HUMOUR AND EMPATHY IN CHILDREN'S SOCIAL RELATIONSHIPS

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in

THE FACULTY OF EDUCATIONAL AND COUNSELLING PSYCHOLOGY AND SPECIAL EDUCATION

(School Psychology)

THE UNIVERSITY OF BRITISH COLOMBIA

(Vancouver)

April 2008

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Abstract

This study explored the link between use of humour and empathy among elementary school age children. Based on research demonstrating high levels of empathy in individuals who behave pro-socially and lower levels of empathy in individuals who behave antisocially, it was hypothesized that empathy (cognitive and affective) would be positively associated with positive uses of Humour, and negatively associated with negative uses of Humour. To this end, the Humour Styles Questionnaire (HSQ), developed for use with adults, was adapted for use with children and administered to 191 children (ages 8-13 from two elementary schools) along with a self-report measure of Cognitive and Affective Empathy. Factor analytic results verified a four factor solution for the HSQ, tapping use of Affiliative, Self-Enhancing, Self-Defeating and Aggressive Humour.

Correlational analyses showed that the links between empathy and humour varied across types of humour and across boys and girls. Boys reporting higher levels of Cognitive Empathy were more likely to use humour in positive ways (Affiliative and Self-Enhancing Humour) and less likely to use humour to taunt others (Aggressive Humour) or to self-deprecate (Self-Defeating Humour). Boys who reported greater Affective Empathy were also less likely to use humour aggressively. For girls, greater Affective Empathy was associated with less use of Aggressive Humour and more use of Affiliative and Self-Enhancing Humour. Affiliative and Self-Enhancing Humour were also more likely among girls reporting greater Cognitive Empathy.

Results of hierarchical regression analyses revealed that Cognitive Empathy contributed significantly to the variance in Self-Defeating, Affiliative and Self-
Enhancing use of Humour, above and beyond sex effects. Affective Empathy was found to have a unique contribution, above and beyond sex effects, to the variance in Aggressive and Self-Defeating Humour.
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Acknowledgments

I would like to express my gratitude to my supervisor, Professor Shelley Hymel, who was abundantly helpful by providing invaluable mentoring and demonstrating how to think like a researcher. Shelley, you provided me with many opportunities and challenges while you honoured my autonomy and individuality. This balanced guidance gave the process of working with you a precious flavour of playfulness that is engraved in my memory and carried with me.

I would also like to express my gratitude to the members of the supervisory committee, Dr. Kent McIntosh, and Dr. Kimberly Schonert-Reichl, without whose knowledge and assistance this study would not have been successful.

Special hugs to my lovely friend, Lina Darwich, who was generously and kindly available and encouraging during the last stages of writing this thesis. Lina, you made it so much fun, I would do it all over again with you.

Finally, my family, I would like to try to articulate my overflowing feelings of gratitude for having you all in my life. Your own commitment and drive towards making your dreams come true has inspired me to reach for my own. Edden, my beloved girl, thank you for saying: “Ima (mom in Hebrew), can I help you finish your homework? Let me do some. I want you to do a good job.” Edden, your sincere intention and caring inspired me to do my best. Gal, thank you for believing in me and patiently listening to my theories and ideas, you are not only fun to talk to, but I also learn from you. Nir, thank you for your sense of humour and kind notes that helped me put things in perspective (i.e., “just don’t worry about it”, “be happy”, “when life gives you lemons, make lemonade”). Gal, Nir, and Edden, you taught me that “hard work” can actually be easy.
My beloved better half, Yossi, I love you for all you are. Thank you for your practical help, emotional support, understanding and love.
Dedication

To my late Mother, Mazal Zabari
Thank you for teaching me perseverance
This thesis is devoted to you with love
Introduction

Humour, a multifaceted phenomenon, is a complex and subjective matter. A joke can be perceived as funny by one and as humiliating by another. A joke can be used to insult others as well as to create friendly connections between individuals. Does empathy play a role in the delicate give and take of humour and joking? This study explores the link between use of humour and empathy among children.

“Sense of humour” refers to a personality trait or individual difference variable (Martin, Puhlik-Doris, Larsen, Gray, & Weir 2003). Humour, as a non-seriousness mental state, is expressed with laughter and is perceived as a pleasant feeling that distracts the person experiencing it from thinking seriously about whatever elicited it. Jokes, popular manifestations of humour, elicit the feeling of non-seriousness by presenting a built up scenario, then adding a punch line that suddenly forces an absurd reinterpretation of the scenario (Chafe, 2007).

Humour has been identified as a fundamental aspect in children’s social interactions (Fine, 1977; Goldstein & McGhee, 1972; Goleman, 2006), and a tool that can help children establish meaningful relationships with peers and adults (Klein, 2003). During middle childhood children learn how to interact competently within various peer groups and develop friendships. For example, pro-social behaviours in middle childhood have been linked to greater peer acceptance (Ladd, 1999) and are also vital in the development of a sense of belonging to school (Hymel, Comfort, Schonert-Reichl, & McDougall, 1996; Osterman, 2000; Roeser, Midgley, & Urdan, 1996). Children who do not feel accepted in the school are at greater risk for adversity, not only socially but also
academically (McDougall, Hymel, Vaillancourt, & Mercer, 2001; Asher & Parker 1989).

A child’s capacity for using teasing and humour effectively with peers can impact just how they fit in to the peer group. McGhee (1989) suggests that when children share their constructive humour, they create opportunities to develop friendships. Consistent with this argument, McGhee found that, when second and third graders were asked to nominate peers by who best fit certain behavioural roles, children who were nominated as having a ‘good sense of humour’ were also nominated as most liked (r (204) = 0.38, p < 0.001) and as having friends (r (204) = 0.28, p < 0.001). However, one’s sense of humour is not always a good thing. Children who were nominated by peers as someone who ‘teases others’ were also nominated as ‘liked least’ as were those who were perceived as ‘picking on others’. Thus, although children with a positive sense of humour may be more likely to form successful relationships with peers, those who use humour cruelly may be less successful (Gest, Graham- Bermann, Hartup, 2001).

Humour, as a multifaceted phenomenon explored by researchers from various fields of inquiry, has been considered from three main perspectives; cognitive, psychoanalytic, and social. Cognitive analyses of humour are exemplified by Congruity theory, while psychoanalytic perspectives on humour are represented by Relief theory and the social aspects of humour is explored by the traditional Superiority theory as well as two other more recent theories of humour, Solidarity and Violation (Lefcourt & Martin, 1986; Veatch, 1998).

Incongruity theory explains humour in terms of the logical and cognitive perception of the unexpected and or the irrational resolution of the incongruity
that is the punch line of a joke, answering the question of what makes a joke funny (Lefcourt & Martin, 1986; Morreall, 1983; Oring, 2003; Shultz, 1976). Relief Theory views humour from a therapeutic perspective and answers the question of why people need to laugh. This theory claims that laughter derives from a release of built-up energy or tension (Freud, 1963; Fuhr, 2002; Grotjahn, 1957; Henman, 2001; Martin, 1986, 2004; Mindess, 1971). Jokes about taboo subjects allow one to explore such topics in a non-serious way.

The social or interpersonal functions of humour have been explored in Superiority, Solidarity and Violation theories. Superiority theory suggests that people laugh about the misfortune of others as a way of making one feels “better”, albeit at the expense of the other, underscoring the inappropriate and potentially harmful impact of humour for both the joke teller and the recipient (Gruner, 1997; Rapp, 1951; Tragesser & Lippman, 2005). In contrast, Solidarity theory deals with humour that enhances feelings of being part of a group as a result of a subtle agreement about the shared humorous experience that does not degrade a person’s identity (Coloroso, 2002; Tragesser & Lippman, 2005). One can develop or enhance a sense of camaraderie or highlight commonalities or common understandings through jokes and humour.

Finally, Violation theory deals with the personal and social interactions as well as the subjective interpretations that are involved in the use of humour. Violation theory suggests that something is funny when the audience can maintain a sense of normality while simultaneously accepting the violation of a concept dear to them (Veatch, 1998). In contrast, humour is not funny when the audience is
unable to maintain a sense of normality, or when the joke strongly violates a concept that is dear to them.

In light of such complexity, one would wonder whether children use humour in the same way as adults, and what child characteristics are necessary to use humour effectively in interpersonal contexts. Obviously, it seems unlikely that humorists consciously use the complex set of rules that have been detailed by theorists to underlie their humour production. Nevertheless, it is common knowledge that people are differentiated in their ability to use humour positively. Of interest in the present study is what characteristics might impact children’s use of humour within their social interactions.

Consistent with the Violation theory, one characteristic that should be related to use of humour is one’s capacity for empathy. Particularly, Violation theory evokes the notion that in order to use humour positively one has to be able to ‘predict’ or ‘read’ the audience’s potential interpretation of a joke. Ickes (1997) refers to this social skill as ‘empathic accuracy’. Based on that notion, the key to discerning whether a joke will be received positively or negatively is employing empathy when producing humour. Thus, one hypothesis that was explored in the present study is whether individuals who display greater empathy would be more likely to use humour positively as opposed to negatively.

In an effort to capture the social aspects of humour, Martin, Puhlik-Doris, Larsen, Gray, and Weir (2003) have developed a four-dimensional, self-report measure of humour, reflecting two maladaptive uses of humour (Self-Defeating and Aggressive Humour) and two adaptive uses of humour (Self-Enhancing and Affiliative Humour). The Humour Style Questionnaire (HSQ) was developed and
validated on adult and late adolescent populations (Kazarian & Martin, 2004; Klein & Kuiper, 2006; Kuiper, Grimshaw, Leit, & Kirsh, 2004; Martin et al., 2003; Vassilis & Scariot, 2002) across two different cultures. However, these four styles of humour have not yet been evaluated with younger samples. One purpose of the present study was to evaluate whether these humour styles were evident among elementary school age children.

What follows is a review of the literature on humour, which considers three perspectives on the study of humour: 1) a cognitive perspective, as reflected in the Incongruity theory of humour, 2) a psychoanalytic perspective as reflected in the Relief theory of humour, and 3) a social perspective, as presented in the Superiority, Solidarity, and Violation theories of humour. Next, this review considers research with adults identifying four different styles of humour. Following this, a consideration of the role that empathy, both cognitive and affective, plays in use of humour is presented. Against this backdrop, a statement of the problem addressed in the present study is presented, followed by a description of the methodology employed and the results obtained. This report ends with a discussion of the implications and limitations of the present research and possible future research directions.
Review of Literature

Theories of Humour

Laughter and humour are perceived to be necessary and valuable forms of human expression. After all, what would life be like without humour? Although funny, humour research has become a serious business. Researchers throughout history have investigated the phenomenon of humour, applying their unique lenses and paradigms in suggesting their theories and definitions of humour. The literature on Humour suggests three major approaches to the study of humour: the psychoanalytic view is presented by the Relief theory, the cognitive view of humour is presented by the Incongruity theory, and the social view of humour is presented by Superiority, Solidarity and Violation theories of humour.

Incongruity Theory: What is Funny

Historically, Incongruity theory has long been used to explain humour, with origins in comments made by philosophers such as Aristotle in the Rhetoric and Immanuel Kant. Primarily focusing on the object of humour, this school sees humour as a cognitive response to a perceived incongruity, a term broadly used to include ambiguity, logical impossibility, irrelevance, and inappropriateness (Morreall, 1983; Oring, 2003). Incongruity theory focuses on the cognitive elements of humour by associating two generally accepted incompatibilities. When jokes are examined in light of Incongruity theory, two objects in the joke are presented through a single concept, or 'frame'. The concept becomes applied to both objects and the objects become similar. As the joke progresses, it becomes apparent that the concept only applies to one of the two objects and thus the difference between the objects or their concepts becomes apparent. It is the lack of
a rationale in the relation of objects, people, or ideas to each other or to the environment that creates incongruity.

According to Incongruity theory, humour is a consequence of the discrepancy between two mental representations, one of which is an expectation. The greater the divergence of a stimulus from expectations in one or more dimensions the funnier the stimulus. The amusement in the incongruity is the intellectual reaction to something that is unexpected, illogical, or inappropriate in some way (Morreal, 1983; Martin, 1986).

Shultz (1976) identified two stages of incongruity: perception and resolution. Shultz's stages constitute a traditional view of incongruity, for it is only after the incongruity is perceived by an observer that it can be resolved, and it is in the resolution of the incongruity that the perceiver finds the humour. Some examples of jokes based on incongruity are: Did you hear about (the little moron) who stayed up all night studying for his blood test? Did you hear about (the little moron) who took a ruler to bed so he could tell how long he had slept?

In *Rhetoric*, Aristotle presents the earliest spark of an incongruity theory of humour finding that the best way to get an audience to laugh is to setup an expectation and deliver something "that gives a twist" (Aristotle, trans. 1685). In his *Critique of Judgment* (1724-1804), Immanuel Kant gives a clearer statement of the role of incongruity in humour: "In everything that is to excite a lively laugh there must be something absurd. Laughter is an affection arising from the sudden transformation of a strained expectation into nothing."

Three major criticisms have been levelled against Incongruity theory: (1) it is too broad to be very meaningful; (2) it is insufficiently explanatory in that it does
not distinguish between non-humorous incongruity and basic incongruity; and (3) it fails to explain why some things, rather than others, are funny. Nevertheless, Incongruity theory has perhaps being the most influential theory of humour, since it seems to account for most cases of perceived funniness.

A joke may help us explore incongruity theory further. A couple of strangers, a man and a woman, find themselves in the same sleeping compartment on a train. After some awkward discussion, he suggests, "I'll sleep on the top bunk, and you sleep on the bottom one. I think it will be all right." In the middle of the night, he leans over the side of the upper bunk, awakens the woman, saying, "I'm sorry to bother you, but I am really cold. Would you mind getting me another blanket?" She replies, with a gleam in her eye, "Why don't we, just for tonight, pretend that we are married." In surprise, he smiles and says, "Okay." She says, "Fine, get your own darn blanket." Her reply, which at first seems incongruous with her apparent seductive invitation, becomes appropriate when we reflect how quickly the honeymoon sweetness of a marriage can fade into a "Do it yourself" mentality.

Relief Theory: Humour as a Coping Device

Freud (1963) saw humour as fundamentally a way to release or save energy generated by repression. His Relief Theory has a clear physiological or psychophysiological nature. Freud proposed his theory to explain how laughter can release tension and "psychic energy". This energy continuously builds up within the human body, has no further use, and, therefore, has to be released. This release is spontaneous and expresses itself in laughter. Freud explains that this "psychic energy" in our body is built as an aid for suppressing feelings in taboo areas, like
sex or death. When this energy is released we experience laughter, not only because of the release of this energy, but also because these taboo thoughts are being entertained. In addition, use of humour allows the expression of what is otherwise forbidden in polite society. In that sense, humour is rebelling.

A half-century after Freud, Martin Grotjahn (1957), in the introduction to his book, *Beyond Laughter*, asserts that laughter and, therefore, humour can be used to express an unending variety of emotions. It is based on guilt-free release of aggression, and any release makes us perhaps a little better and more capable of understanding one another, ourselves, and life. Mindess (1971) finds humour liberating and a source of vivid living. He argues that a joke is funny if the text of the joke includes bearing of the burden, being the catalyst for the release.

Humour, then, must be inherent in the text of the joke and its presentation to the audience. If the audience experiences any release or relief, the joke has been successful. If not, the joke has failed. The essential element of humour is the effect that the joke has on the audience.

A more conventional version of Relief theory refers to the experience of pleasant sensation when humour replaces negative feelings like pain or sadness. The aim of humour is to create a feeling of enjoyment for an audience (Beeman, 1999). In his book *Humour and Life Stress*, Martin (1986) presents numerous statements of psychological theorists who have regarded humour as an adaptive coping mechanism. Research maintains that a sense of humour is important for rebounding from many different types of adversity (Henman, 2001).

One example is that of Viktor Frankl, a holocaust survivor who became a well known psychoanalyst in Europe following World War Two. In describing the
use of humour as a coping strategy, Frankl recalled that "humour was another of the soul's weapons in the fight for self-preservation" (Frankl 1946: 63). Frankl realized that funny stories made up by prisoners about severity of their reality allowed the prisoners to escape the harshness of the camp by focusing on a more hopeful future. Support for the argument that humour can positively influence people's state of hopefulness comes from a study by Vilaythong, Arnau, Rosen, and Mascaro (2003), in which 180 undergraduates who viewed a 15-minutes comedy video reported a significant increase in their state of hope relative to a control group viewing an affectively neutral video. In their study, humour indeed has the potential of being instrumental in coping with daily stressors, enhancing well being in the present and providing a more hopeful future outlook. However, the research evidence (Martin, 2004) for these effects is still quite weak, inconsistent, and inconclusive.

**Solidarity Theory**

Solidarity theory defines humour as a playful act between friends who are close enough that teasing is tolerated and all group members agree that the jokes are not to be taken seriously as the intention is to laugh and not to harm (Baxter, 1992). Teasing in the service of solidarity is a form of in-group humour that is the most frequently occurring type of interaction (La Gaipa, 1977), although for children it may be necessary to distinguish friendly teasing from taunting (Coloroso, 2002).

**Superiority Theory**

Superiority theory assumes that laughing about the misfortunes of others reflects our own superiority. The roots of Superiority Theory lie in classical Greek
and Roman rhetorical theory that regarded humour as based on malice, hostility, aggression, disparagement, or superiority. Included here is ethnic, redneck, blonde, racial, sexist, homophobic, and "dumb" jokes.

Superiority theory can be found historically in the work of Plato, Aristotle, and Hobbes. Plato suggested that humour is some kind of malice towards people who are considered relatively powerless. Hobbes further explained that humans are in a constant competition with each other, looking for the shortcomings of other persons. He considered laughter as an expression of a sudden realisation that we are better than others, an expression of 'sudden glory'.

In the "Philebus," Plato introduced the mixture of pleasure and pain that lies in the malice of amusement. He argued that ignorance is a misfortune that when found in the weak is considered ridiculous. Some of Aristotle's brief comments in the Poetics agree with Plato's view of the pleasure derived from comedy. Tragedy deals with subjects who are average or better than average. However, in comedy we look down upon the characters, since it presents subjects of lesser virtue than, or inferior to, the audience. Similarly, Aristotle described jokes as abuse, which should ideally be told without producing pain.

Rapp (1951) argues for a theory of humour based on hostility. The essence of this theory is that humour is maximal when our friends humiliate our enemies. Superiority based theories characterize the attitudes between the joke teller (or the joke's persona) and the target of the joke text, who may or may not be the audience. Gruner (1997) and later Tragesser and Lippman (2005) reformulated this theory as the Superiority Theory of Humour. The theory contains three parts:
(a) Every humorous situation has a winner and a loser, (b) Incongruity is always present in a humorous situation, (c) Humour requires an element of surprise.

Traggesser and Limpan (2005) suggest that teasing is a form of humour commonly used by children and includes aspects of superiority and solidarity. Their research with undergraduate students demonstrated that teasing is related to one's social position, supporting the proposition that teasing reflects superiority or competitive behaviour. Challenging the common perception of teasing as a friendly act of solidarity that enhances positive feelings between teaser and target, Traggesser and Limpan (2005) found that, among adults, teasing promoted perceptions of dominance and competitiveness, a lack of respectfulness, and a lack of support on the part of the teasing friend. Given this negative focus, teasing also engenders negative feelings about the relationship, such as irritation, a lack of closeness, and feeling belittled and disrespected. These feelings are consistent with one person attempting to ostracize or gain superiority over another.

There are different behaviours that are included under the rubric of teasing. While most teasing seem to be verbal, such as calling names, simply laughing at the target, sarcastic statements, facetious questions, tricking the target into believing something is untrue, and exaggerated imitations, there are also nonverbal forms of teasing, such as pointing at or mocking the target, making faces, taking some possessions and the like.

Children perceive teasing as approvable, as they justify many hurtful comments by saying "just kidding". Keith- Spiegel (1972) claims that not all theorists who included the element of superiority as part of humour believed that laughter is always disrespectful. Sympathy, friendliness, and empathy may be
combined with the laughter of superiority. Keltner, Young, Heerey, Oemig, and Monarch’s (1998) findings suggest that teasing, although humiliating, generated laughter and smiling, thus teasing may enhance bonds between individuals. In their study, 48 fraternity undergraduates evaluated teasing partners more favourably than members whom they did not tease. Therefore, teasing allowed group members to communicate norm violation and may thereby enhance social bonds. These findings also support superiority perspectives with the reservation that teasing includes some aspects of feeling solidarity with the others. This grey area is a cause for confusion for both sides of an insulting humoristic incident.

While it is assumed that most adults know how distinguish between hurtful teasing and funny- friendly teasing, Coloroso (2002) suggests that children are not aware of the difference between hurtful and friendly teasing. In her popular book on bullying, Coloroso suggests a number of strategies to help children realize the differences between friendly teasing and hurtful taunting.

When Humour Hurts: Violation Theory and Empathy

Violation theory narrows down the lens and looks more specifically at how the subjective perception of the audience is critical in swaying one’s interpretation of the punch line as being funny or hurtful. Violation theory provides answers to the critical question of when humour is used to hurt (Superiority) or to engender belonging (Solidarity).

Veatch (1998) presents the Violation Theory of Humour. The theory states that humour is fully characterized by three distinct conditions, all of which are necessary for humour to occur: (1) a persons’ subjective perception of a situation as “normal”, (2) aspects of the perceiver are violated, and (3) these two perceptions
of normality and violation occur simultaneously. An audience’s interpretation of a joke as not funny has two meanings under this theory of humour. It could mean that the joke was offensive as a result of lack of normality, or it could mean that the joke was not funny because there was no violation. In other words, violation is essential for funny jokes. However, it is only when violation is happening in conjunction with normality that the joke is funny.

Shapiro, Baumeister, and Kessler’s (1991) explanation of why targets of teasing are offended is in line with the violation and normality conditions of Violation theory; claiming that if the audience attributes malice to a communication the joke teller meant as playful, the humour is perceived as negative. In other words, if the audience perceives that his/her own principles were violated, the audience will be offended, although the joke teller’s intention may have been to play and laugh. In relation to this possible gap between what was intended and what was understood from what was said, comes the relevance of the skill of empathy as essential foundation in preventing violation of other’s values. Violation theory implies that, as the joke teller becomes aware of and empathic with the audience’s potential feelings of offence or contentment, hurts might be avoided. Clearly, humour is not solely roses, thus, distinguishing between maladaptive and adaptive use of humour prior to linking humour to empathy is essential.

*Humour Styles*

Martin (2004) argues that very little research has examined the effects of one’s sense of humour on interpersonal relationships. He suggests that researchers “should distinguish between styles of humour that are conducive to
greater relationship satisfaction, reduction of interpersonal conflict, empathy, and intimacy, and forms of humour that may interfere with effective social relationships" (Martin, 2004, p 16). Kirsh and Kuiper (2003) and by Svebak, Martin, and Holmen (2004) point to a need to distinguish positive and negative uses of humour. Most measures of sense of humour were developed on the assumption that humour has a positive effect on people, and they consequently ignored aspects or forms of humour that may be maladaptive, such as Aggressive or excessively self-disparaging humour.

In studies of adults and adolescents, Martin et al. (2003) developed a multidimensional measure, the Humour Styles Questionnaire (HSQ), which assesses four dimensions relating to different uses or functions of humour in everyday life. The two adaptive uses of humour are to enhance one's relationships with others (Affiliative Humour) and to enhance the self (Self-Enhancing Humour). The two maladaptive uses of humour are to enhance the self at the expense of others (Aggressive Humour) or at the expense of self (Self-Defeating Humour). Martin et al. stress that the distinction between these four types of humour is one of degree. Therefore, although these dimensions are expected to be distinguishable from one another, it is possible that there will be some degree of overlap among them.

The following are the four dimensions relating to individual differences in use of humour as described by Martin et al. (2003).

(1) Affiliative Humour involves saying funny things, telling jokes, engaging in spontaneous, witty joking to amuse others, facilitate relationships, and reduce interpersonal tension. Affiliative Humour is in accordance with Solidarity theory.
(2) Self-Enhancing Humour involves the ability to maintain a humorous perspective in the face of stress or adversity and to be amused by the incongruities of life. This form of humour is consistent with the Relief theories of humour. In comparison to Affiliative Humour, Self-Enhancing Humour has a more intrapsychic than interpersonal focus.

(3) Aggressive Humour involves the use of sarcasm, taunting, "put-downs", and disparagement. This use of humour disregards its hurtful potential impact on others. Aggressive use of humour is consistent with Superiority theory.

(4) Self-Defeating Humour involves attempts to amuse others by doing or saying funny things at one's own expense for the purpose of gaining approval and being the center of attention. Self-Defeating Humour appears to fit in several theories of humour by Reliving stress for the sake of solidarity feelings, although using some level of aggression towards self.

Klein and Kuiper (2006) propose that this four humour styles model is relevant to the ways in which children use humour. As children proceed through middle childhood their cognitive and social development matures (McGhee, 1979; 1989). Although one's sense of humour begins to develop during the preschool years, it is only during middle childhood (ages 6-12) that the ability to use humour in social relationships emerges. Klein and Kuiper further speculate about how adaptive and maladaptive humour styles may be related to peers acceptance or victimization. They provide conceptual analysis for how the use of different humour styles is most relevant to peers relationships and bullying in middle childhood.
Different children may use different humour styles to achieve their desired goals. Children may use Affiliative Humour to maintain group cohesiveness or a bully can make fun of a peer to enhance his/her own morale and entertain the group and perhaps maintain group solidarity. Children may use Self-Enhancing or Aggressive Humour to establish or maintain their dominance within a group. As well, different humour styles may fit more readily with particular personality traits. For example, a more pro-social child may prefer to use Affiliative Humour. In contrast, a bully may have the tendency to use Aggressive Humour.

This study focuses on the link between each one of these humour styles and empathy. The assumption underlying this investigation is that empathic joke tellers, who are able to foresee their audience’s interpretation of the joke, are more likely to use humour positively. Conversely, this study also addresses the question of whether high levels of empathy serve to reduce Aggressive use of humour.

**Empathy**

Empathy facilitates children’s socially competent interactions (Eisenberg, Wentzel, Harris, & Jerry, 1998; Saarni, 1990) and also inhibits aggression towards others (Batson, 1991; Hoffman, 2000; Miller, Eisenberg, Fabes, & Shell, 1996). Empathy, thus, plays a central role in human positive behaviour (Blair, 2005; Hoffman, 1987) as research and theory have often associated empathy with pro-social behaviour, and a lack of empathy with anti-social behaviour (Wied, Goudena and Matthys 2005).

The most common definition of empathy repeatedly provided in literature is "an affective response more appropriate to someone else’s situation than to one’s own" (Hoffman, 1987, p. 48). As suggested by Blair (2005) “empathy is an
emotional reaction in an observer to the affective state of another individual” (p. 699). Empathy is believed to be based upon the ability to understand others’
internal states. However, it is also characterized by a strong emotional component.
Accordingly, these two facets of empathy, as described by Eisenberg and Strayer
(1987) reflect two types of perspective taking. The first one is affective perspective
taking or the ability to feel another’s emotional states. The second one is cognitive
perspective taking or the ability to understand other’s emotions. Similarly, Smith
(2006) argued that the term empathy refers to sensitivity to, and understanding of,
the mental states of others. These two related human abilities have been defined in
the literature as mental perspective taking or cognitive empathy and the vicarious
sharing of emotion or emotional empathy.

Cognitive Empathy

Cognitive empathy is effectively a “Theory of Mind” construct, as it refers to
the ability to represent the mental states of others (i.e., their thoughts, desires,
beliefs, intentions, and knowledge). Ickes (1997) described this mental ability as
“everyday mind reading”, that allows the person to explain and predict behaviour
of self and others based on mental processes that include taking the perspective of
the other (or awareness of the thoughts of the other). In addition to being
considered a form of empathy in its own right, the ability to represent the mental
states of others has been considered to be necessary for balancing emotional
empathy (Eisenberg, Wentzel, Harris, & Jerry, 1998; Smith, 2006). Thus, feeling
with the other without incorporating cognitive perspective taking can be
overwhelming and even lead to psychopathology.
**Affective Empathy**

Affective empathy is the ability to 'decode' the quality of the sensations or emotions embedded in the observed behaviour of others without a precondition of applying conscious cognitive efforts. The meaning of the expressions of affective behaviour seems to be automatically understood by the empathic observer without the mediation of cognition (Gallese, 2003).

Eisenberg (2005) defines empathy as an affective response that results from the apprehension or comprehension of another's emotional state or condition. Feeling empathetically is basically feeling something like the other person is feeling or would be expected to feel in a given situation. For example, if a person observes another person who is sad and, consequently, feels sad herself, that person is experiencing one facet of affective empathy.

**Statement of the Problem**

Indeed, many studies attest to the importance of individual differences in empathy, as well as in use of humour (Martin et al., 2003). Empathy-related studies revealed that a higher degree of empathy (Davis, 1983) predicts better functioning in interpersonal relationships. Conversely, lower levels of empathy have been shown to be related to behaviour disorders (Smith, 2006) and to aggressive behaviour (Miller & Eisenberg, 1988) as well as to criminal offending (Jolliffe & Farrington, 2004). Although empathy and use of humour have each been linked generally to social functioning, no research yet has investigated specifically how individual differences in empathy (i.e., cognitive and affective empathy) may relate to individual differences in use humour (i.e., Affiliative, Self-Enhancing, Aggressive, and Self-Defeating) among school age children.
Research Questions

Question #1. Does the Humour Style Questionnaire (HSQ) measure the four humour styles when used with elementary school children?

The Humour Style Questionnaire was initially developed for use with and validated on an adult population and was never used with elementary school children. The present study examined whether the same four humour styles emerged in self-reports of humour among students ages 8-13. An exploratory factor analysis was used to validate the use of HSQ with the current sample of children.

Question #2. Are there gender differences in children’s reported use of humour and their reported levels of empathy?

Previous research (Jolliffe & Farrington, 2004, 2006a) has shown that low affective empathy was significantly related to bullying for female subjects, but not for male subjects. As well, Jolliffe and Farrington (2006b) have found that female subjects scored higher than male subjects on both affective and cognitive empathy. Accordingly, it was expected in this study that female subjects who scored low on affective empathy would be more likely to score high on maladaptive uses of humour. Research (Smith, 2006) has also demonstrated that adult male subjects engaged in more violent verbal bullying than adult female subjects. It was therefore expected that more boys than girls would report using maladaptive humour. Martin et al.’s. (2003) research findings indicate that male subjects scored higher than female subjects on Aggressive and Self-Defeating Humour. Based on this research finding, it is hypothesized that the link between use of humour and reported degree of empathy would vary across gender.
Question #3. What is the nature of the relationship between the four styles of humour and the two types of empathy?

The primary focus of the present study was an investigation of the links between humour styles and two different forms of empathy, affective and cognitive. Although exploratory in nature, the present investigation considers two hypotheses regarding these relationships based on previous theory and research.

a) It was hypothesized that lower levels Cognitive and/or Affective Empathy would be more strongly related to negative use of humour (i.e., Aggressive and Self-Defeating Humour). Both Olweus (1991) and Rigby (1996) suggested that low empathy may be causally related to anti-social behaviours such as bullying. Contemporary operational definitions of bullying include verbal aggression such as taunting which is similar to an aggressive style of humour, as measured in the present study. The hypothesized relationship between low empathy and use of Aggressive Humour was based on exactly the same theoretical framework as the relationship between low empathy and antisocial behaviour. That is, children who are less capable of empathizing with the feelings or experiences of others were expected to be less able to comprehend another's negative emotional reaction, which occurs as a result of their taunting, and therefore would be more likely to continue to engage in such negative behaviour. Conversely, children with higher levels of empathy may be inhibited and less inclined to use or continue aggressive teasing behaviour in the future.

b) It was hypothesized that high Cognitive and/or Affective Empathy would be related to positive uses of humour (i.e., Affiliative and Self-Enhancing Humour). Empathy helps in understanding others' thoughts and intentions. When
two individuals feel similar emotions they are better able to understand each other, take each other's perspective, and thus are more likely to accurately perceive each other's perceptions and intentions. Based on this notion that the presence of empathy facilitates prosocial behaviour and inhibits antisocial behaviour (Blair, 2005; Hoffman, 1987; Weid et al., 2005), it was hypothesized that those children who used more positive styles of Humour would also report greater Cognitive and Affective Empathy than those who use negative styles of humour.

**Question #4.** Do Cognitive and/or Affective Empathy explain the use of each of the four humour styles above and beyond gender?

Given the link between empathy and humour is established, and the links between gender and empathy and gender and use of humour are established. It would be essential to further examine the explained variance in the dependent variables, four humour styles, by the independent variables, cognitive and Affective Empathy above and beyond the variance explained by gender.
Methodology

Participants

Data for this study was obtained from a larger collaborative project with two schools that sought to assess children's social relationships at school, evaluating a school-wide effort to enhance student interpersonal relations by addressing issues such as bullying and negative teasing. Data collected at the outset of this project (prior to the start of any school initiative) were used to address the research questions specified above.

Participants in the current study were 191 elementary school students in grades 4 to 7 (8 to 13 years of age) from 12 different classes, in two different schools within a single district. Seven classes were from School 1 (composed of population from diverse ethnic background and relatively high socioeconomic status), while the other five classes were from School 2 (composed of a more ethnically homogeneous population and mixed socioeconomic status).

Participation rates in both schools reflected 71% of the eligible 268 potential participants. The distribution of participants according to age and gender is presented in Table 1. Of the students who participated, 80.2% reported speaking English at home and 17.6% reported not speaking English at home. Of those who do not speak English at home, 80% reported that reading and writing in English is "easy" for them, 18% reported that reading and writing in English is "OK" for them, and only 1.2% reported that reading and writing in English is "Hard" for them. Those who reported that English is Hard for them were recommended by their teacher as capable of reading and understanding the content of the survey, thus, they were not omitted from the sample. Prior to including students in data
collection, teachers were consulted regarding students' English proficiency, and only those student who the teachers felt could adequately understand the survey content were included in the present sample.

Table 1

*Distribution and Percent of Participants by Age and Gender*

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of Girls (% of total sample)</th>
<th>Number of Boys (% of total sample)</th>
<th>Total n and % by Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>0 (0%)</td>
<td>1 (0.5%)</td>
<td>1 (0.5%)</td>
</tr>
<tr>
<td>9</td>
<td>15 (7.9%)</td>
<td>12 (6.3%)</td>
<td>27 (14.1%)</td>
</tr>
<tr>
<td>10</td>
<td>22 (11.5%)</td>
<td>15 (7.9%)</td>
<td>37 (19.4%)</td>
</tr>
<tr>
<td>11</td>
<td>33 (17.3%)</td>
<td>25 (13.1%)</td>
<td>58 (30.4%)</td>
</tr>
<tr>
<td>12</td>
<td>32 (16.8%)</td>
<td>29 (15.2%)</td>
<td>61 (31.9%)</td>
</tr>
<tr>
<td>13</td>
<td>3 (1.6%)</td>
<td>4 (2.1%)</td>
<td>7 (3.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>105 (55.1%)</td>
<td>86 (45.0%)</td>
<td>191 (100%)</td>
</tr>
</tbody>
</table>

*Procedures*

Students in grades 4-7 were initially visited in their home classrooms by one of the principal investigators. The purpose of the study and the nature of the activities involved were explained. At that time, information letters (Appendix A) and parent consent forms (Appendix B) were distributed to students to take home to their parents. All students who received written parental consent and who themselves had agreed to participate (Appendix C) were asked to complete a series of self-report measures in one 40-minute classroom period. For those students who received parental consent, but who were absent on the day of testing, alternate arrangements were made with the teachers to conduct testing at another time within a week of the scheduled class testing.
Students were informed that participation in the study was entirely voluntary, and that withdrawal from this study or refusal to participate would not jeopardize the student in any way. Students were also told that all information collected was strictly confidential and was not available to students, teachers, parents or any other school personnel.

**Measures**

Data for this study were taken from a larger data set collected as part of a collaborative project with two schools. Relevant to this study are the paper-and-pencil, self-report measures of demographic information, humour, and empathy (Appendix D). The empathy and humour measures both utilized a five-point response scale for all self-report items that ranged from 1= "never true" to 5= "always true".

*Demographic information.* Participating students' demographic information was collected by having them complete a brief, one-page questionnaire asking them to report on their gender, age, grade, birth date, primary language spoken in the home, whether or not reading and writing in English was easy/hard for them, and their racial or ethnic identity.

*Humour.* The Humour Styles Questionnaire (HSQ) was developed to assess adult use of four styles of humour. This measure, developed by Martin et al. (2003), includes 32 items that clustered into four humour styles sub-scales among adults. Test-retest reliabilities were computed using data from a sample of 179 undergraduate students who were administered the HSQ on two occasions one week apart. Reliabilities for the Affiliative, Self-Enhancing, Aggressive, and Self-Defeating Humour scales, respectively, were .85, .81, .80, and .82. (all p's < .001).
The internal consistencies (Cronbach's alpha) of the four subscales was based on the data from 1195 participants (725 women, 470 men), ranging in age from 14 to 87 years (mean age=25, SD = 15.68). All four scales showed adequate internal consistencies, as demonstrated by Cronbach alphas for Affiliative, Self-Enhancing, Aggressive, and Self-Defeating Humour scales, respectively, were .80, .81, .77, and .80 (p < .001).

The Affiliative Humour style was defined by being funny and telling jokes to amuse others, to facilitate relationships, and to reduce interpersonal relationships. An example of an Affiliative Humour items is: “It is easy for me to make others laugh – I seem to be a naturally humorous person”.

The Self-Enhancing Humour style was defined by having a general humorous outlook on life even in the face of stress or adversity. An example of Self-Enhancing Humour item is: “If I’m by myself and I’m feeling unhappy, I try to think of something funny to cheer myself up.”

The Aggressive Humour style was defined by use of sarcasm, teasing, ridicule, “put-down” or disparagement. An example of Aggressive Humour item is: “If someone makes a mistake, I like to tease them about it”.

The Self-Defeating Humour style was defined by excessive self-disparaging humour, attempting to amuse others by doing or saying funny things at one’s own expense as a means of gaining approval. An example of a Self-Defeating style item is: “I can get carried away in putting myself down if it makes others laugh”.

The intercorrelations among the four humour sub-scales have been found generally to be quite low among adults, attesting to the distinctiveness of the various subscales. Affiliative and Self-Enhancing Humour have been found to be
positively correlated, $r (468) = .33$ for male subjects, and $r (723) = .36$ for female subjects, both $p < .001$), indicating that individuals who use humor to enhance relationships with others were also likely to engage in Self-Enhancing uses of humor. The Affiliative and Aggressive Humor scales have also been found to be positively correlated $r (468) = .28$ for male subjects, and $r (723) = .22$ for female subjects, both $p < .001$), suggesting that individuals who frequently joke and laugh with others to enhance relationships also show some tendency to engage in sarcastic or hostile humor. The Aggressive and Self-Defeating Humor scales have been found to be positively correlated $r (468) = .22$ for male subjects, and $r (723) = .23$ and female subjects, both $p < .001$), indicating that those who use humor in hostile ways also tended to engage in excessively self-disparaging and avoidant uses of humor. The remaining correlations were all less than .13 (although some were significant due to the large sample size).

For this project, the HSQ was adapted for use with elementary school children. Adaptation mainly included slight wording changes to make items more understandable to children. All items maintained their original meaning. Items with “double negative” statements were changed (e.g., omitting don’t and reversing the items to avoid confusion). The words feeling depressed were replaced with feeling sad. Finally, qualifiers such as “usually” or “often” were eliminated to avoid confusion with the 5-point response scale options.

**Empathy.** The Basic Empathy Scale (BES) assesses the capacity to experience the emotions of another (Affective Empathy) and to comprehend the emotion of another (Cognitive Empathy). This measure, developed by Jolliffe and Farrington (2006b) for use with adolescents (aged about 15), includes 20 items;
nine cognitive items and 11 affective items. An example of affective empathy item is, “After being with a friend who is sad about something, I usually feel sad”. An example of Cognitive Empathy item is, “I can understand my friend’s happiness when they do well at something”. Based on a sample of 363 adolescents in year 10 (aged about 15) both the cognitive items (9 items, $\alpha = .79$) and the affective items (11 items, $\alpha = .85$) showed adequate internal consistencies.

One year later, a second set of data was collected from 357 different adolescents (182 males, 175 females). Based on these two samples (363 and 357), a confirmatory factor analysis was used on the final 20 items of the BES based on a total sample of 720 students in grade 10 (age of 14) to develop internal validity for the cognitive and affective scales of empathy. Results suggest that the two factor solution was superior (Jolliffe & Farrington, 2006).

Construct validity for the BES was based on theoretical and empirical evidence. Concurrent validity between the cognitive and empathic subscales of BES, as shown by a positive correlation of $r (376) = .41 (p < .0001)$ for male subjects and $r = (344) .43 (p < .0001)$ for female subjects. In addition, gender differences in BES were examined to validate previous findings by Davis (1983) that female subjects score much higher on measures of empathy than male subjects. Results showed that female subjects, as predicted, scored significantly higher than male subjects. For the Cognitive Empathy scale, the mean score for male subjects was 32.2 (S.D. = 5.1), and the mean score for female subjects was 35.0 (S.D. =3.9). For the Affective Empathy scale, the mean score for male subjects was 32.1 (S.D. =6.5), and the mean score for female subjects was 40.3 (S.D. = 5.8). Finally, Jolliffe and Farrington (2006b) reported a correlation between the BES
and Interpersonal Relativity Index (IRI) (Davis, 1983) that revealed the similarity between the measures as reflected in the relatively high inter correlation \( r (376) = .53 \) for male subjects, \( r (344) = .43 \) for female subjects).
Results

Data Preparation

Data Entry

Student responses to the questionnaires were recorded directly on the surveys. Responses were subsequently coded and entered into computer files by a professional data company to maximize the accuracy of data entry, with each entry double checked for accuracy.

Next, negatively-worded items were reversed to align with positively-worded items, so that all items would have the same directionality. High mean scores for all items indicate high magnitude on that construct.

The data were then screened for missing data. For all data that was Missing Completely At Random (MCAR) and occurred for less than 5% of the sample, the sample mean for the item was substituted for the missing value. An examination of means obtained both with and without this mean substitution revealed minimal changes to overall mean values (i.e., mean changes from 3.33 to 3.34). In addition, for the humour self-report measure, one item was inadvertently omitted from the surveys of 51 students due to a clerical error. Although the percent of missing data for that item was 26.7, these missing data were also considered random mainly because the non-response was independent of the missing values (Fox-Wasylyshyn & El-Masri, 2005). Thus, again, the sample mean for this item was substituted for the missing values. Minimal differences were observed between overall means when computed with and without substitution for the missing item (e.g., mean changed from 2.14 to 2.11 for this item). Accordingly, the mean substitution was included in all subsequent analyses.
Data Screening

All data were examined with regard to the assumptions of multivariate analysis; normality, linearity, homoscedasticity and multicollinearity (Tabachnick & Fidell, 1996). Unless otherwise specified, results of these data screening efforts indicated no difficulties for the present analyses. For the empathy and humour scales, such screening was completed after subscale scores were computed. In the case of the humour scale, creation of the subscales was determined on the basis of results of factor analyses of the original items, developed for use with adults, but adapted for use with children in the present study.

This report begins with results of a factor analysis that addresses the first research question, regarding the assessment of children’s use of humour using a measure adapted from research with adults. The report continues with preliminary analyses followed by analyses conducted to address the three remaining research questions.

Question # 1

Humour Styles Questionnaire (HSQ) for Children: Factor Analysis

The Humour Style Questionnaire (Martin et al., 2003) was designed for use with adults. Therefore, the first question of this study is: Does the Humour Style Questionnaire (HSQ) measure the four humour styles when used with elementary school children? Hence, an initial focus in the present study was to validate the use of HSQ with children by examining whether the 32 humour items included in the scale as administered to children in the present sample would yield the same or similar four factors as in the original scale based on an adult population. For that purpose, an exploratory factor analysis was conducted.
Factor analysis can be described as a method to establish convergent validity for items that form a factor and divergent validity for items that measure different constructs and thus form a separate factor (Keith, 2005). The Humour Style Questionnaire (HSQ) was developed and validated for use with adult population. In the current study, HSQ items were reworded to fit a younger population and were administered to 191 elementary school age students. Accordingly, it was necessary to reexamine the validity of the items in measuring the four humour styles specifically with the current sample. The specific method of factor analysis used in this study was an exploratory factor analysis (principal component analysis and varimax rotations). Although it was used in a confirmatory fashion, given the fact that items were based in previous research and relevant theory, an exploratory factor analysis was deemed appropriate, given the need to determine which constructs underlie the use of humour in a developmentally different sample.

The type of analysis chosen in this study was principal component analysis, although factor analysis is considered to be theoretically more correct, results of factor analysis and principal component analysis differ little (Field, 2000). The sample size required for exploratory factor analysis is an issue of importance, although there is no strict rule regarding sample size. Costello and Osborne (2005) reviewed current practice for exploratory factor analysis and reported that the 40.5% of studies used a 5:1 (subjects to item) ratio (or less). In the current study there was a ratio of 191 subjects to 32 items, that is, a ratio of approximately 5 or 6:1. Although not ideal, this ratio is not unusual within the literature.
Another issue of consideration prior to running a factor analysis is an examination of the intercorrelations among the items of each potential subscale. Variables are expected to be intercorrelated, but they should not be overly correlated as that would cause difficulty in determining the unique contribution of each variable to a factor. Examination of intercorrelations among items within each potential humour style subscale revealed that the majority of items intercorrelated to a reasonable degree that shows relationship, but not redundancy. All items were retained for subsequent analysis.

Finally, running the factor analysis provides several indicators of the quality of the analysis. The Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett’s test of sphericity were examined in the present data set. The KMO statistic varies between 0 and 1; a value of 0 indicates that the sum of partial correlations, indicating diffusion in the pattern of correlations. A value close to 1 indicates that patterns of correlations are solid, thus, factor analysis should yield distinct and reliable factors. The KMO value of .774 is considered to be good, and suggests that the factor analysis was appropriate for this data set. Bartlett’s test of the desired relationship between the variables was highly significant (p < 0.001); also indicating that factor analysis is appropriate.

Factor analysis is an exploratory data reduction tool in the hands of the researcher, and as such, it is often the case that no particular number of factors is specified in advance. In the present case, however, the decision was made to force a four-factor solution, based on evidence that previous HSQ research with adults (Martin et al. 2003) has identified four distinct humour styles using these items, modified only slightly for use with a younger sample. In exploratory factor analysis
it is common to examine all the factors evident for which the eigenvalues are >1, and to consult a scree plot of the data to determine the number of factors to consider. For the present sample, an examination of the scree plot indicated that the point of inflexion on the curve suggested that a four factor solution was optimal, justifying the apriori decision to force a four-factor solution. With regard to the practice of only interpreting factors with eigenvalues greater than one, it is noted that the first four factors identified in the present data had eigenvalues of 5.5, 3.6, 2.2, and 1.7, respectively.

For the present adaptation of the HSQ for use with late elementary age students, the four factors identified were as follows. Factor 1 (Affiliative Humour) accounted for 17.40% of the variance; Factor 2 (Self-Defeating Humour) accounted for 11.34% of the variance; Factor 3 (Self-Enhancing Humour) accounted for 7.07% of the variance; and Factor 4 (Aggressive Humour) accounted for 5.58% of the variance. As seen in Table 2, 26 of the 32 humour items administered loaded significantly (factor loading of .4 or higher) across the four factors. Two items had relatively equal cross loadings and were eliminated; four items failed to load significantly on any of the four factors. Of the remaining 26 items, seven were selected for the final Affiliative Humour subscale (α = .84), eight were selected for the final Self-Defeating Humour subscale (α = .77), six were selected for the final Self-Enhancing Humour subscale (α = .77), and five of the items were selected for the final Aggressive Humour subscale (α = .52). Internal consistency (Cronbach’s Alpha) was quite respectable for the first three subscales (α = .84, .77, .77), but much lower for the Aggressive Humour subscale (α = .52). Although adequate for
Table 2

*Items (abbreviated) and Varimax-rotated factor loadings of the four scales of the 26 humour items (N = 191)*

<table>
<thead>
<tr>
<th>Factor 1: Affiliative Humour (a = .84)</th>
<th>Affiliative Humour</th>
<th>Self-Defeating Humour</th>
<th>Self-Enhancing Humour</th>
<th>Aggressive Humour</th>
</tr>
</thead>
<tbody>
<tr>
<td>I joke around with my friends</td>
<td>.779</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I enjoy making people laugh</td>
<td>.763</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I laugh and joke a lot with friends</td>
<td>.756</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like to tell jokes or make people laugh</td>
<td>.715</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I usually laugh and joke with others</td>
<td>.693</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I make others laugh, I'm a humorous person</td>
<td>.660</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have trouble saying funny things with others</td>
<td>.470</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2: Self-Defeating Humour (a = .77)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I let others laugh at me to keep friends happy</td>
<td>.718</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I put my self down trying to be funny</td>
<td>.679</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I put myself down to make others laugh</td>
<td>.650</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I say funny about own faults people like me</td>
<td>.644</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I say funny things to put myself down</td>
<td>.635</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I let people laugh at me more than I should</td>
<td>.569</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I'm the one others make fun of joke about</td>
<td>.509</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If feeling unhappy, I hide feeling by joking</td>
<td>.406</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 3: Self-Enhancing Humour (a = .77)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>When I feel upset I think of funny to feel better</td>
<td>.807</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When I'm by myself I think of funny to cheer up</td>
<td>.780</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When I feel sad, I cheer myself up with humour</td>
<td>.672</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sense of humour keeps me from being sad</td>
<td>.503</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don't need others to be amused can laugh</td>
<td>.452</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I cope with problem by thinking of funny</td>
<td>.404</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 4: Aggressive Humour (a = .52)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Even if funny, not laugh if someone is hurt</td>
<td>.647</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It bothers me if humour used to put down</td>
<td>.580</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I never laugh at others even if all do</td>
<td>.545</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If someone makes a mistake I tease them</td>
<td>.499</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When telling jokes I worry how other take it</td>
<td>.412</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Crossloading: items that were excluded**

6. Even by myself I'm amused by silly things. .425  .425
27. I use jokes to put down people I don't like. .459  .424

**Loading < 0.40: items were excluded**

19. If something is funny I say it even if not appropriate.
9. I rarely make others laugh by telling funny stories about myself.
22. If I'm feeling sad I lose my sense of humour.
7. People are never hurt or offended by my jokes.
the purposes of the present research, results obtained regarding this subscale must be viewed with caution. Accordingly, all four subscales were retained for consideration in the present study. Although four factors are formulated, the validity of these factors is limited to the analysis of this specific sample, due to relatively small sample as well as due to the exploratory nature and purpose of exploratory factor analysis.

\textit{Preliminary Analysis}

\textit{Composing Variables}

Based on the results of the factor analysis, and given evidence of adequate internal consistency for the four subscales identified, four composite variables were created, reflecting each of the four humour subscales. For each subscale, student responses to each of the items included in the scale were summed and averaged to create an overall subscale score, with higher scores reflecting greater use of the particular humour style in each case. Thus, each subject received a score reflecting their use of Affiliative Humour, Self-Defeating Humour, Self-Enhancing Humour and Aggressive Humour. Following previous research by Jolliffe and Farrington (2006b) on the Basic Empathy Scale (BES), student responses to relevant items included in the Cognitive and Affective Empathy subscales were also summed and averaged to yield two empathy composites. In the present sample, student responses to the items included in each of the empathy subscales of the BES yielded adequate internal consistency ($\alpha = .72$ for the Cognitive Empathy scale and $\alpha = .80$ for the Affective Empathy scale).

Following are reports of the assumptions of normality for the four humour scales and the two empathy scales based on the current sample. First, the data
were screened for univariate outliers by examining box plots and standardized scores for each of the variables. Box plots revealed few scores that seemed to be outside of the normal range; therefore, a closer examination of the actual z-scores was conducted. According to Hair, Black, Babin, Anderson and Tatham (2006) univariate outliers are z-scores with an absolute value of equal to or larger than four. The examination of z-scores revealed that none of the standardized scores exceeded the recommended indicator for outliers. Accordingly, all items were maintained in subsequent analyses.

Second, variables were examined for normal distribution, using tests of skewness and kurtosis. Skewness describes how unevenly the data is distributed with a majority of scores piled up on one side of the distribution and a few stragglers off in one tail of the distribution. Based on Tabachnick and Fidell (1996) an absolute value that is not less than three signifies a potential problem. The z score for skewness was calculated by dividing the skewness value by the standard error for skewness. Z scores for each of the subscales included in the present study indicated no problems with skewness for the Affective Empathy ($z = -1.04$), or the Cognitive Empathy ($z = -1.19$) subscales, nor for the Self-Enhancing Humour ($z = -0.42$) or the Aggressive Humour subscale ($z = -1.19$). However, potential problems were identified for the Affiliative Humour subscale ($z = -3.88$) and the Self-Defeating Humour subscale ($z = 4.0$).

Kurtosis describes the distribution of scores. If too many scores or all of the scores are piled up on the mean or around the mean then the distribution is too peaked and it is not normal, vice versa for when a distribution is too flat.
The z score for kurtosis is obtained by dividing the kurtosis value by the standard error for kurtosis. Kline (2006) indicates that the absolute value of z score for kurtosis is less than 8. Z scores for each of the subscales included in the present study indicated kurtosis levels within the acceptable range (Affective Empathy, \( z = -1.87 \), Cognitive Empathy, \( z = 1.31 \), Affiliative Humour, \( z = .49 \), Self-Enhancing Humour, \( z = -1.12 \), Aggressive Humour, \( z = -.77 \), and Self-Defeating Humour, \( z = 1.92 \)).

Homoscedasticity is an assumption for analyses using ungrouped univariate data. Variables are said to be homoscedastic when the variability in scores for one continuous variable is roughly the same at all values of another continuous variable (Tabachnick & Fidell, 1996). This is related to the assumption of normality because if both variables are normally distributed than there should be homoscedasticity. Scatter plots were used to assess homoscedasticity.

**Table 3**

*Means, Standard Deviation and Alpha Coefficients for All Variables (\( N = 191 \))*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Empathy</td>
<td>3.32</td>
<td>.62</td>
<td>.80</td>
</tr>
<tr>
<td>Cognitive Empathy</td>
<td>3.92</td>
<td>.48</td>
<td>.72</td>
</tr>
<tr>
<td>Affiliative Humour</td>
<td>4.03</td>
<td>.65</td>
<td>.84</td>
</tr>
<tr>
<td>Self-Enhancing Humour</td>
<td>3.16</td>
<td>.69</td>
<td>.77</td>
</tr>
<tr>
<td>Aggressive Humour</td>
<td>2.54</td>
<td>.62</td>
<td>.52</td>
</tr>
<tr>
<td>Self-Defeating Humour</td>
<td>2.14</td>
<td>.64</td>
<td>.77</td>
</tr>
</tbody>
</table>
Examination of the scatter plots revealed no evidence of heteroscedasticity. The means, standard deviations and scale reliabilities for the measures of Affective Empathy, Cognitive Empathy, Affiliative Humour, Self-Enhancing Humour, Aggressive Humour, and Self-Defeating Humour are presented in Table 3.

**Subtests Correlations**

Correlational analyses were conducted in order to assess inter-correlations among subscales. The correlation between Affective Empathy and Cognitive Empathy was $r_{(189)} = .37; (p < .001)$. While Cognitive and Affective Empathy scales are related to each other, the modest magnitude of this correlation suggests that they are also distinct in the constructs they measure.

Table 4

*Intercorrelations (one-tailed) among Humour Style Subscales (N = 191)*

<table>
<thead>
<tr>
<th></th>
<th>Affiliative Humour</th>
<th>Self-Enhancing Humour</th>
<th>Aggressive Humour</th>
<th>Self-Defeating Humour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliative Humour</td>
<td>1.00</td>
<td>.455***</td>
<td>.140*</td>
<td>.011</td>
</tr>
<tr>
<td>Self-Enhancing Humour</td>
<td>1.00</td>
<td></td>
<td>.020</td>
<td>.120*</td>
</tr>
<tr>
<td>Aggressive Humour</td>
<td></td>
<td>1.00</td>
<td></td>
<td>.018</td>
</tr>
<tr>
<td>Self-Defeating Humour</td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
</tr>
</tbody>
</table>

* $p < .05$, ** $p < .01$, *** $p < .001$

Three findings regarding the interrelations among the four Humour subscales are noteworthy. First, use of Self-Defeating Humour was not significantly correlated with use of Aggressive Humour. These two subscales are theoretically related to each other, both being maladaptive uses of humour, but distinct in that Aggressive Humour is directed towards others while Self-Defeating
Humour is directed towards the self, nevertheless these two uses of humour were correlated in the original measure (Martin et al., 2003). In contrast, and as might be expected, a significant correlation was found between the two positive/adaptive uses of humour; Affiliative Humour and Self-Enhancing Humour ($r (189) = .46, p = .00$). The third interesting correlation is that observed between use of Aggressive Humour and use of Affiliative Humour, although significant, the magnitude of this relationship is low ($r (189) = .140, p = 0.03$). Intercorrelations among the four humour style measures are presented in Table 4.

**School Differences**

Given the very different communities served by the two schools from which the present sample was taken, preliminary analyses were conducted in order to see whether there were significant differences between the two schools on each subscale. Specifically, Independent T tests were conducted to evaluate variations across schools. Means and standard deviations for School 1 and School 2, as well as F change and its significance are reported in the Table 5.

Of all the six variables examined, the means observed for Affective Empathy ($p = .007$), Affiliative Humour ($p = .002$), and Aggressive Humour ($p = .034$) were found to be significantly ($p < .05$) different between the two schools. More specifically, these differences were due to higher means in School 2 compare to School 1.

A closer examination of the data, considering the correlation between reported use of Affiliative and Aggressive Humour among students in each of the two schools, revealed that the correlation was nonsignificant in School 1, $r (107) = .071, p = .232$, and only approached significance in School 2 $r (80) = .175, p = .058$. 
Said differently, while the correlation is not significant at all in school 1, the correlation is marginally significant in School 2.

Table 5

Descriptive Statistics of School Differences in Empathy and Use of Humour

<table>
<thead>
<tr>
<th>Variable</th>
<th>School</th>
<th>n</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t test</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Empathy</td>
<td>1</td>
<td>109</td>
<td>3.21</td>
<td>.61</td>
<td>-2.74</td>
<td>.007*</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>82</td>
<td>3.46</td>
<td>.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Empathy</td>
<td>1</td>
<td>109</td>
<td>3.87</td>
<td>.49</td>
<td>-1.45</td>
<td>.146</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>82</td>
<td>3.98</td>
<td>.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affiliative Humour</td>
<td>1</td>
<td>109</td>
<td>3.91</td>
<td>.70</td>
<td>-3.16</td>
<td>.002*</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>82</td>
<td>4.20</td>
<td>.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Enhancing Humour</td>
<td>1</td>
<td>109</td>
<td>3.11</td>
<td>.76</td>
<td>-1.15</td>
<td>.249</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>82</td>
<td>3.23</td>
<td>.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggressive Humour</td>
<td>1</td>
<td>109</td>
<td>2.45</td>
<td>.58</td>
<td>-2.13</td>
<td>.034*</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>82</td>
<td>2.64</td>
<td>.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Defeating Humour</td>
<td>1</td>
<td>109</td>
<td>2.09</td>
<td>.62</td>
<td>-1.12</td>
<td>.264</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>82</td>
<td>2.20</td>
<td>.66</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In order to evaluate whether student use of humour and reported empathy varied as a function of either Sex of subject or School, a series of 2 x 2 (school x sex) between-subjects, factorial Analyses of Variance (ANOVA) were conducted. With regard to use of Affiliative Humour, results indicated a significant main effect for school $F(1,187) = 10.59, p = .00$. Students in School 1 ($M = 3.91, SD = .70$)
reported lower levels of Affiliative Humour than students in School 2 (M = 4.2, SD = 0.54). There was a marginally significant main effect for Sex, $F(1,187) = 3.19$, $p = 0.076$, in which boys are reported greater use of Affiliative Humour (M = 4.11, SD = 0.62) than girls (M = 3.97, SD = 0.67). However, there was no significant interaction between sex and school $F(1,187) = 0.39$, $p = 0.53$.

Results of the 2 x 2 (school x sex) ANOVA conducted on reported use of Aggressive Humour revealed a significant main effect for school $F(1,187) = 7.965$, $p = 0.00$. Students in School 1 (M = 2.45, SD = 0.58) reported significantly less use of Aggressive Humour that students in School 2 (M = 2.64, SD = 0.64). There was also a significant main effect for Sex, $F(1,187) = 25.83$, $p = 0.00$. Boys reported greater use of Aggressive Humour (M = 2.76, SD = 0.52) than girls (M = 2.35, SD = 0.63). There was no significant interaction between Sex and School $F(1,187) = 0.189$, $p = 0.664$.

Question #2

Are there gender differences in children's reported use of humour and their reported levels of empathy?

It was hypothesized that there would be a significant difference between boys and girls in Affective and Cognitive Empathy and in Aggressive Humour. In order to see if there were significant mean differences between boys and girls in their reports of empathy and use of humour, a Independent samples t test with grouping for sex was computed for all six subscales. Means and standard deviations for girl group and boy group as well as t values and its 2-tailed significance are reported in the Table 6.
Although there are mean differences between boys and girls in all the six subscales, significant differences were found for only three of the subscales. Specifically, boys and girls differed significantly in term of reported use of Aggressive Humour, and in reported Affective and Cognitive Empathy.

**Table 6**

*Means and Standard Deviation for Affective Empathy, Cognitive Empathy, Affiliative Humour, Self-Enhancing Humour, Aggressive Humour, Self-Defeating Humour subscales (N = 191) for girls and boys separately, and t change between boys and girls and its significance*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Gender</th>
<th>n</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t Change</th>
<th>Sig (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Empathy</td>
<td>Girl</td>
<td>105</td>
<td>3.52</td>
<td>.57</td>
<td>5.43</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Boy</td>
<td>86</td>
<td>3.06</td>
<td>.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Empathy</td>
<td>Girl</td>
<td>105</td>
<td>4.00</td>
<td>.42</td>
<td>2.52</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Boy</td>
<td>86</td>
<td>3.83</td>
<td>.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affiliative Humour</td>
<td>Girl</td>
<td>105</td>
<td>3.97</td>
<td>.67</td>
<td>-1.53</td>
<td>.13</td>
</tr>
<tr>
<td></td>
<td>Boy</td>
<td>86</td>
<td>4.11</td>
<td>.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Enhancing Humour</td>
<td>Girl</td>
<td>105</td>
<td>3.11</td>
<td>.68</td>
<td>-1.05</td>
<td>.29</td>
</tr>
<tr>
<td></td>
<td>Boy</td>
<td>86</td>
<td>3.22</td>
<td>.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggressive Humour</td>
<td>Girl</td>
<td>105</td>
<td>2.35</td>
<td>.63</td>
<td>-4.74</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Boy</td>
<td>86</td>
<td>2.76</td>
<td>.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Defeating Humour</td>
<td>Girl</td>
<td>105</td>
<td>2.06</td>
<td>.59</td>
<td>-1.83</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td>Boy</td>
<td>86</td>
<td>2.23</td>
<td>.69</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As shown in Table 6, boys reported significantly greater use of Aggressive Humour, whereas girls reported significantly higher levels of Cognitive and Affective Empathy. There was also a marginally significant Sex difference in reported use of Self-Defeating Humour, in favor of boys.

**Question #3**

What is the nature of the relationship between the four styles of humour and the two types of empathy? It is hypothesized that there is a negative correlation between Empathy and use of Aggressive and Self-Defeating Humour styles, and a positive correlation between Empathy and Affiliative Humour and Self-Enhancing Humour styles.

Overall bivariate correlation of the entire sample reveals several relationships among the subscales. Positive correlations were found between: a) Affiliative Humour and Cognitive Empathy \(r (189) = .192, p = .004\), b) Self-Enhancing Humour and Cognitive Empathy \(r (189) = .277, p = .000\). Negative correlations were found between: a) Aggressive Humour and Cognitive Empathy \(r (189) = -.196, p = .003\) and b) Aggressive Humour and Affective Empathy \(r (189) = -.292, p = .000\), c) Cognitive Empathy and Self- Defeating Humour \(r (189) = -.176, p = .008\).

**Controlling for School Effects.** Given the observed differences between school samples in mean reports of empathy and humour, a partial correlation was conducted to examine relations between empathy and humour when school effects were removed. As presented in Table 7, three correlations were found to be slightly stronger than the correlations of the total sample. Two correlations are negative
correlations between the Aggressive Humour and both Cognitive Empathy ($r (189) = -.216, p = .001$) and Affective Empathy ($r (189) = -.332, p = .000$). In addition, a negative correlation was found between Cognitive Empathy and Self-Defeating Humour ($r (189) = -.186, p = .005$). These correlations were also found in the analysis without removing school effects.

Table 7

*Bivariate correlation among the humour and empathy subscales, and partial correlations among humour and empathy subscales controlling for Sex, School, and Age effects (N = 191)*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliative Humour</td>
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<td></td>
<td>.007</td>
<td>.110</td>
<td>.449***</td>
<td>.028</td>
</tr>
<tr>
<td>Self-Defeating Humour</td>
<td>.011</td>
<td></td>
<td>.026</td>
<td>.137*</td>
<td>.453***</td>
<td>.061</td>
</tr>
<tr>
<td>Aggressive Humour</td>
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<td>.006</td>
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<td>.126*</td>
<td>.023</td>
<td>-.186**</td>
</tr>
<tr>
<td></td>
<td>.140*</td>
<td>.018</td>
<td>.007</td>
<td>-.332***</td>
<td>-.216**</td>
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<td>Self-Enhancing Humour</td>
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<td>.120*</td>
<td>.020</td>
<td>.090</td>
<td>.270***</td>
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<td>.111</td>
<td>-.005</td>
<td>.101</td>
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<td>Affective Empathy</td>
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<td>.038</td>
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<td>.094</td>
<td>-.196**</td>
<td>.143*</td>
<td>.367***</td>
<td></td>
</tr>
<tr>
<td>Cognitive Empathy</td>
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<td>-.176**</td>
<td>-.196**</td>
<td>.277***</td>
<td>.371***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.217**</td>
<td>-.156*</td>
<td>-.148*</td>
<td>.296***</td>
<td>.333***</td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05 (1-tailed)
**p<0.01 (1-tailed)
***p<0.001 (1-tailed)

Bolded top line below the diagonal is bivariate correlation for total sample
Lower line below diagonal is partial correlation controlling for sex effects
Bolded top line above the diagonal is partial correlation controlling for school effects
Lower line above the diagonal is partial correlation controlling for age effects
Controlling for Age Effects. Because the total sample is composed of children in different age groups, a partial correlation with controlling for age effects was computed. Results show that no significant variations in the correlations with and without age effects were found as seen in results presented in Table 7.

Controlling for Sex Effects. Partial correlations, controlling for Sex, revealed three correlations that are different than those that were found in the total sample without controlling for any variables. When Sex effect was controlled in a partial correlation, Cognitive Empathy was less strongly related to both Self Defeating and Aggressive Humour. However, Affective Empathy was more strongly related to Affiliative Humour and Self Enhancing Humour (see results in Table 7).

In order to further investigate the gender differences across the correlations among the subscales, bivariate correlations between empathy and use of humour were computed separately for boys and girls. As shown in Table 8, there are five differences between boys and girls in the significant correlations among humour and empathy. First, Cognitive Empathy and Self-Defeating Humour for girls was not significant, \( r (103) = -.060, p = .272 \) However, for boys this correlation was significant \( r (84) = -.236, p = .015 \). Second, the negative correlation between Cognitive Empathy and Aggressive Humour for boys was significant \( r (84) = -231, p = .016 \) but not for girls \( r = -.082, p=.202 \). Third, Affective Empathy was positively correlated with Affiliative Humour for girls \( r (103) = .239, p = .007 \) but not significantly for boys \( r (84) = -.033, p = .383 \). Fourth, Affective Empathy was
negatively correlated with Aggressive Humour for boys ($r (84) = -.310, p = .002$), however, Affective Empathy was not significantly correlated with Aggressive Humour for girls ($r (103) = -.117, p = .117$). Fifth, Affective Empathy was correlated with Self-Enhancing Humour for girls ($r (103) = .226, p = .010$) but not for boys ($r (84) = .047, p = .333$).

Table 8

*Bivariate correlation between the humour subscales and empathy subscales* separately for boys (n= 86) and girls (n=105)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliative</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Humour</td>
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<td>.239**</td>
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<td>.121</td>
<td>.146</td>
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<td>Humour</td>
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<td>-.076</td>
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<td>.101</td>
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<td>Humour</td>
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<tr>
<td>Self-Enhancing</td>
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<td>-.231*</td>
<td>.214*</td>
<td>.454***</td>
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<td>Affective</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Empathy</td>
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*p<0.05 (1-tailed)

**p<0.01 (1-tailed)

***p<.001 (1-tailed)

Below the diagonal is bivariate correlation for boys
Above the diagonal is bivariate correlation for girls
Question # 4

Do Cognitive and/or Affective Empathy explain the use of each of the four Humour Styles above and beyond gender?

For each of the four Humour Style variables, regression analyses were conducted, predicting reported use of humour from both Cognitive and Affective Empathy. Follow-up regression analyses were then conducted in an effort to control for the effects of sex, school and age, by entering each variable separate into the regression analysis. For each humour variable, several regressions were conducted to explore the unique contribution of each Cognitive and Affective Empathy variable above and beyond gender effects.

Affiliative Humour. Regression analysis revealed that when both Cognitive and Affective Empathy, when entered into the first block of the regression together, appeared to be significant explanatory variables, $F(2,188) = 3.610, p = .029$, accounting for 3.7% of the variance in Affiliative Humour. However, only Cognitive Empathy ($\beta = .193, p = .013$) was found to be a significant predictor, one of moderate magnitude. Affective Empathy ($\beta = -.001, p = .986$) had no significant effect on Affiliative Humour.

Next investigated was the question of whether Cognitive Empathy explains variance in Affiliative Humour if controlling for school differences. Based on Independent sample $t$ Tests grouping by school that showed significant school differences ($p < .05$) in Affiliative Humour, the effect of School was entered in the first block, Affective Empathy in the second block, and Cognitive Empathy was entered in the third block of the regression to find out its unique contribution to Affiliative Humour. Results showed that school context accounted for 5% of the
variance in Affiliative Humour, $F(1, 189) = 10.029, p = .002$. More specifically, the observed $\beta = .224$ for the school effect, $p = .002$, is of high to moderate magnitude. Affective Empathy that was entered in the second block was found again to have no effect on Affiliative Humour. Cognitive Empathy accounted for 2.9% of the variance in Affiliative Humour $F(1, 187) = 5.173, p = .015$, and $\beta = .185$, which was of high moderate magnitude. A second regression analysis, in which Affective Empathy was entered last in the regression, in the same order as above, was conducted to examine its unique contribution, confirmed again that Affective Empathy ($\beta = -.040, p = .603$) had no significant effect on Affiliative Humour.

In the final analysis, School was entered in the first block $F(1, 189) = 10.029, p = .002, \beta = .224$, Sex in the second block $F(1, 188) = 3.690, p = .56, \beta = .136$, and Cognitive Empathy in the third block $F(1, 187) = 8.017, p = .005, \beta = .200$. Based on $R^2_{\text{Change}}$ values in this regression analysis, it can be concluded that School effects accounted for about 5% of the variance in use of Affiliative Humour, Sex of student accounted for an additional 1.8% of the variance, and Cognitive Empathy accounted for another 3.8% of the variance explained in Affiliative Humour above and beyond the effects of School and Sex.

*Self-Enhancing Humour.* A regression analysis in which Cognitive and Affective Empathy were entered in the same first block ($R^2 = .077$) revealed that Cognitive and Affective Empathy explained 7.7% of the variance in Self-Enhancing Humour, $F(2, 188) = 7.789, p = .001$. However, a closer look at each of the explanatory variables revealed that only Cognitive Empathy ($\beta = .276, p = .000$) was a significant explanatory variable, as Affective Empathy ($\beta = .002, p = .977$) was found to be not significant.
The next question addressed was whether Cognitive and Affective Empathy explained Self-Enhancing Humour when School and Sex effects were controlled. To this end, a regression analysis was conducted in which sex was entered in the first block, $R^2 = .006$, ($F(1, 189) = 1.107$, $p = .294$, $\beta = .076$), School was entered in the second block, $R^2 = .014$ ($F(1, 188) = 1.622$, $p = .204$, $\beta = .093$), Affective Empathy was entered in the third block, $R^2 = .031$ ($F(1, 187) = 3.200$, $p = .075$, $\beta = .141$), and Cognitive Empathy was entered in the fourth block $R^2 = .099$ ($F(1, 186) = 14.011$, $p = .000$, $\beta = .281$). Results of the analysis revealed that Sex, School, and Affective Empathy were not significant explanatory variables. Therefore, it can be concluded that the unique contribution of Cognitive Empathy to the explained variance in Self-Enhancing Humour above and beyond Sex, School, and Affective Empathy effects was about 6.8%. Affective Empathy did not account for any significant amount of the variance in Self-Enhancing Humour.

Aggressive Humour. A regression analysis was conducted in which Cognitive and Affective Empathy were entered in the same first block ($R^2 = .094$) revealed that Cognitive and Affective Empathy explain 9.4% of the variance in Aggressive Humour, $F(2, 188) = 9.77$, $p = .000$. However, a closer look at each of the explanatory variables revealed that only Affective Empathy ($\beta = -.254$, $p = .001$) was a significant explanatory variable whereas Cognitive Empathy was ($\beta = .102$, $p = .175$) found to be not significant.

The next question to be asked was whether Cognitive and Affective Empathy explained Aggressive Humour when School and Sex effects were controlled. Accordingly, in the next regression analysis, School was entered in the first block $R^2 = .024$, ($F(1, 189) = 4.57$, $p = .034$, $\beta = .154$), Sex was entered in the
second block $R^2 = .142$, ($F(1,188) = 25.92, p = .000, \beta = .346$), Cognitive Empathy was entered in the third block $R^2 = .167$, ($F(1,187) = 5.52, p = .020, \beta = -.160$), and finally Affective Empathy was entered in the last block to reveal its unique contribution above and beyond the other former explanatory variables $R^2 = .199$, ($F(1,186) = 7.447, p = .007, \beta = -.207$). Results indicated that School accounted for 2% of the variance in Aggressive Humour, Sex accounted for 12%, Cognitive Empathy accounted for 3% above and beyond School and Sex effects, and finally Affective Empathy accounted for 3% of the variance in Aggressive Humour above and beyond School, Sex, and Cognitive Empathy effects.

In order to find out the unique contribution of Cognitive Empathy above and beyond School, Sex, and also Affective Empathy, the same first two blocks as in the previous regression were repeated, and the last two blocks were changed. Affective Empathy was entered in the third block $R^2 = .190$, ($F(1,187) = 11.211, p = .001, \beta = -.240$), accounted now for 5% of the variance in Aggressive Humour. Whereas, Cognitive Empathy, when entered last $R^2 = .199$, ($F(1,186) = 1.896, p = .170$), was not found to be a significant explanatory variable above and beyond Sex, School, and Affective Empathy effects.

Self-Defeating Humour. A regression analysis was conducted in which Cognitive and Affective Empathy were entered in the first block ($R^2 = .043$), together accounting for 4% of the variance in Self-Defeating Humour $F(2,188) = 4.251, p = .016$. However, a closer look at each of the explanatory variables revealed that only Cognitive Empathy ($\beta = -.220, p = .005$) was a significant explanatory variable. Affective Empathy ($\beta = .102, p = .120$) was not found to be significant.
The next question explored was whether Cognitive and Affective Empathy explained Self-Defeating Humour when School and Sex effects were controlled. For this analysis, Sex was entered in the first block, $R^2 = .018$, $(F(1,189) = 3.375, p = .068, \beta = .132)$, School in the second block, $R^2 = .027$, $(F(1,188) = 1.766, p = .185, \beta = .096)$, Affective Empathy in the third block $R^2 = .033$, $(F(1,187) = 1.190, p = .277, \beta = .086)$, and Cognitive Empathy was entered in the forth block $R^2 = .073$, $(F(1,186) = 7.986, p = .005, \beta = -.215)$, Results showed that the unique contribution of Cognitive Empathy above and beyond Sex, School, and Affective Empathy was 4%. However, Affective Empathy was not a significant predictor. When the last two blocks were reversed, namely, Cognitive Empathy was entered in the third block $R^2 = .053$, $(F(1,187) = 5.270, p = .023, \beta = -.167)$, and Affective Empathy was entered in the forth block $R^2 = .073$, $(F(1,186) = 3.869, p = .51, \beta = .160)$, the unique contribution of Affective Empathy above and beyond Sex, School, and Cognitive Empathy effects was found to be 2% of the variance explained in Self-Defeating Humour.
Discussion

The current study sought to investigate primarily what role empathy plays in children's use of humour. For that purpose, students in grades 4 to 7 in two elementary schools completed self-report measures of empathy and humour. Results of the current study demonstrated that there are significant relationships between empathy and humour depending on the type of empathy (i.e., Cognitive or Affective) and on the style of humour (i.e., Affiliative, Self-Enhancing, Aggressive, Self-Defeating) as well as on gender. Prior to investigating children's use of humour, it was necessary to validate the adult humour measure for use with children. Current findings provide preliminary validation for children's use of four humour styles originally validated with adults (Martin et al., 2003).

The first research question explored in this study was: Does the Humour Style Questionnaire (HSQ) measure the four humour styles when used with elementary school children? Results of exploratory factor analysis supported the distinctiveness of the four humour styles. However, not all the original 32 items loaded significantly on the four humour styles. Two items cross loaded and therefore were excluded from the final subscale. Additional four items were not included in the final subscales because they did not load significantly on any of the four factors. Three of the humour style subscales (i.e., Affiliative, Self-Enhancing, Self-Defeating) demonstrated adequate internal consistency and included a reasonable number of items. However, the Aggressive Humour subscale was found to have only modest internal consistency (although adequate for research purposes) and included only five items. Accordingly, results obtained regarding Aggressive Humour must be viewed with caution.
The Affiliative Humour subscale's alpha was .84 in the present sample, consistent with the alpha of the original Affiliative Humour subscale with an older sample (.80). One item was removed from the current Affiliative Humour subscale due to lower than .40 loading. In the original subscale that item loaded .52, also relatively lower than other items. The wording of this item was not changed ("I rarely make other people laugh by telling funny stories about myself") in the current subscale. Affiliative Humour subscale was significantly correlated in the original scale with Self-Enhancing Humour and with Aggressive Humour. The same pattern of correlation was found in the current sample with children.

The internal consistency observed in the present sample for the Self-Enhancing Humour subscale was also quite respectable, with an alpha of .77, relatively comparable to the alpha of the original Self-Enhancing subscale's alpha that was .81. Two items from the original subscale were removed from the current subscale. One item cross loaded with Affiliative Humour, “Even when I'm by myself, I'm amused by the silly things in life.” The other item did not load significantly on any subscale “If I am feeling sad or upset, I usually lose my sense of humour”. In the original scale, Self-Enhancing Humour was correlated with Affiliative, Aggressive and Self-Defeating Humour. However, in the current sample of elementary school children, Self-Enhancing Humour was correlated with Affiliative Humour and with Self-Defeating Humour but not correlated with Aggressive Humour. This would make one speculate that children in the current sample who reported use of Self Enhancing Humour were less likely to report also use of Aggressive Humour, or perhaps, children’s report were guided by assumed adult expectation of them to distinguish between aggressive use of humour.
towards other and humour that enhance the self. When a partial correlation controlling for Sex was computed, a significant correlation was found only between Self-Enhancing Humour and Affiliative Humour. Additional information from bivariate correlation separately for boys and girls confirms that for both boys and girls Self Enhancing Humour was significantly correlated only with Affiliative Humour as would be expected between the two positive humour styles.

In the present sample, the Aggressive Humour subscale’s alpha was .52, whereas the alpha of the original subscale designed by Martin et al. (2003) was .77. In addition, the original Aggressive Humour subscale included eight items, whereas the Aggressive Humour subscale in the current children sample included only five items. The cross loading item that was removed was “I use humour or jokes to put down the people I don’t like”, adapted from its original version: “if I don’t like someone, I often use humour or teasing to put them down”. Two items that loaded lower than .40 were the following: “People are never hurt or offended by my humour or jokes” and, “When I think of something that is so funny, I can’t stop myself from saying it, even if it is not appropriate for the situation”.

Nevertheless, as in the analysis of the original measure by Martin et al. (2003), the current Aggressive Humour subscale was found to be significantly higher in boys than in girls. Also, use of Aggressive Humour was significantly correlated with Affiliative Humour for the whole sample, but when examined in each sex separately, this correlation was not significant for boys and marginally significant for girls. Therefore, unlike the original measure, Aggressive Humour was not correlated with Self-Defeating Humour. It is possible that the three items that were removed from the current Aggressive Humour subscale changed the overall
meaning of the scale and with it, the relationship between use of Aggressive Humour and Self-Defeating Humour. It is also possible to speculate that children’s self-reports were guided by what they believed was expected of them, in particular in regard to the least desirable aspect of humour, Aggressive Humour.

The internal consistency observed for the Self-Defeating Humour subscale was .77 in the present sample, compared with .80 in the original (adult) sample. All items of the original subscale were retained in the adapted version. Self-Defeating Humour was significantly correlated with Aggressive Humour in the original sample of adults, but not in the present sample. Instead, use of Self-Defeating Humour was significantly related to Self-Enhancing Humour in the present sample. This correlation was not significant when examined separately for boys and girls. This difference between adults and children might be because children do not distinguish, as adults do, between humour that promotes the self and that that disparages the self.

To summarize, in attempting to answer the first question in this study, it is reasonable to conclude that the Humour Style Questionnaire (HSQ) was found to be sufficient for use in the current analysis with this specific sample. However, it is important to note that there is no sufficient evidence supporting the generalization of the 26 item measure extracted based on this sample, to other samples. Similar to the original sample of adults, the humour style questionnaire measure adapted for children in the present study yielded the same the four humour styles subscales. Moreover, the psychometric quality of four derived subscales was considered quite adequate, although the internal consistency observed for the Aggressive Humour subscale was somewhat lower.
Future research is clearly needed to replicate these findings, with particular attention to the Aggressive Humour subscale. However, for the purpose of this study, after validating the use of humour measure with the current sample of children, the next question explored was gender differences within each one of the four humour styles and the two types of empathy.

Results of the present study indicate significant sex differences in both Cognitive and Affective Empathy, in favour of girls, consistent with previous research (e.g., Davis, 1983). Future research is needed to determine the degree to which these reported levels of empathy, derived from a self-report questionnaire provided an accurate reflection of real differences between boys and girls. Although such gender differences may well be attributed to variations in socialization practices for boys versus girls, they may also be attributed to social desirability, meaning, stereotypically, girls are expected to report high empathy.

In regards to the humour subscales, the only significant gender difference was found in Aggressive Humour, in which boys obtained significantly higher mean scores than did girls. A marginally significant difference, higher for boys, was also found for Self-Defeating Humour. In the original HSQ, gender differences were found in all four humour subscales. However, it was indicated by Martin et al. (2003), that the differences for Affiliative and Self-Enhancing Humour were very small and found to be significant only because of the large sample size. Given the explanation that the sex differences in Affiliative and Self-Enhancing Humour were perhaps attributed to large sample size, it can be concluded that the current sample followed similar pattern of gender differences as in the original HSQ.
Following is an examination of the nature of the relationship between humour and empathy. Several correlations were computed in order to answer this question.

When considering the entire sample, results indicated that higher levels of empathy were associated with more positive and less negative use of humour. Specifically, greater Cognitive Empathy was associated with greater use of Self-Enhancing Humour and Affiliative Humour, and less use of Aggressive Humour and Self-Defeating Humour. The more students were likely to use Aggressive Humour the more likely that their reported empathy (both affective and cognitive) would be low. These findings confirm the hypothesis of this study that high levels of empathy is related to positive uses of humour.

When controlling for sex, two additional correlations relating to Affective Empathy were found: (a) between Affective Empathy and Affiliative Humour, (b) between Affective Empathy and Self-Enhancing. Thus, the observed association between empathy and greater use of positive humour and lesser use of negative humour was generally not consistent across boys and girls being significant for girls and not significant for boys. Only girls’ reports of Affective Empathy were associated with Affiliative Humour and Self—Enhancing Humour.

Separate correlations for boys and girls yielded sex differences in the correlations: (a) Cognitive Empathy and Self-Defeating Humour were negatively correlated for boys but not for girls, (b) Cognitive Empathy and Aggressive Humour were negatively correlated for boys but not for girls, (c) Affective Empathy and Affiliative Humour were positively correlated for girls but not for boys, (d) Affective Empathy was negatively correlated with Aggressive Humour for boys but not for girls, (e) Affective Empathy was positively correlated with Self-
Enhancing Humour for girls but not for boys. In other words, correlational analyses showed that the links between empathy and humour varied across types of humour and across boys and girls. Boys reporting higher levels of Cognitive Empathy were more likely to use humour in positive ways (Affiliative and Self-Enhancing Humour) and less likely to use humour to taunt others (Aggressive Humour) or to self-deprecate (Self-Defeating Humour). Boys who reported greater Affective Empathy were also less likely to use humour aggressively. For girls, greater Affective Empathy was associated with less Aggressive Humour and more Affiliative and Self-Enhancing Humour. Affiliative and Self-Enhancing Humour were also more likely for girls reporting greater Cognitive Empathy.

Generally, results of partial correlations were indicative of robust findings. However, there is a need for further research to fully understand children use of humour in relation to their level of empathy. These correlations were maintained even after controlling for school differences. However, the correlations between Aggressive Humour and both Cognitive and Affective Empathy were found to be stronger. Similarly, Cognitive Empathy and Self-Defeating Humour were also found to have a stronger negative correlation.

To further explore the unique contribution of each of Cognitive and Affective Empathy on the variance explained in used of humour, several regression analyses were conducted. Significant differences between boys and girls in Affective and Cognitive Empathy were found in previous studies (Davis, 1983; Jolliffe & Farrington, 2006), as in the present study. However, in regard to the humour subscales, Martin et al. (2003) reported significant gender differences in
all four humour styles, while this study found significant gender differences only in Aggressive Humour and marginally in Self-Defeating Humour.

Results of a series of regression analyses revealed variations in the pattern of associations observed as a function of gender and type of humour considered that qualify the zero-order and partial correlations observed. With regard to use of Affiliative Humour, Cognitive Empathy accounted for about 4% of the variance in Affiliative Humour above and beyond the effects of School and Sex (5% and 2%, respectively). Affective Empathy was found to have no significant effect on Affiliative Humour. However, variations across schools were large, suggesting that the culture of the school or the school climate influences children use of Affiliative Humour. When comparing the contribution of Cognitive and Affective Empathy to the explained variance in Affiliative Humour, it is evident that for those who reported high levels of Affiliative Humour also reported high levels of Cognitive Empathy. However, Affective Empathy had no relation to use of Affiliative humour. Although for girls, Affective Empathy was associated with Affiliative humour, at the level of zero-order correlations.

Self-Enhancing Humour. Cognitive Empathy accounted for about 8% of the variance in Self-Enhancing Humour above and beyond the (non significant) effect of School and Sex. However, Cognitive Empathy accounted for 7% above and beyond Affective Empathy that was found to be accounted for 2% (marginally significant) of the variance in Self-Enhancing Humour above and beyond Sex and School effects. Results suggest that children’s tendency to adopt a humoristic view of the world or use humour to cheer oneself, was also to some degree related to and explained by their level of Cognitive Empathy.
**Aggressive Humour.** Affective Empathy accounted for about 5% of the variance in Aggressive Humour above and beyond School and Sex effects that were found to be significant, accounting for 2% and 12% of the variance, respectively. Cognitive Empathy accounted for 3% of variance in Aggressive Humour above and beyond Sex and School effects. When Cognitive Empathy was entered into the regression prior to Affective Empathy in order to obtain the unique contribution of Affective Empathy, Affective Empathy accounted for about 3% above and beyond Sex, School, and Cognitive Empathy effects. However, when Affective Empathy was entered first to obtain the unique contribution of Cognitive Empathy, Cognitive Empathy did not account for any significant variance in Aggressive Humour above and beyond Affective Empathy. The regression analyses provide additional information supporting the correlation results, that Affective Empathy is a better predictor than Cognitive Empathy for use of Aggressive Humour. In accordance, Affective Empathy has been shown to play an important function in the inhibition of aggressive behaviour towards others within normal population (Eisenberg, 2005). Eisenberg reported that students who can experience vicariously the negative feelings of others are more likely to inhibit their aggressive behaviour or more specifically aggressive use of humour. Correlational results also suggest that those who reported low levels of Affective Empathy also reported high levels of use of Aggressive Humour. This tendency to use aggressive behaviour when Affective Empathy is low was also found in children with behaviour disorders (Smith, 2006).

**Self-Defeating Humour.** Cognitive Empathy was found to account for 3% of the variance in use of Self-Defeating Humour after controlling for Age and Sex
effects, and accounted for 4% of the variance in Self-Defeating Humour above and beyond Sex, School, and Affective Empathy. Affective Empathy did not contribute significantly to use of Self-Defeating Humour in either analysis. These results confirm that Cognitive Empathy provided unique contributions to explaining reported use of Self—Defeating Humour.

In summary, Cognitive Empathy was found to have higher unique contribution than Affective Empathy (above and beyond Sex, School, and Affective Empathy effects) to the variance in Affiliative Humour, Self Enhancing Humour, and Self Defeating Humour. In contrast, Affective Empathy was found to have higher contribution than Cognitive Empathy (above and beyond Sex, School, and Cognitive Empathy effects) to the variance in Aggressive Humour. It appears that further research might be beneficial to validate these preliminary findings that Cognitive Empathy would be essential for educating children to better use of the two positive uses of humour and Self Defeating Humour, while a focus on Affective Empathy would be essential in preventative interventions against aggressive use of humour among children.

Limitations of study and Future Recommendations

Despite the important contributions the current study has made as a ground-breaking link between humour and empathy, there are a number of cautions to be exercised when interpreting the data from this research.

Given that the data in the current study was derived from self-reports, it may have been subject to socially desirable responding. Although this problem is difficult to overcome, particularly in that empathy by nature is an internalized experience. Future research attempting to further explore the link between
humour and empathy would benefit from using two self-report measures of empathy to compare results. In addition, future research should consider employing a wide variety of measures for empathy and humour from a number of different informants, such as teacher report on students; students’ direct responses to a relevant vignette or movie; etc. Comparing results from several measures would be a potential solution to the risk of participants responding according to how they would like to appear.

Another limitation of this study is that out of 268 eligible students only 71% actually took part. Such a participation rate was sufficient for the analysis required for this current study. However, given the topic is based on social interactions that might be conditioned to school culture or norms of behaviour within a school community, (74% participation in school 1 and 68% participation in school 2), a total participation rate of 71%, unfortunately, provides information only about that portion of the school population. The fact that the sample in the current study was combined of populations from two schools that were found to be different on Affiliative Humour and Affective Empathy, limits the generalizability of conclusions made to other samples.

Limited sample size impacted the analyses performed in that some analyses must be interpreted with caution and may have failed to find significant results where they do exist. Future research should validate the humour measure with a sample size that would enable separate analysis for boys and girls and for different age groups.

Results of this study are based on exploratory factor analysis of the humour measure. Although it was found appropriate to use the humour measure in the
current sample, results of the factor analysis cannot be generalized to other populations. Future research attempting to validate the humour measure to children population can re-examine the items that were excluded from this sample, by attending to the particulars of sentence structure and clarity of ideas.

Finally, the association of negative uses of humour with low levels of empathy and positive use of humour with high levels of empathy presented in this study underscores the importance of enhancing empathy within children in order to support their positive use of humour and inhibit their negative uses of humour. As mentioned above, more research is needed to identify the different patterns between boys and girls to inform more gender specific approaches to the teaching of empathy.
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April, 2007

Dear Parent(s) or Guardian(s): I am a graduate student at School Psychology at the University of British Colombia (UBC). For my Master theses, under the supervision of Dr. Shelley Hymel, I am conducting a research project at Bowen Island Community School. We are writing to ask permission for your son/daughter to take part in this research project. The following is information about your study to help you make your decision.

**Purpose of the Study:** To better understand how students in 4th to 7th grade communicate with each other, feel about their school, their classmates, how much they feel empathy for others and how often they try to behave in socially responsible (rather than aggressive) ways.

**Your Child's Involvement:** Students in grades 4-7, will be asked to complete a survey. Researchers will read the questions aloud and students will circle the answer that best describes them. This will take place during regular school hours, at a time chosen by the teacher. Students will complete the survey in their classroom in one session of 40 min total.

**Participation is Voluntary:** Only students who receive permission from their parents will participate. Students must also agree to participate and will be told that they may withdraw from the study at any time. Participation or withdrawal from the study will not affect students’ marks, work or class standing in any way. Students not wishing to participate will complete regular schoolwork during survey administration.

**Confidentiality:** All survey responses will be kept strictly confidential, and will not be shown to parents or to school staff. We are only interested in group results, and will not report results on individual students. No names will appear on the surveys; your child will be assigned a code number. Surveys will be kept in a secure location in the researchers’ office and only the researchers will have access to this information.

**Returning the Consent Form:** After reading this letter, please talk about the project with your son/daughter and then indicate your choice on the attached consent form (page 2). Please send the consent form back to your son/daughter’s school whether or not he/she chooses to participate.

**More Information:** Information about this project is included on the consent form, and a second copy is provided for your records. If you have any questions about the project, feel free to contact Dr. Shelley Hymel at (604) 822-6022. If you have any concerns about your child’s treatment or rights as a research participant, please contact the Research Subject Information Line at the University of British Columbia, Office Research Services, at (604) 822-8598. Thank you for your cooperation in this research project.

Sincerely,

Shelley Hymel, Ph.D.      Hadas Av-Gay
Professor and Principal Investigator     Masters Student
Appendix B

Humour and Empathy in Children's Social Relationships

Parental Consent Form

Principal Investigators: Shelley Hymel, Ph.D., Professor, Faculty of Education, Department of ECPS School Psychology/Human Development Learning & Culture (604-822-6022)

Co-Investigator: Ms. Hadas Av-Gay, Masters Student, School Psychology (604-222-7840)

Please complete the section below the dotted line and send it back to your child's school within the next 5 days. Keep the top section for your own records. Thank you.

Consent:

Your and your son/daughter's participation in this study is entirely voluntary and he/she may refuse to participate or withdraw from the study at any time without negative consequences.

Your signature indicates that you have read the consent form, talked about it with your son/daughter, and consent to participate in this study. It also indicates that you have kept a copy of this form for your personal records.

Please circle one I give my consent for my son/daughter to participate  ○ Yes ○ No

Parent/Guardian's Name (please print): ____________________________________________

Parent/Guardian's Signature: ___________________________ Date: ______________________

Son/Daughter's Name (please print first & last name): __________________________________

☒ ………………………………………………………………………………………………………………………………………………☒

Consent:

Your and your son/daughter’s participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time without negative consequences. Your signature indicates that you have read the consent form, talked about it with your son/daughter, and that you have kept a copy of this form for your personal records.

Please circle one I give my consent for my son/daughter to participate  ○ Yes ○ No

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

Parent/Guardian’s Signature: ___________________________ Date: ______________________

Son/Daughter’s Name (please print first & last name): _________________________________

I would like to receive a copy of the research results.  ○ Yes ○ No

Please return this form to your son/daughter’s school within the next five days. Thank-you!
Dear Student,

As part of my requirements for graduate school, my professor and I are carrying out a research project at your school. We would like you to take part in our research project called “Social Relationships.” The goal of this project is to find out how students feel about their school, their classmates, use and misuse of humour, and how they perceive themselves and their friends.

Your parents have said that it is okay with them for you to work on this project, but you also have to decide if it’s okay for you. You can decide that you don’t want to be in the project. This project has nothing to do with your schoolwork, and you will not be punished if you decide not to take part or you change your mind part way through the project.

If you decide to take part, you will be asked to listen to us read some questions, and then check off or circle the answer that is true for you. Your part in the project will take about one whole class period (40 minutes). If you complete the survey, you are giving us your permission to participate. The answers you give will be private, and will not be shared with anyone. We will not show your answers to teachers, the principal, or your parents. This is not a test, so you should give your own opinion. We are just interested in seeing how most kids your age answer our questions.

We will be happy to answer any questions you have now, or you can call Hadas Av-Gay (604-724 0942) or Shelley Hymel at the University of British Columbia (604-822-6022) if you have questions later. If you have any concerns about your rights as a participant in this project, you can call the University of British Columbia’s Office of Research Services at (604) 822-8598.

If you want to take part in the research project, please print your name neatly on the line below. This will tell us that you understand what the project is about and that your questions have been answered.

Student’s Name: ___________________________________________ Date: ________, 2007
(Please print first and last name)

Signature: ____________________________________________
### Tell Us About Yourself

#### 1. Are you a boy or a girl? (CIRCLE ONE)
- **GIRL**
- **BOY**

#### 2. What grade are you in? (CIRCLE ONE)
- **4**
- **5**
- **6**
- **7**

#### 3. a) How old are you? (CIRCLE ONE)
- **8**
- **9**
- **10**
- **11**
- **12**
- **13**

    b) What is your date of birth?
    - (month)
    - (day)
    - (year you were born)

#### 4. Do you speak English at home? (CIRCLE ONE)
- **Yes**
- **No**

#### 5. If English is not the language you speak at home, tell us how easy is it for you to read and write in English?
- (CIRCLE ONE)
  - **Easy**
  - **OK**
  - **Hard**

#### 6. People sometimes identify themselves by the racial, ethnic or cultural group to which their parents, grandparents or ancestors belong. How do you identify yourself? (Choose more than one if it is true for you.)

- **a) Aboriginal/Native People (North American Indian, Metis, Inuit)**
- **b) African/Caribbean (Black)**
- **c) South Asian. If South Asian, choose one:**
  - **Indian**
  - **Indonesian**
  - **Pakistani**
  - **Other**
- **d) Asian. If Asian, choose one:**
  - **Chinese**
  - **Korean**
  - **Japanese**
  - ** Taiwanese**
  - **Other**
- **e) Caucasian (White)**
- **f) Latin American (Mexican, Spanish, Portuguese, South American)**
- **g) Middle Eastern. If Middle Eastern, choose one:**
  - **Arabic**
  - **Iranian**
  - **Kuwaiti**
  - **Persian**
  - **Other**
- **h) Other**
- **i) I don’t know**

#### 7. How long have you lived in Canada? (CIRCLE ONE)
- **1 year**
- **2 years**
- **3 years**
- **4 years**
- **5 years**
- **6 years**
- **more than 7 years**
- **I was born in Canada**
Laughing with Others

Humour is the way people try to be funny, joke around or get others to laugh. People can be funny or joke around in different ways and for different reasons. How do you use humour? For each sentence below, fill in the circle that tells how YOU use humour or joke around with others.

Read each sentence carefully. Answer honestly. Thank you.

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I usually laugh and joke around with other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>If I am feeling sad, I can cheer myself up with humour.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>If someone makes a mistake, I like to tease them about it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>I let people laugh at me or make fun at my expense more that I should.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>It is easy for me to make others laugh -- I seem to be a naturally humorous person.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>Even when I'm by myself, I'm amused by the silly things in life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>People are never hurt or offended by my humour or jokes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8.</td>
<td>I can get carried away in putting myself down if it makes others laugh.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9.</td>
<td>I rarely make others laugh by telling funny stories about myself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10.</td>
<td>If I am feeling upset or unhappy I try to think of something funny to make myself feel better.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11.</td>
<td>When telling jokes or saying funny things, I worry about how other people are taking it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12.</td>
<td>I try to make people like me by saying something funny about my own faults or weaknesses.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13.</td>
<td>I laugh and joke a lot with my friends.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14.</td>
<td>My sense of humour keeps me from getting too upset or sad about things.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15.</td>
<td>It bothers me when people use humour to criticize or put someone down.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I often say funny things to put myself down.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>I usually like to tell jokes or make people laugh.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18</td>
<td>If I'm by myself and I'm feeling unhappy, I try to think of something funny to cheer myself up.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19</td>
<td>When I think of something that is so funny, I can't stop myself from saying it, even if it is not appropriate for the situation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20</td>
<td>I go too far putting myself down when I am trying to be funny.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21</td>
<td>I enjoy making people laugh.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22</td>
<td>If I am feeling sad or upset, I lose my sense of humour.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23</td>
<td>I never laugh at others even if all my friends are doing it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24</td>
<td>When I am with friends at school, I seem to be the one that other people make fun of or joke about.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25</td>
<td>I joke around with my friends.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26</td>
<td>A good way to cope with problems is to think of something funny or amusing.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27</td>
<td>I use humour or jokes to put down the people I don't like.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28</td>
<td>If I am having problems or feeling unhappy, I hide it by joking around, so that even my closest friends don't know how I really feel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29</td>
<td>I have trouble thinking of funny things to say when I'm with other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30</td>
<td>I don't need to be with other people to feel amused -- I can find things to laugh about even when I'm by myself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31</td>
<td>Even if something is really funny to me, I will not laugh or joke about it if someone's feelings will be hurt.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32</td>
<td>Letting others laugh at me is my way of keeping my friends happy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Towards Others

The following sentences are about how people feel about others. Please choose one answer for each sentence to tell us how much the statement is true about YOU. Please answer honestly.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>NO Never True</th>
<th>no Hardly Ever True</th>
<th>maybe Sometimes True</th>
<th>yes True Most of the time</th>
<th>YES Always True</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>My friend's emotions affect me a lot.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>After being with a friend who is sad about something, I usually feel sad.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>I can understand my friend's happiness when they do well at something.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>I get frightened when I watch characters in a scary movie.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>I get hung up in other people's feelings easily.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>I find it hard to know when my friends are frightened.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>I become sad when I see other people crying.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>Other people's feelings don't bother me at all.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9.</td>
<td>When someone is feeling 'down' I can usually understand how they feel.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.</td>
<td>I can usually figure out when my friends are scared.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11.</td>
<td>I often become sad when watching sad things on TV or in films.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12.</td>
<td>I can often understand how people are feeling even before they tell me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13.</td>
<td>Seeing a person who is angry has no effect on my feelings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14.</td>
<td>I can usually figure out when people are cheerful.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15.</td>
<td>I tend to feel scared when I am with friends who are afraid.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16.</td>
<td>I can usually realize quickly when a friend is angry.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17.</td>
<td>I often get carried away in my friend's feelings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18.</td>
<td>My friend's unhappiness doesn't make me feel anything.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19.</td>
<td>I am not usually aware of my friend's feelings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20.</td>
<td>I have trouble figuring out when my friends are happy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix E

Thank You

If you are having problems with other students at school, please know that you do not have to face it alone; you can get help.

You can talk to your parents or other family members; they may have some ideas that you have not yet thought of.

You can talk to any adult that you trust at the school - a counsellor, a teacher or coach, a custodian, a youth worker, a bus driver, etc.

We want to help......contact us.

If you would like help with problems you are having with other students, you can also put your name and phone number here and someone at the school will contact you:

Name (first name, last name):

Phone number or e-mail address to contact you:

If you would like help from someone outside of the school, you could call one of the following help lines (*1-800 numbers can be called FREE from payphones, no money needed):

BC Crisis Centre (24 hours): 604-872-3311    BC Crisis Centre (toll free): *1-866-661-3311
Help Line for Children (24 hours): 604-310-1234    Kids Help Phone: *1-800-668-6868
Youth Against Violence:*1-800-680-4264

OR YOU CAN GET HELP ON-LINE FROM THE WEB:
CONTACT WWW.YOUTHINBC.COM

THANK YOU FOR COMPLETING THIS SURVEY......
Your feedback will help us to make this school safe for all students.
CERTIFICATE OF APPROVAL - MINIMAL RISK AMENDMENT

<table>
<thead>
<tr>
<th>PRINCIPAL INVESTIGATOR:</th>
<th>DEPARTMENT:</th>
<th>UBC BREB NUMBER:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelley Hymel</td>
<td>UBC/Education/Educational &amp; Counselling Psychology, and Special Education</td>
<td>H06-80922</td>
</tr>
</tbody>
</table>

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>UBC</td>
<td></td>
</tr>
<tr>
<td>Other locations where the research will be conducted:</td>
<td>Point Grey Site</td>
</tr>
</tbody>
</table>

CO-INVESTIGATOR(S):

Hadas Av-Gay

SPONSORING AGENCIES:

UBC Department of Education

PROJECT TITLE:

Humor and Empathy in Children's Social Relationships

Expiration Date - Approval of an amendment does not change the expiry date on the current UBC BREB approval of this study. An application for renewal is required on or before: November 23, 2007

AMENDMENT(S): |

N/A

AMENDMENT APPROVAL DATE:

April 27, 2007

The amendment(s) and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.

Approval is issued on behalf of the Behavioural Research Ethics Board and signed electronically by one of the following:

Dr. Peter Suedfeld, Chair
Dr. Jim Rupert, Associate Chair
Dr. Arminee Kazanjian, Associate Chair
Dr. M. Judith Lynam, Associate Chair
Dr. Laurie Ford, Associate Chair