen if we use them**

Picture Activity

- Fill in the thought bubbles

- Talk about the questions with those on your table
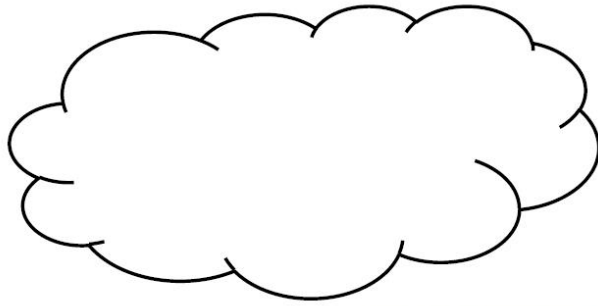
Do **you** think the other boy likes Sam?

How would Sam feel?

Sam likes to tell funny stories to make his friends laugh

27
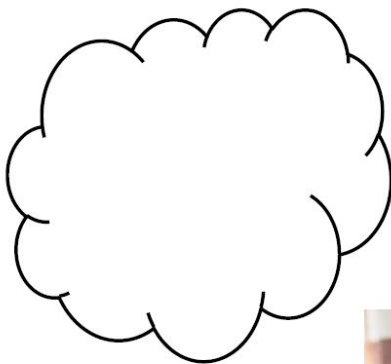
What do **you** think about the other child?

How would Polly feel?

One of Polly's classmates makes jokes about her behind her back

28

How would Tilly feel?
# Do **you** think this would help Tilly?

When Tilly feels sad, she thinks of funny things
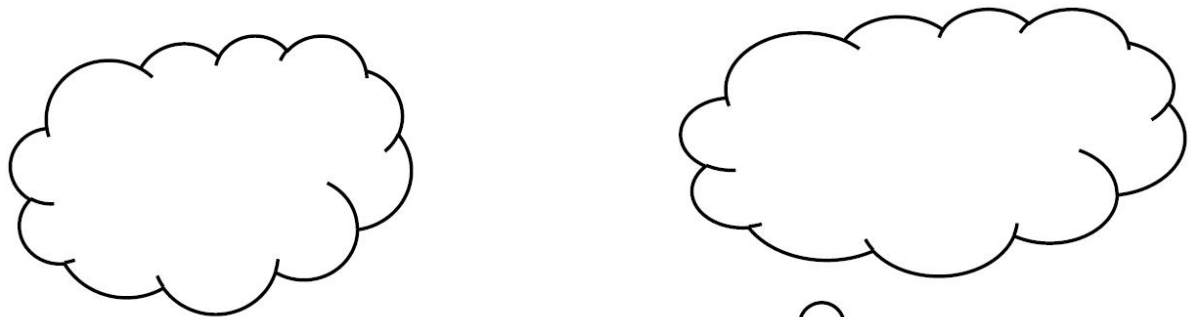
What do you think the other children will think about Tim?
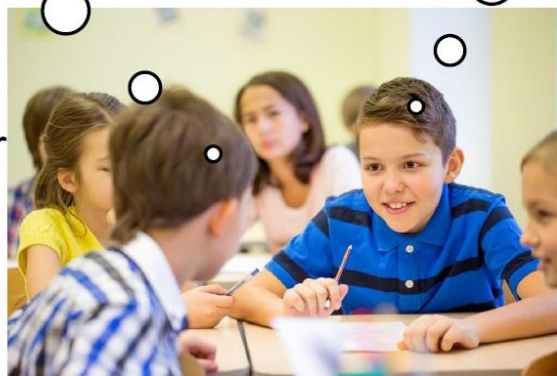
How will this make Tim feel?

Tim gets carried away making jokes about things he isn't very good at to try to make other children laugh

Lesson 2 HUMOUR

younger
children's
humour
styles

- **What did we learn last time?**

- **Your job**

How could we tell younger children about the 4 types of humour?

- Poster
- Leaflet
- Storyboard
- Story
- Play

Your job

- Make a poster or leaflet to tell younger children about the 4 types of humour

- We can give these to year 3 and year 4 teachers

- Decide what you would like to make

- Pick one type of humour, two types of humour, or all four of them

What the younger children need to know?

- What the type/types of humour are

- What might happen if you use them

What makes a good poster or leaflet?

- Neat
- Bright and Bold
- Eye catching
- Clear text
- Accurate
- Title
- Headings and subheadings
- Pictures

Quiz

If child A tells lots of jokes and funny stories, child A would feel good about themselves . Agree / Disagree

If child A makes jokes about someone in front of others, it could make child A feel bad too. Agree / Disagree

If child A can think of funny things when they are by themselves, this could make child A feel happy. Agree / Disagree

Child A often talks about things they are not very good at in a funny way. This could make child A feel sad. Agree / Disagree

If child A finds it easy to make other people laugh, child A would have lots of close friends. Agree / Disagree

If child A finds it funny when people laugh at someone to make them look silly, other children may not like child A. Agree / Disagree

If when child A is feeling sad or worried they can think of funny things, this could make other people like child A more. Agree / Disagree

If child A gets carried away making jokes about themselves to make other children laugh, child A would have less friends. Agree / Disagree

Who are the humour experts?

Rod Martin

"Adults use humour in 4 different ways"

Claire Fox

"Older children use humour in 4 different ways"

Who are the experts on younger children's humour?

You!

Matching game resources – Humour styles cards

Friendly humour	**Humour to cheer yourself up**
Mean humour	**Making fun of yourself**

Picture cards

Example cards

Sharing funny stories with others

Thinking of funny things when you feel upset

Laughing at someone to make them look silly

Making jokes about things you aren't very good at

Example cards

Telling jokes to make your friends laugh	Laughing even is something is difficult
Making jokes without thinking of others' feelings	Making jokes about yourself a bit too much

Effects cards

This type of humour can make others feel happy	Could stop you from being sad
Children who use this type of humour might end up feeling bad as less children want to play with them	Could make you feel bad about yourself

Effects cards

Children who use this type of humour have lots of friends. They feel happy as lots of children like them	Others think that children who use this type of humour are usually in a good mood
Children might think that someone who uses this type of humour is unkind	Other children can find this type of humour annoying

Additional/Optional tasks

- Writing based:
- ➢ Write a story based on the different types of humour
- ➢ Write a diary entry describing an event in which a certain type of humour was used at school
- Drama based:
- ➢ Create a play script based on the humour types (acting out optional)
- ➢ Freeze frame activity

Contact information

If you would like more information on children's humour styles or would like to request an electronic copy of the accompanying slides, we would be delighted to hear from you.

Lucy James - l.a.james@keele.ac.uk

Dr Claire Fox - c.fox@keele.ac.uk

School of Psychology
Keele University
Staffordshire
ST5 5BG

youngerchildrenshumourstyles.wordpress.com

Appendix 6.7 – Screening the data and checking the assumptions

Chapter 6 - Before proceeding with the analysis a number of assumptions for MANOVA outlined by Pallant (2010) were tested. Firstly a matrix of scatterplots was produced to check for the presence of a linear relationship between pairs of independent variables. As stated by Pallant (2010) MANOVA is quite robust to modest violations of normality. Multivariate normality was checked by obtaining Mahalanoblis distances. In this case the Mahal. Distance maximum value was smaller than the critical value determined by using a chi-square table, suggesting that there were no multivariate outliers.

Univariate normality was checked by using a number of steps including inspection of histograms, detrended normal Q-Q plots and boxplots. The 5% trimmed mean values were very similar to original means suggesting the any more extreme scores had little influence on the mean. The Kolmogorov-Smirnov statistic was significant however suggesting possible violation of the assumption of normality. Pallant (2010) stated that this is common in larger sample sizes, although for the current study, the sample size ($N = 115$) was lower compared to the previous studies. Similarly, skewness and kurtosis values were also examined alongside the shape of the distribution. Inspection of the histogram suggested evidence of negative skewness for affiliative humour.

To check for multicollinearity and singularity a correlation was run to check the strength of the correlations between the dependent variables. This indicated that the majority were moderately correlated. In contrast, Box's test of equality of covariance matrices was smaller than .001 suggesting that the assumption of homogeneity of variance-covariance matrices may have been violated. To overcome this, Tabachnick and Fidell (2007) suggested the use of a more stringent alpha value e.g. .025. For Levene's test of equality of error variances one variable was also less than .05, indicating that this assumption had been

violated. As highlighted by Tabachnick and Fidell (2007), adopting a more conservative alpha value can also overcome this violation.

Considering the comparatively smaller sample size and the potential violation of the assumption of normality, prior to proceeding with MANOVA, six Wilcoxon signed rank tests were carried out. This revealed a statistically significant reduction in self-defeating humour following the intervention $z = - 4.88$, $p < .001$. Furthermore, understanding of both adaptive, $z = - 5.29$, $p < .001$ and maladaptive, $z = - 3.56$, $p < .001$ humour styles were found to increase significantly following the intervention. As reported in chapter 6, these findings were then replicated using MANOVA.

Appendix 6.8 – MANOVA summary table for time and gender (chapter 6)

Source	SS	df	MS	F	P	$\eta^2 p$
Affiliative						
Gender	3.19	1	3.19	5.66	< .05	.06
Error	48.95	87	.56			
Time	.01	1	.01	.05	>.05	.00
Time*Gender	.01	1	.01	.05	>.05	.00
Error	8.07	87	.09			
Aggressive						
Gender	7.07	1	7.07	9.73	< .01	.10
Error	63.24	87	.73			
Time	.47	1	.47	2.98	>.05	.03
Time*Gender	.03	1	.03	.18	>.05	.00
Error	13.82	87	.16			
Self-enhancing						
Gender	1.45	1	1.45	1.85	>.05	.02
Error	68.16	87	.78			
Time	.03	1	.03	.15	>.05	.00
Time*Gender	.06	1	.06	.36	>.05	.00
Error	15.27	87	.18			
Self-defeating						
Gender	6.72	1	6.72	10.41	< .01	.12
Error	56.23	87	.65			
Time	3.54	1	3.54	20.67	< .001	.11
Time*Gender	.31	1	.31	1.80	>.05	.02
Error	14.92	87	.17			
Understanding Ad						
Gender	.07	1	.07	.07	>.05	.00
Error	92.05	87	1.06			
Time	8.57	1	8.57	10.57	< .01	.11
Time*Gender	.87	1	.87	1.07	>.05	.01
Error	70.52	87	.81			
Understanding Mal						
Gender	.05	1	.05	.16	>.05	.00
Error	26.09	87	.30			
Time	.99	1	.99	8.41	< .01	.09
Time*Gender	.09	1	.09	.72	>.05	.01
Error	10.26	87	.12			

Appendix 6.9 – Summary of children's comments about the intervention

Short summary of qualitative data (Intervention study)

The participants were asked 'What did you like best about learning about different types of humour'. The majority of the participant's comments could be grouped into three main categories – comments about creating the materials, comments about understanding humour, and comments about the positive outcomes following the intervention. It is anticipated that these comments can be used to promote the intervention in the future.

Firstly, several of the participants were positive about task of creating materials suitable for younger children. For example, comments from the children included, 'When we could write stories it made it easier to understand the different types of humour', 'I like doing the leaflets so other people will know as well as me' and 'I liked making the posters to tell every about what we have learned'. This particularly highlights the value of using the CATS approach with this sort of intervention.

Secondly, many of the participants highlighted that they enjoyed learning about the topic of humour and that this was something different. A number of the children specifically referred to learning about the four styles of humour. For example, 'I liked to find out there was four kinds of humour and what they were', 'It was a really fun subject and I learned a lot about humour' and 'Fun, I didn't know there are four kinds of humour'. This seems particularly positive as it suggests that previously, children may not have considered the fact that both positive and negative types of humour exist.

Finally, several children could see the potential positive outcomes of what they had learned about. For example, 'I think the best thing was that everybody was learning together so, hopefully, it would help to stop teasing and make people realise about humour more', 'I liked learning about humours as when I go to high school it can help me make more friends' and 'All of it I liked. It also showed you what could happen if you are being

mean'. Overall, as the children provided so many positive comments about the intervention, it is suggested that future attempts to raise children's awareness of humour styles should adopt a very similar approach.

Appendix 6.10 – Example materials produced by the children