ABSTRACT

Title of Document: HUMOR AND FRIENDSHIP QUALITY IN MIDDLE
                               CHILDHOOD

                               Maureen A. Wimsatt, Doctor of Philosophy, 2014

Directed by: Kenneth H. Rubin, Department of Human Development
                               and Quantitative Methodology

Both humor and friendship facilitate socio-emotional development in middle childhood, but scholars have not studied the relation between the two constructs. Specifically, researchers have not explored the relation between affiliative, aggressive and/or self-defeating spontaneous conversational humor and positive and negative friendship quality in middle childhood. Scholars theorize that affiliative spontaneous conversational humor contributes to positive friendship quality while aggressive and self-defeating spontaneous conversational humor contribute to negative friendship quality (Klein & Kuiper, 2006). Moreover, friends' social behaviors are often interdependent and "work together" to influence each child's perception of friendship (Bukowski, Motzoi, & Meyer, 2009); therefore, it is also expected that dyadic spontaneous conversational humor is associated with friendship quality in middle childhood and that dyad-level variables (i.e., behavioral similarity of dyad, duration of friendship) are related to the dyadic nature of children's spontaneous conversational humor production.

Participants were 250 fifth graders (125 dyads; *M* age = 10.33 years, *SD* = .54) from the Washington DC metropolitan area. Affiliative, aggressive, and self-defeating spontaneous conversational humor data were coded from videotaped discussion between mutually nominated, same-sex best friends. Positive and negative friendship quality data were collected via survey report. An Actor Partner Interdependence Model (APIM) was used to explore relations between

actor and partner spontaneous conversational humor and actor-rated friendship quality in middle childhood (Kenny, Kashy, & Cook, 2006). Finally, multiple regression analyses were used to test the direct effects of dyad-level variables on dyadic spontaneous conversational humor.

APIM analyses revealed significant positive relations between actor *affiliative* spontaneous conversational humor and actor-rated *absence of conflict and betrayal*; actor *self-defeating* spontaneous conversational humor and both actor-rated *intimate disclosure* and *total positive friendship quality*; and partner *self-defeating* spontaneous conversational humor and actor-rated *companionship*. Actor *affiliative* and actor *aggressive* spontaneous conversational humor production were negatively and positively associated with actor-rated *negative interactions*, respectively. Five *dyadic* actor-partner interactions were significantly related to positive and negative friendship quality. Multiple regression analyses indicated that *friendship duration* was negatively associated with dyadic aggressive spontaneous conversational humor, meaning that the longer best friends reported knowing each other, the less they used interrelated aggressive spontaneous conversational humor.

HUMOR AND FRIENDSHIP QUALITY IN MIDDLE CHILDHOOD

By

Maureen A. Wimsatt

Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2014

Dissertation Committee:
Professor Kenneth H. Rubin, Chair
Professor Melanie Killen
Professor Geetha Ramani
Professor Linda Rose-Krasnor
Professor Andrea Chronis-Tuscano, Dean's Representative

ACKNOWLEDGEMENTS

There are several people that I would like to thank for their advice, encouragement, and friendship during the year that I spent completing this dissertation.

First and foremost, I thank my advisor, Dr. Kenneth Rubin. When I came to the University of Maryland, there were two primary reasons why I was excited to work with Dr. Rubin. First, I wanted to learn how to use observational methodology to study children's social interactions. Second, I had a special interest in studying children's friendships and the relation between early friendship and socioemotional outcomes. During my tenure in his research lab and the development of this dissertation, Dr. Rubin has enthusiastically shared his expertise about these topics and methodologies. Additionally, Dr. Rubin has always emphasized the importance of "knowing our ancients," meaning that we understand the early origins of research about childhood peer relationships and friendships. In the same vein, Dr. Rubin has introduced me to several developmental researchers who have furthered my historical knowledge about this area of study. Because of Dr. Rubin's mentorship, I leave the University of Maryland a more advanced scholar. Thank you, Dr. Rubin.

I am grateful for the support of my dissertation advisory committee, Drs. Andrea Chronis-Tuscano, Melanie Killen, Geetha Ramani, and Linda Rose-Krasnor. Drs. Killen and Ramani provided constructive feedback about an early version of my literature review that helped improve the overall quality of my proposal and final dissertation study. During the dissertation proposal meeting, Drs. Chronis-Tuscano and Rose-Krasnor offered thoughtful advice about refining the conceptual framework for the dissertation and made important suggestions about standardizing data to account for children's verbal ability. I extend a special thank you to Dr. Rose-Krasnor who traveled from Brock University in Canada to the University

of Maryland for my dissertation defense.

I wish to acknowledge the graduate and undergraduate "Rubin Lab" members who have supported the conceptualization and completion of this dissertation. I thank Matthew Barstead, Kathryn Ellison, Sara Heverly-Fitt, and Jennifer Wang, my graduate student labmates and partners in (research) crime, for their ongoing feedback and enthusiasm about this project; never forget our 555! Two undergraduate students, Shayna Berkowitz and Shakeena King, were interested in my topic from the beginning and, as a result, spent many hours helping me test the humor coding scheme presented in this dissertation. Shayna and Shakeena, thank you both for your positive energy and attention to detail. I also appreciate the feedback about my dissertation proposal presentation that I received from undergraduate students Linda Billotti, Nighisti Dawit, Nima Farchadi, and Christina Sayre.

Next, I thank my family for supporting my pursuit of higher education. From the undergraduate years to the social work master degree years to the doctorate years— midwest to west coast to eastern seaboard— my parents, Thomas and Leslie Wimsatt; brother and soon-to-be sister-in-law, Gregory Wimsatt and Adriane Anklam; and other relatives, especially Paul, Julie, Amy, and Ryan Witkowski and Bob Wimsatt, have encouraged my studies while simultaneously cheering on my non-academic interests, hobbies, and goals. From my family, I have learned that hard work is a given, that dedication and determination are actually inextricable aspects of adventure. I am grateful to have this perspective because it lets me summarize graduate school as follows: It has been a wonderful journey.

Many friends have brought me joy this year. From Maryland, I acknowledge the support of Tyson Barker, Aimée Duncan, Denis Dumas, Laura Elenbaas, Elizabeth Karberg, Sara Heverly-Fitt, and Jenessa Malin; our cohort nights and united front during Research Methods

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

I. Definitions, Developmental Context, and Statement of the Problem

Childhood humor can be defined as "the quality of action, speech, or writing which excites amusement; oddity, jocularity, facetiousness, comicality, fun" (Simpson & Weiner, 1989, p. 486). There are three types of childhood humor: Jokes, unintentional humor, and spontaneous conversational humor. *Jokes* are rehearsed or formulaic short stories aimed at amusing others (Martin & Kuiper, 1999). *Unintentional humor* occurs when a child accidentally evokes laughter or mirth in others, normally resulting from minor mishaps or small non-distressful embarrassments (Martin, 2007). *Spontaneous conversational humor*, the most frequently occurring type of humor, is unplanned yet deliberate, with one child unexpectedly seeking to amuse another person(s) (Klein & Kuiper, 2006). *Affiliative*, *aggressive,* and *self-defeating humor* are sub-types of children's spontaneous conversational humor (Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003). The goal of affiliative humor is to strengthen relationships and reduce interpersonal tensions through the amusement of others, while the goal of aggressive humor is to enhance the self through ridicule of others (e.g., hostile teasing, mockery). Self-defeating humor is aimed at gaining attention and social approval via negative statements about the self (Klein & Kuiper, 2006).

Developmental researchers characterize childhood humor as a form of intellectual play (Bariaud, 1989; Cunningham, 2005; McGhee, 1989). In particular, children use humor to playfully manipulate objects; incongruous sounds; and literal and humorous meanings of words. Much like when engaging in other forms of play (e.g., fantasy), children use humor to initiate social interactions and test beliefs about the world (Cunningham, 2005; McGhee, 1989; Pellegrini & Smith, 1998). As children develop cognitively, they become more adept at

processing and perceiving complex environmental stimuli as unexpected, amusing, or funny, and they use humor to create playful interpretations of their surroundings (Koestler, 1964; Lazarus, 1991; Martin, 2007; Roeckelein, 2002; Szabo, 2003). In the context of close relationships, typically developing children use humor to ease tensions in unfamiliar or uncomfortable situations and to strengthen social bonds, relying on knowledge about another person to anticipate when humor will be received with amusement and responded to with laughter (Cunningham, 2004; Owren & Bachorowski, 2003). Children first use humor in playful interactions with caregivers and then, by early and middle childhood, in social exchanges with teachers, peers, and friends (Martin, 2007).

Humor theorists argue that childhood humor facilitates cognitive and socio-emotional development (Bariaud, 1989; Cunningham, 2004; Semrud-Clikeman & Glass, 2010). Empirical studies have shown that humorous children engage in more frequent creative thinking and have better verbal abilities than children who do not initiate humor (McGhee, 1989; Semrud-Clikeman & Glass, 2010). Childhood humor is also associated with emotion regulation because children often use humor to cope with stressful situations and express frustration in a more socially accepted playful manner (Klein & Kuiper, 2006; Semrud-Clikeman & Glass, 2010). Humorous children are involved in more social activities and are rated as more likeable and friendly by peers than non-humorous children (Gest, Graham-Bermann, & Hartup, 2001; Klein & Kuiper, 2006). Finally, children who initiate humor are viewed as skilled communicators who can ease tensions in unfamiliar or uncomfortable settings and who can facilitate close bonds: Humorous children engage in more frequent humor about uncomfortable and intimate subjects with friends than with non-friends (Bariaud, 1989; Foot, Chapman, & Smith, 1977; Martin, 2007; Martineau,

1972; McGhee, 1989; Sanford & Elder, 1984; Semrud-Clikeman & Glass, 2010; Shiota, Campos, Keltner, & Hertstein, 2004).

Interestingly, although children's spontaneous conversational humor occurs most frequently in social interactions, and it is theorized that humor is associated with adjustment in middle childhood (Bariaud, 1989), the aforementioned association between childhood humor and developmental outcomes has been primarily substantiated by correlational statistical analyses that relate children's production and appreciation of jokes and unintentional humor to developmental constructs (Klein & Kuiper, 2006; Martin, 2007; Semrud-Clikeman & Glass, 2010). Moreover, the few researchers who have studied children's spontaneous conversational humor *have not sought to methodologically classify observable spontaneous conversational humor as affiliative, aggressive, or self-defeating.* A primary goal of this dissertation was to address this gap in the literature by methodologically assessing observable spontaneous conversational humor produced between children in an unfamiliar laboratory setting.

Friendships, defined as mutual, voluntary, and affectionate relationships between two non-family members, also contribute to child development (Bukowski et al., 2009; Newcomb & Bagwell, 1995; Parker & Asher, 1993b; Rubin, Bukowski, & Bowker, in press). Whereas parent-child and peer relationships are vital to socio-emotional development during middle childhood, developmental theorists suggest that children with positive quality friendships experience additional security, companionship, and intimacy not typically afforded by other close relationships (Sullivan, 1953). Furthermore, empirical research findings have indicated that long-term friendships offer opportunities for children to develop and refine socio-emotional competencies, including how to communicate about harmonious topics as well as resolve conflict (Rubin et al., in press; Sullivan, 1953). In terms of psychosocial adjustment, positive

quality friendships buffer children from developing loneliness, depression, anxiety, and low self-worth (Bagwell & Schmidt, 2011; Hodges, Boivin, Vitaro, & Bukowski, 1999). Taken together and developmentally speaking, children with positive quality friendships fare better in middle childhood than children with negative quality friendships or children who are lacking in friendship (Bagwell & Schmidt, 2011; Bowker, Rubin, Burgess, Booth-LaForce, & Rose-Krasnor, 2006).

Although both humor and friendship are believed to facilitate child development, and researchers suggest that humor promotes socioemotional development and strengthens interpersonal bonds, few scholars have extensively studied the relation between the two constructs. Indeed, *researchers have not explored the relation between observed affiliative, aggressive and/or self-defeating spontaneous conversational humor and positive and negative friendship quality in middle childhood (*Martin, 2007). Moreover, virtually nothing is known about whether spontaneous conversational humor that occurs *between mutual best friends* is associated with the pair's friendship quality (Semrud-Clikeman & Glass, 2010). Childhood humor theorists speculate that affiliative humor is most likely to contribute to positive social interaction; therefore, affiliative spontaneous conversational humor between friends is expected to be positively associated with friendship quality (Klein & Kuiper, 2006). On the other hand, it is believed that frequent aggressive and self-defeating spontaneous conversational humor contributes to poorer quality friendship, and higher rates of these "negative" types of humor between friends are expected to be negatively associated with friendship quality (Klein & Kuiper, 2006). Scholars who study dyadic interactions, such as social exchanges between friends, also hypothesize that behaviors between two individuals are interdependent and "work together" to influence each child's perception of their friendship (Kashy & Kenny, 2000). For

example, one child's use of affiliative humor might influence another child's use of affiliative humor, and the collective dyadic humor could influence one or both friends' ratings of friendship quality. *It is hypothesized that the dyadic interrelatedness (i.e., actor-partner effect) of children's affiliative, aggressive, and/or self-defeating spontaneous conversational humor is related to friendship quality in middle childhood.* Thus, another primary goal of this dissertation was to examine the direct and dyadic associations between spontaneous conversational humor and positive and negative friendship quality in middle childhood.

Researchers have found that individual differences contribute to children's spontaneous conversational humor. Humor scholars assert that a child's typical behavioral patterns (e.g., affect, mood) can be related to the amount of humor they use (Ruch, 1998). This has dyadic implications because close friends are more likely to have similar behavioral characteristics than less close friends or non-friends (Bukowski et al., 2009). It may be the case that best friends with similar behaviors (i.e., aggressive child and aggressive friend; withdrawn child and withdrawn friend; typically developing child and typically developing friend) share a similar "sense of humor" and use humor more interrelated than best friends who have different behavioral tendencies (e.g., aggressive child and withdrawn friend); therefore, *it is speculated that the behavioral similarity of a dyad is associated with the interrelatedness (i.e. dyadic nature) of affiliative, aggressive, and self-defeating spontaneous conversational humor in middle childhood.*

Additionally, developmental scholars have not studied whether familiarity influences the use of spontaneous conversational humor between best friends; however, it can be assumed that children with long-standing best friendships are more aware of what will amuse their friends (i.e., have more refined social perspective taking) than children in newer friendships (Bariaud,

1989; Semrud-Clikeman & Glass, 2010). Over time, best friends may tailor humor to each other because they are more familiar with what will evoke laughter within the dyad. *It is hypothesized that the duration of a best friendship is associated with the interrelatedness (i.e. dyadic nature) of affiliative, aggressive, and self-defeating spontaneous conversational humor in middle childhood.*

Overall, little is known about whether dyad-level "individual" differences, including behavioral similarity of best friends and/or duration of best friendship, are associated with dyadic spontaneous conversational humor in middle childhood. The final goal of this dissertation was to study these relations.

II. Specific Aims

To address gaps in the literature about children's spontaneous conversational humor and the relation *between* spontaneous conversational humor and friendship quality in middle childhood, this dissertation had four specific aims:

1. The *first specific aim* was to determine whether all three types of spontaneous conversational humor (affiliative, aggressive, self-defeating) were observable in interactions between best friends in middle childhood.

2. The *second specific aim* was to examine whether affiliative, aggressive, and/or self-defeating spontaneous conversational humor was associated with positive or negative friendship quality in middle childhood.

3. The *third specific aim* was to determine whether the interdependent nature of spontaneous conversational humor between two friends (i.e., dyadic humor) was associated with positive or negative friendship quality in middle childhood. In particular, this dissertation sought to determine whether there were interactive actor-

partner effects in children's use of spontaneous conversational humor and whether those effects made a significant contribution to how each child perceived the quality of the friendship.

4. The *fourth specific aim* was to study whether dyad-level "individual" differences in the composition of best friend dyads (behavioral similarity of the pair, duration of friendship) were associated with dyadic spontaneous conversational humor in middle childhood.

All four specific aims are referenced again in Chapter 2 when the hypotheses of the dissertation are described in greater detail. See Figure 1 for the model of this dissertation.

CHAPTER 2: LITERATURE REVIEW

This literature review is structured as follows: The etymology and modern definitions of childhood humor are presented first. Developmental theories of humor, methods for assessing childhood humor in middle childhood, and an overview of empirical research studies about humor in middle childhood, including its cognitive and socio-emotional correlates, are described next. Developmental theories of friendship quality and methods for assessing friendship quality in middle childhood are outlined next, followed by a discussion of the extant research about humor *and* friendship quality in middle childhood. A summary of the dissertation and corresponding research hypotheses are presented in the final section of the literature review.

I. Etymology and Modern Definitions of Childhood Humor

Early definitions of humor stem from the Latin term humorem, referring to bodily fluid or moisture (Keith-Spiegel, 1972; Wickberg, 1998). In the fourth century B.C., the Greek physician Hippocrates believed there were four humors in body: Yellow bile, black bile, blood, and phlegm. Hippocrates argued that an excess of one humor would contribute to poor health. Galen, a Greek physician during the second century A.D., extended the work of Hippocrates and suggested that the four humors were related to psychological outcomes. Galen theorized that an excess of one humor would alter an individual's disposition in specific ways (McGhee, 1979; Wickberg, 1998). An excess of yellow bile, believed to originate in the gall bladder, would contribute to an angry mood. If secreted in excess by the kidneys, black bile caused melancholy or depression. A hopeful or cheerful demeanor was suggestive of excess blood, and too much phlegm was thought to cause an apathetic disposition. A person with balance in the humors was considered to be *in good humor*, while someone with an imbalance was said to be *out of humor*.

In addition to describing fluids in the body, humor became personified in response to the work of Hippocrates. The term *humorist* was developed to describe anyone who was out of humor, and public citizens were called upon to help cure the peculiar behaviors of humorists. Laughter and public mockery were believed to be the most effective techniques for helping correct imbalances in bodily fluids (Wickberg, 1998). As a result, humorists were subjected to public ridicule unless they stopped exhibiting atypical demeanors, and those who did not recover were viewed as social outcasts. In the sixteenth century A.D., the term humor was expanded to include any behavior that differed from social norms. Correspondingly, a humorist was anyone who produced incongruous, ridiculous, and/or amusing behaviors. By this time, many scholars still believed that imbalances in the four humors caused atypical dispositions; however, some hypothesized that other medical afflictions (e.g., infectious diseases) or environmental factors could be responsible for socially undesirable behaviors (Keith-Spiegel, 1972; Wickberg, 1998).

It was not until the nineteenth century A.D. that current conceptions about humor were differentiated from historically negative opinions (Wickberg, 1998; Martin, 2007). Largely guided by humorous literary works of Mark Twain and other authors, modern theorists described child and adult humor as behavioral or linguistic products generated for the amusement of others; a humorist being someone trying to produce emotional pleasure. Laughter, once viewed as a mechanism for transmitting ridicule to humorists, became a positively regarded derivative of humor. Thus, unlike in historical times, humor is now viewed favorably, with humorous qualities demonstrated by children and adults being perceived as socially acceptable and desirable (Keith-Spiegel, 1972; Lewis, 2006; Wickberg, 1998). For purposes of this literature review, the term humor is defined by the *Oxford English Dictionary* as "the quality of action, speech, or writing

which excites amusement; oddity, jocularity, facetiousness, comicality, fun" (Simpson & Weiner, 1989, p. 486).

There are three types of childhood humor. *Jokes* are rehearsed or formulaic short stories aimed at amusing others. Jokes occur occasionally in informal settings but are typically shared via formal productions like speeches or television shows. Although jokes most often come to mind when thinking about humor and scholars have most often used jokes to study humor styles, jokes are the least frequently occurring type of humor (Martin & Kuiper, 1999). *Unintentional humor* occurs when someone accidentally evokes laughter or mirth in others, normally resulting from minor mishaps or small non-distressful embarrassments. For example, a person who unintentionally mispronounces a word may generate laughter from those around them. Unintentional humor occurs in everyday interactions and is also the basis for formally produced "slapstick" comedy (Martin, 2007). Since unintentional humor occurs unpredictably and has primarily been assessed using survey report of humor styles, researchers know little about the construct.

Spontaneous conversational humor is the most frequently occurring type of childhood humor (Martin & Kuiper, 1999). As implied by its name, spontaneous conversational humor is unplanned, but unlike unintentional humor, spontaneous conversational humor is deliberate, with one person seeking to amuse another person(s). Initially, the study of spontaneous conversational humor was aimed at identifying its many sub-types. Scholars analyzed conversations and grouped humorous exchanges into categories, including anecdotes, puns, wisecracks, ironic statements, sarcasm, self-deprecation, teasing, and/or double entendres (Long & Graesser, 1988; Norrick, 2003). However, modern humor scholars argue that spontaneous conversational humor should also be classified by its intended goal (e.g., ease tension, strengthen/weaken close bonds).

It is also suggested that spontaneous conversational humor includes non-verbal cues of amusement, such as facial expressions, body movements, or humorous eye contact between individuals. As a result, research aims have shifted to the study of *affiliative*, *aggressive,* and *self-defeating* sub-types of spontaneous conversational humor (Martin et al., 2003). The goal of affiliative humor is to strengthen relationships and reduce interpersonal tensions through the amusement of others. The goal of aggressive humor is to enhance the self through ridicule of others (e.g., hostile teasing, mockery), and self-defeating humor is aimed at gaining attention and social approval via negative statements about the self (Martin et al., 2003).

II. Humor and Development

Developmental Theories of Humor

   Incongruity theory. Based on the cognitive developmental theory of Piaget (1970) and findings from several empirical studies about children's humor (e.g., McGhee, 1971; Shultz & Pilon, 1973; Zigler, Levine, & Gould, 1966), McGhee proposed a four-stage incongruity model of childhood humor (McGhee, 1979). McGhee (1979) argued that children assimilate incongruous, amusing environmental stimuli into existing cognitive schemas using one of two techniques: *Reality assimilation*, which involves children's alignment of inharmonious information with mental representations derived from previous true-life experiences; or *fantasy assimilation*, wherein children playfully integrate stimuli into schemas that do not reflect reality. Incongruity theory posits that humor results from children's intentional use of fantasy assimilation to reconcile environmental stimuli using impractical schemas. Moreover, children make intentional errors in assimilation for the amusement of others, a skill learned from watching parental and peer reactions to previous make-believe behaviors (McGhee, 1979; Piaget, 1970).

McGhee's first stage of humor development begins in the second year of life and corresponds with the Piagetian preoperational phase of cognitive development (McGhee, 1979; Piaget, 1970). In Stage 1, toddlers use fantasy play to assimilate *incongruous actions toward objects*. For example, a child might move a box of crayons along the floor, finding it humorous to pretend the box is actually a toy car. Stage 2 of humor development begins in the third year of life, with toddlers using playful language to *incongruously label objects and events*. For instance, a child might jokingly say "hello" to a caregiver when they know they should be saying "goodbye." Stage 3 of humor development commences when children realize that objects and events are defined by concepts and characteristics, typically during the third or fourth year of life in early childhood. At this stage, fantasy assimilation involves *conceptual incongruity*, and children intentionally misrepresent multiple aspects of a concept. A child might, for example, find it amusing to draw wings on a lion and suggest that it flies in the sky. Stage 4 of humor development is called *multiple meanings*, and it corresponds with Piaget's concrete operational phase, beginning in middle childhood when children are approximately seven years old. Multiple meaning fantasy assimilation does not require the behavioral or linguistic actions associated with previous stages. Instead, children can use mental abilities to playfully assimilate incongruent information. In stage four, children begin to understand the "double meanings" of statements and enjoy abstract jokes (e.g., Question: "Why did the chicken cross the road?" Answer: "To get to the other side.") and riddles (e.g., "What's black and white and red all over?").

McGhee argued that humor is enjoyed throughout childhood, with the gradually increasing sophistication of an individual's mental schemas and cognitive abilities dictating the complexity of their humor (McGhee, 1979). McGhee also suggested that children especially enjoy fantasy assimilation of recently mastered information rather than playfully assimilating

familiar knowledge (McGhee, 1983). Thus, according to the principles of incongruity theory, the ability to induce amusement in others is directly correlated to the development and mastery of specific cognitive-perceptual processes.

Complicity theory. Bariaud (1989) expanded McGhee's incongruity theory to include a playful social-affective component. Complicity theory hypothesizes that cognitive processes play a role in the development of childhood humor, but children cannot perceive incongruences as humorous unless they are presented in a playful (i.e., safe) environment (Bariaud, 1989). Bariaud (1989) argued that humor contributes to the development of social competence and emotional intelligence because initiating and appreciating humor requires children to assess social cues and discern the intentions of social partners. Simply put, humor cannot exist if a child does not have mutual complicity or a shared playful intent with another individual. Bariaud (1989) suggested that humor develops along a similar timeline as is proposed by McGhee's incongruity theory; however, Bariaud (1989) suggested that the development of humor in middle childhood is further influenced by the development of social perspective taking and the formation of close friendships which enable children to practice humorous exchanges and refine social interaction skills (Semrud-Clikeman & Glass, 2010).

Assessing Humor in Middle Childhood

Historically, most developmental researchers have assessed children's humor by tallying the number of times a child laughs in response to laboratory-produced stimuli, such as cartoons, riddles, jokes, or humorous audio-recordings (e.g., McGhee, 1980; McGhee & Lloyd, 1981; McGhee & Duffey, 1983; Zigler et al., 1966). For example, in early studies about childhood humor, scholars investigated whether intelligence was associated with how frequently a child laughed in response to cognitively simple versus complex cartoon stories (Zigler et al., 1966).

Studies about socially facilitated laughter have also utilized cartoons and scripted jokes to elicit laughter from children; however, these studies have involved the use of confederates, and children's humor responses were assessed with other unfamiliar children present (Chapman, 1973, 1975). In other laboratory-based studies, researchers have explored whether children can comprehend funny incongruences in sentences or written scenarios. Alternatively, to assess humor production, researchers have asked children to generate written "punchlines" in response to funny drawings (Masten, 1986; McGhee, 1979; Shultz & Pilon, 1973).

Other developmental researchers have employed ethnographic and observational methodologies to measure how many times children initiate or respond to humor while in the laboratory or at school, and parent diaries of child utterances are typically used to assess the content and frequency of children's humor at home (Bergen, 1998). Some scholars have used Likert-style peer and teacher ratings to determine the humorousness of a child, and one study has utilized child-reported survey responses to determine how often children are humorous in interactions with mothers, siblings, and self-nominated best friends (Manke, 1998; Prasnos & Tittler, 1981; Sherman, 1988; Sletta, Valas, Skaalvik, & Sobstad, 1996; Warnars-Kleverlaan, Oppenheimer, & Sherman, 1996).

Contemporary humor scholars have shifted away from studying responses to canned jokes and cartoons and toward the investigation of spontaneous conversational humor (Martin & Kuiper, 1999; Martin, 2007). In most modern adult humor research, researchers use survey and observational methodologies to assess the usage of affiliative, aggressive, and self-defeating spontaneous conversational humor in dyadic and group exchanges (Martin, 2007; Martin et al., 2003; Winterheld, Simpson, & Orina, 2013). In these studies, spontaneous conversational humor is operationalized as a sum of reported or observed affiliative, aggressive, and self-defeating

humor. From individual humor scores, developmental researchers use statistical techniques (e.g., actor-partner analyses) to compute dyadic or group humor scores to assess the interrelatedness of one person's humor to another individual's laughter response (e.g., Winterheld et al., 2013). Current directions in the study of humor in middle childhood include using similar actor-partner methodologies to assess occurrences of affiliative, aggressive, and/or self-defeating spontaneous humor within dyads and groups (Klein & Kuiper, 2006; Martin, 2007).

Empirical Studies: Humor in Middle Childhood

Guided by incongruity and complicity theories, researchers have conducted several studies to explore cognitive and socio-emotional correlates of humor in middle childhood. The following section presents these findings by developmental topic.

Cognitive development. Most studies about childhood humor have been focused on its cognitive functions (Martin, 2007). Throughout the 1970s, cognitive development researchers conducted several studies in response to Zigler et al. (1966) and McGhee (1971). To assess children's *ability to detect linguistic incongruities*, Shultz and Pilon (1973) presented 6-, 9-, 12-, and 15-year-olds with 36 audio-recorded incongruent sentences, including those with: Lexical uncertainty (e.g., "No one liked the plant. No one liked the factory."); phonological uncertainty (e.g., "The doctor is out of patience (patients). The doctor has lost his temper."); surface-structure uncertainty (e.g., "He sent her kids story books. He sent the children some story books."); and deep-structure uncertainty (e.g., "The duck is ready to eat. The duck is ready to eat the food.") (Shultz & Pilon, 1973, p. 730). After hearing each sentence, children interpreted its meaning and, using picture scenarios provided by researchers, selected one illustration that matched their interpretation. After analyzing children's verbal and pictorial interpretations of each sentence, Shultz and Pilon (1973) determined that children's ability to detect lexical and

phonological uncertainty develops linearly throughout childhood, with 6-year-olds demonstrating the lowest rates of detection and 15-year-olds the highest. In contrast, surface- and deep-structure ambiguity detection did not begin until children were twelve years of age. Results suggest that humor appreciation and comprehension are influenced by linguistic abilities, including children's understanding of phonology, morphology, semantics, and syntax (Shultz & Pilon, 1973). Moreover, Shultz and Pilon (1973) argued that the development of abstract humor coincides with improvements in syntactic processing rather than the formation of concrete operational thoughts as suggested by McGhee (1979).

A second study by Shultz (1974) explored the development of children's *appreciation and comprehension of riddles*. After hearing each of 20 audio-recorded riddles, children reported whether the riddle was funny and interpreted its meaning. Shultz (1974) found that 8-year-olds were more amused by cognitively advanced "solvable yet ambiguous" riddles (e.g., "Why did the cookie cry?") than 6-year-olds who found humor in straightforward, non-resolvable incongruities (e.g., "Tell me how long a cow should be milked.") (Shultz, 1974, p. 101). Based on his study, Shultz posited that older children appreciate humor if incongruities are solvable, whereas younger children can appreciate "enjoyable nonsense" (Martin, 2007; Shultz, 1974). In the end, Shultz suggested that riddles evoke unique patterns of humor responses since they are more akin to mental queries than jokes or cartoons (Shultz, 1976). Shultz also theorized that children's appreciation of riddles may depend on whether humor is optimally challenging, arguing that amusement is predicted by whether children feel cognitively challenged but not frustrated by incongruities (Shultz, 1976; McGhee, 1976). In this case, riddles may be too challenging for younger children to appreciate. Some subsequent studies have supported this "cognitive congruency" perspective (e.g., Park, 1977; Whitt and Prentice, 1977; Yalisove, 1978);

however, most view Shultz' research as evidence of the development of children's understanding of joke structure rather than of overall age-differentiated experiences of childhood humor (Martin, 2007).

Cognitive scientists have also studied children's humor in the context of *moral development* and *perspective taking*. Guided by Piagetian conceptions about moral development (Piaget, 1932), McGhee (1974) speculated that children with lower levels of moral maturity would assess a humorous situation by its outcome or consequence, whereas morally mature children would be amused by the intentions of individuals in the situation. McGhee (1974) conducted two studies to test this hypothesis. In Study 1, McGhee (1974) explored whether morally heteronomous (i.e., less mature) and autonomous (i.e., more mature) 8-year-old children were amused by unintentional high damage scenarios (e.g., "Helen was trying to surprise her mother by making a cake, but she accidentally made a big mess on the table. Helen got egg shells and yolks all over the place") or intentional low damage scenarios (e.g., "Helen did not want to dry the dishes so she got mad and decided to mess up the table. She cracked open one egg, and slyly let the yoke spill onto the table") (McGhee, 1974, p. 519). In particular, after hearing unintentional high damage and intentional low damage event narratives, McGhee (1974) asked children to rate the funniness of each scenario and provide a rationale for the rating. McGhee (1974) determined that morally heteronomous children were uniformly amused by the unintentional high damage story, typically citing the "big mess" as the rationale for their choice. Morally autonomous children did not show preference for either scenario. However, morally autonomous children who rated the story as funny because of the intentions of the individual were more likely to say the intentional low damage story was funnier than the autonomous children who attributed humor to extensiveness of the outcome, suggesting that children with

advanced moral development find greater amusement in Helen's intentions than the magnitude of the outcome (McGhee, 1974). Study 2 used similar scenarios to test humor appreciation in morally autonomous 10-, 14-, and 18-year-olds. All three age groups showed patterns of humor appreciation similar to the morally autonomous group in Study 1: No age group was statistically significantly more amused by either type of scenario, but the intentionality/unintentionally of individuals in each scenario was more predictive of humor responses than the extent of the mess (McGhee, 1974).

More recently, researchers have explored children's *appreciation of irony and sarcasm.* For instance, Winner and colleagues (1987) conjectured that children must understand a speaker's perspective and intention in order to find humor in statements that convey information different from the literal meaning of the sentence. A study of 6- 8- and 10-year-olds showed that detection of speaker sarcasm (i.e., utterance is the literal opposite of what speaker means), hyperbole (i.e., utterance is an overstatement of what speaker means), and understatement was contingent on age (Winner et al., 1987). In general, the ability to consistently detect sarcasm or hyperbole was not present until children were at least eight years old, and children could not recognize understatements until age ten. Winner and colleagues (1987) suggested this is reflective of trajectories of children's social-cognitive development: Before children can appreciate non-literal humor, they must have the capacity to make complex linguistic and social inferences, including knowing whether a statement has two meanings and understanding if/why a speaker would convey a message that is the literal opposite of its intended meaning. Moreover, understatements involve the least obvious linguistic violations of truth compared to sarcasm and hyperbole. As a result, children must use even more complicated social-cognitive strategies to detect understatements, which is why only 10-year-olds recognized them in the study. Follow-up

investigations have provided support for Winner and colleagues (1987), with empirical findings similarly indicating that children begin to detect verbal irony around age six and improve their detection abilities throughout childhood and adolescence (Creusere, 2000; Dews et al., 1996; Kielar-Turska & Bialecka-Pikul, 2009). For example, Dews et al. (1996) found that 6-year-olds do not think ironic humor is funnier than literal humor, but 8-year-olds sometimes do. College students, on the other hand, rate ironic humor as extremely amusing compared to literal humor (Dews et al., 1996).

De Groot, Kaplan, Rosenblatt, Dews, and Winner (1996) expanded upon the work of Winner and colleagues (1987) by testing children's *production* of *ironic insults and compliments*. The research team verbally presented ironic insults (i.e., phrases with a positive tone but a negative meaning) and ironic compliments (i.e., utterances with a negative tone but a positive connotation) to 6-year-olds, 8-year-olds, and adults. Afterwards, participants were asked to produce statements similar to the ones modeled by researchers. Results revealed that approximately 20% of 6-year-olds could generate ironic insults and compliments. About 70% of 8-year-olds could produce ironic insults, and nearly 50% could create ironic compliments. Adults, on the other hand, could replicate ironic insults and compliments with 100% accuracy. Overall, findings suggest that the ability to produce irony, particularly ironic compliments, may lag behind the aforementioned "six year mark" that other scholars attribute to children's recognition of verbal irony (Winner et al., 1987; Harris & Pexman, 2003; Whalen & Pexman, 2010).

Lastly, two studies have examined the relations between *humor, cognition, academic achievement,* and *social competence*, or the successful functioning of an individual in their environment (White, 1959). In a study by Masten (1986), 10- to 14-year-olds were shown

humorous cartoons and asked to rate the funniness of each cartoon (humor appreciation), explain why each cartoon was amusing (humor comprehension), and generate a written punch line/joke about each cartoon (humor production). Masten (1986) compared these three measures of humor to children's intelligence scores, academic performance, and peer and teacher ratings of children's social competence at school (e.g., sociability, cooperativeness, disruptiveness). Correlational analyses revealed that humor comprehension and production were positively associated with academic achievement and all three measures of humor were positively related to social competence: Humorous children performed better in school and were rated as happier, less isolated, and more sociable leaders than non-humorous counterparts. However, hierarchical regression analyses determined that children's intelligence explained most of the variance in social competence, not humor. After controlling for children's intelligence, just humor production moderately predicted peer ratings of social isolation, with children who produce humor demonstrating less socially isolated behaviors in the classroom. Only humor comprehension was positively predictive of academic achievement after accounting for children's intelligence.

In a study of 9- to 14-year-olds, Pellegrini and colleagues (1987) gathered similar information about children's intelligence; humor appreciation, comprehension, and production; social cognition (i.e., social information processing); academic achievement; and social competence. Using principal components analysis, Pellegrini et al. (1987) determined that humor and social cognition measures were indicative of one primary factor called social comprehension. Hierarchical regression analyses revealed that social comprehension modestly predicted academic achievement after accounting for children's intelligence; however, unlike in the study by Masten (1986), social comprehension was strongly positively predictive of peer-

and teacher-rated social competence above and beyond children's intelligence, suggesting that social cognition may explain more of the variance in children's social competence than humor.

Socio-emotional development. Several laboratory experiments have assessed whether the presence of another individual facilitates laughter and smiling in children. Chapman (1973) observed 7- and 8-year-olds using headsets to listen to humorous audio recordings. Some children were assigned to the "social" experimental condition and listened to the recording alongside another child with a similar headset. Other children heard the recording in isolation. Behavioral coding of positive affect indicated that children who listened to the audio recording with others laughed and smiled more often than those who listened in isolation (Chapman, 1973).

Over several years, the original Chapman study (1973) was replicated using several different experimental manipulations. In one manipulation, children were observed listening to an audio recording alone (isolation condition), with one same-age confederate (dyadic condition), or with two same-age confederates (triadic condition). In both the dyadic and triadic conditions, participants were either told that the confederate(s) was listening to the same material or a different humorous recording. The triadic condition involved one additional manipulation: Confederates were instructed to look at each other (i.e., away from child) or make eye contact with the child for specific amounts of time during the listening session (Chapman, 1975). Results supported findings from the initial Chapman study (1973) because children in dyads and triads laughed and smiled more frequently than children who listened to audio recordings alone. The experimental manipulation offered new information, however, by suggesting that dyadic and triadic laughing and smiling rates did *not* vary based on whether children thought confederates were listening to similar or dissimilar audio material (Chapman, 1975). Chapman (1975) also found that confederates' engagement with children affected smiling and laughing frequency

rates. Children who received the most eye contact from confederates in the triadic condition produced the most laughter and smiling during the audio recording, but children who received no eye contact from confederates (i.e., confederates looked at each other and away from child throughout entire video) laughed and smiled least throughout the experiment (Chapman, 1975).

In other manipulations of the initial Chapman study (1973), researchers determined that children laugh and smile more when they watch humorous videos with others compared to watching alone and that children's rates of laughter and smiling are enhanced above and beyond the presence of a same-age confederate if a responsive (i.e., smiling, laughing) adult experimenter stays in the room during the audio or video recording. In contrast, adult experimenters who refrained from eye contact/engagement with children did not uniquely contribute to children's rates of laughter and smiling during the experiment (Chapman, Smith, & Foot, 1980). In a final study, Chapman (1998) found that humorous laughter and smiling decreased if children were directly told that an adult was observing the experiment. Proximity and seating position were also correlated with rates of laughter and smiling during dyadic conditions: Children who sat facing a confederate laughed and smiled more during humorous audio and video recordings than children who sat side-by-side or faced away from a confederate (Chapman, 1998).

Martineau (1972) suggested that humor is a *mechanism for solidifying and controlling in- and out-group behaviors*, hypothesizing that members of a group bond while sharing disparaging remarks about those excluded from the group. For example, humor about "outsiders" from ethnic minority groups helps maintain cohesiveness and social order among individuals in the majority group (Martineau, 1972). In line with this philosophy, McGhee and Lloyd (1981) studied whether children found humor in illustrations of adults suffering from minor misfortunes (e.g.,

accidentally fell into a hole, having water poured on head). McGhee and Duffey (1983) addressed the same empirical question using pictures of adults and children from similar and dissimilar ethnic groups. Findings from both studies revealed that children's humor was amplified when the victim of misfortune was an adult or child from a different ethnic background (McGhee & Lloyd, 1981; McGhee & Duffey, 1983). More recent studies have investigated humor and social order in the context of direct and indirect bullying (e.g., Keltner, Capps, Kring, Young, & Heerey, 2001; Shapiro, Baumeister, & Kessler, 1991; Warm, 1997). In particular, extant research has shown that bullies use aggressive humor to openly belittle other children and spread rumors to ostracize or reject peers (Klein & Kuiper, 2006; Semrud-Clikeman & Glass, 2010; Shapio et al., 1991). In comparison, prosocial children typically use affiliative humor to earn respect and strengthen bonds within a group (Klein & Kuiper, 2006).

Another line of research has focused on humor and peer acceptance, defined as an overall sense of belonging and inclusion in a peer group as denoted by a child's active participation in peer group activities (Furman & Robbins, 1985). Fabrizi and Pollio (1987) conducted an observational study of humorous classroom interactions during the third (M age = 8 years), seventh (M age = 12.5 years), and eleventh grades (M age = 16.5 years) and found that peers usually laughed and smiled at funny classmates, whereas teachers thought humorous children were disruptive. Fabrizi and Pollio (1987) also determined that humorous classroom incidents typically involved multiple children in peer groups and suggested that children's humor is predictive of social likeability. Furthermore, Fabrizi and Pollio (1987) theorized that either humor promotes peer acceptance or that peer acceptance fosters children's humor appreciation and production.

The following year, Sherman (1988) tested this empirical question using a 5-point Likert-style survey. In particular, Sherman obtained peer ratings of third graders' (*M* age = 7 years old) humorousness and likeability (e.g., "I wish he/she was in our peer group"). Path analyses established that humor was a better cross-sectional predictor of likeability than likeability was of humor, a directionality supported by several subsequent studies about the predictive relation between children's humorousness and peer acceptance (e.g., Gest et al., 2001; Sletta et al., 1996).

Taking it a step farther, Warnars-Kleverlaan and colleagues (1996) conducted a study of humor, peer-rated likeability, and social status among 9-, 12-, and 15-year-olds. Similar to the research by Sherman (1988), peers provided survey ratings of classmates' humorousness and social likeability. Additionally, children examined a class roster and circled the three classmates they liked least and three classmates they liked most. After researchers tallied these ratings, every child received two standardized sum scores to denote the number times they were "liked" and "disliked" by classmates. A social preference measure was computed by subtracting the standardized disliking score from the standardized liking score, while a social impact measure was calculated as a sum of both standardized measures. Researchers classified popular children as those with a social preference scores greater than 1 (more likes than dislikes); rejected children a social preference score less than -1 (more dislikes than likes). Neglected children were neither liked nor disliked by classmates and had social impact scores less than -1, and controversial children were both liked and disliked by classmates, as indicated by a social impact score greater than 1. Children in the fifth "average" group had social preference and impact scores that ranged between half a standard deviation above and below the mean (-.50 < like/dislike scores < .50). Much like in the Sherman (1988) study, Warnars-Kleverlaan and colleagues (1996) found that humorous children were generally perceived as more socially

attractive by peers than non-humorous children; yet, statistically significant analysis of variance findings hinged on the social status of the humorous child. Findings revealed that controversial children were rated as more humorous compared to all other social status groups, suggesting that factors other than social preference and impact may contribute to the relation between humor and peer acceptance among popular, rejected, neglected, and average children.

Two correlational studies have explored *humor and family adaptation*. In 1980, McGhee led a cross-sectional study about the relation between maternal parenting behaviors and children's humor (McGhee, 1980). McGhee compared survey ratings of maternal warmth and control to the frequency of children's laughter, initiations of humor, and hostility during mother-child free play sessions. McGhee (1980) discovered that among 6- to- 11-year-old boys, maternal instrumental aid (e.g., help with problem solving, completing tasks) was negatively associated with boys' rates of laughter and verbal humor. In particular, boys whose mothers failed to provide instrumental aid were more humorous during free play sessions than boys whose mothers consistently provided them with help (McGhee, 1980). Moreover, Prasnos and Tittler (1981) used peer ratings of humor to classify boys into three humor groups: Humorous, moderately humorous, and not humorous. When compared to data about boys' home environments, researchers found that humorously rated boys were more likely to come from homes with more conflict and less structure than boys in the moderately humorous or non-humorous groups (Prasinos & Tittler, 1981). Taken together, results from these three studies provide preliminary evidence that children may use humor to cope with relationships or environments that are too restrictive, permissive, and/or stressful.

Most empirical findings about humor and children's *close relationships* are descriptive and have resulted from studies about other correlates of children's humor. For example, in an

observational study about the early development of humor, Bergen (1998) found that siblings were present in nearly 70% of young children's attempts to produce humor, and family members, such as siblings and parents, frequently responded to children's humor with additional playfulness in order to sustain humorous interactions.

In a Vygotsky-informed investigation about children's understanding of irony, Massaro and colleagues (2013) established that 6-, 8-, and 10-year-olds best understood the double meaning behind complex ironic utterances when mothers rather than siblings read the ironic utterances to children. Kazarian, Moghnie, and Martin (2010) explored the relation between parental warmth and children's long-term happiness and found that maternal warmth during childhood positively influenced children's happiness in early adulthood *only if* young adults frequently engaged in self-enhancing humor. Peer-rated humorousness has also been positively associated with children's social skills and the number of reciprocated friendships a child has in their classroom (Gest et al., 2001; Masten, 1986).

One study has specifically examined the relation between children's humor and close relationships in middle childhood. Manke (1998) developed the *Humor Use in Multiple Ongoing Relationships* (HUMOR) measure to assess how often children engage in humorous behaviors when they spend time with their mothers, siblings, and self-nominated best friends. Sample items from the 12-item semi-structured interview include: "I laugh at movies, TV, or radio programs that I think are funny," "I tell memorized jokes that I have heard from other people," and "I play practical jokes" (Manke, 1998, p. 362), and interviewers rate children's verbatim responses to these statements on a 6-point Likert scale, from 1 = *hardly ever* to 6 = *very often*. Correlational analyses indicated that children's use of humorous behaviors is most positively associated with self-nominated best friendship, but the frequency of humorous behaviors with best friends is

strongly positively correlated with how often children engage in humor with siblings and, to a lesser degree, mothers. Specifically, children who engaged in humor with best friends are more likely to be humorous during interactions with siblings and mothers, too (Manke, 1998).

Individual differences. Briefly, it is important to highlight studies that suggest humor appreciation and production may be influenced by genetics and biologically predisposed personality/temperament. In terms of genetics, adult twin studies have explored the genetic, shared environmental (e.g., home setting), and non-shared environmental (e.g., separate life experiences) contributions to humor in identical and fraternal twins. For the most part, these studies have shown that variation in twins' humor is attributable to shared and non-shared environmental factors instead of genetics (Cherkas et al., 2000; Wilson, Rust, & Kasriel, 1977). In another study, Manke (1998) studied the relation between genetics and survey reports of children's use of humor with mothers, siblings (biological and adopted), and self-nominated best friends. Multivariate statistical modeling revealed that genetics accounted for approximately 25% of the variance in children's humor usage with mothers and biological and adoptive siblings, but genetics accounted for insignificant variance in humor usage with best friends. On the other hand, non-shared environmental factors accounted for more than 50% of the variance in children's humor usage with mothers, siblings, and best friends. Overall, Manke (1998) reported that factors outside the home primarily contribute to the frequency with which individuals use humor in close relationships, but genetics and within-home factors uniquely predict humor usage in mother-child and sibling-child interactions.

There is some evidence that genetics predict early temperament, which, in turn, predicts children's humor. Goldsmith and colleagues (1999) examined whether genetics or shared and non-shared environmental factors contributed to observable positive and negative affectivity in

3- to 16-month-old identical and fraternal twins. Multivariate analyses revealed that statistical models with genetic, shared environmental (e.g., maternal attachment/sensitivity) and non-shared environmental predictor variables best explained twin's positive affectivity. Negative affect was best predicted using models with genetic and non-shared environmental indicators, not indicators of shared experience. Based on this study, Goldsmith and colleagues (1999) asserted that genetics influence both positive and negative aspects of early dispositional traits.

In a series of studies with adults, Ruch (1998) explored the relation between mood and humor and found that "favorable" social behaviors (e.g., positive affect, good mood) positively predicted humor production and appreciation, whereas negative social behaviors (e.g., negative affect, bad mood) were negatively related to humor production and appreciation. In addition, Ruch (1998) speculated that early behavioral characteristics predict long-term personality traits. Taken together, it is theorized that there is a relation between an individual's genetics and social behaviors and between social behaviors and long-term humor appreciation and production. However, researchers suggest that these typically defined positive and negative adult "personality" traits are not stable enough to measure until adolescence (Ruch, 1998). Moreover, researchers know little about the influence of other early typical behavioral patterns (e.g., temperament, aggression, withdrawal) on children's humor appreciation or production (Goldsmith, Lemery, Buss, & Campos, 1999; Ruch, 1998).

III. Friendship Quality in Middle Childhood

Conceptual Framework and Developmental Theories of Friendship

The conceptual framework used for studying friendship quality is drawn primarily from the research of Hinde and colleagues (e.g., Hinde, 1987; Hinde & Stevenson-Hind, 1976). Hinde (1987) argued that each individual brings defining characteristics into the world, including both

physical features (e.g., ethnicity) and biologically based characteristics (e.g., temperament, intellect) that define a child's physical, physiological, or psychological functioning. These individual characteristics influence a child's ability to engage in interactions with social partners, including friends. In short, individual characteristics of both children in a friendship dyad *and* the interactions between two friends affect the form, function, and quality of friendship in childhood (Hinde & Stevenson-Hinde, 1976).

From a developmental standpoint, the theoretical works of Piaget (1932) and Sullivan (1953) inform the study of friendship quality in middle childhood. Piaget's theory (1932) first highlighted the developmental significance of peer relationships, suggesting that children were more likely to learn about conflicting ideas and explanations, alternative perspectives, and how to resolve conflict with compromise in peer relationships than in vertical parent-child relationships where children tend to accept parental values and beliefs even when the child does not understand them (Piaget, 1932). Moreover, Piaget (1932) hypothesized that children develop advanced conceptions of their social worlds as a result of ongoing playful interactions with peers.

Piaget's theory of development was influential in shaping contemporary perspectives about friendship quality in childhood, including those of Sullivan (1953). Similar to Piaget (1932), Sullivan believed that peer interactions help facilitate child development; however, Sullivan also proposed that children have different interpersonal needs at various stages of development, and peer relationships fulfill *young* children's need for acceptance (Sullivan, 1953). Friendships, on the other hand, help meet children's primary need for intimate relationships during *middle childhood*. Sullivan (1953) argued that friendships provide a context for teaching children about intimate social behaviors, including mutual respect, collaboration,

equality, and reciprocity. Within a friendship dyad, both children benefit from these social competences and, in turn, validate each other's feelings of self-worth (Sullivan, 1953). Sullivan (1953) further asserted that children who do not have close dyadic friendships have poorer quality close relationships and lower levels of self-esteem, both of which contribute to maladjustment later in the lifespan.

Assessing Friendship Quality in Middle Childhood

To assess friendship quality in middle childhood, developmental researchers identify *mutual friendships* using sociometric questionnaires and then employ survey or observational methodologies to assess friendship quality within the dyad (Bukowski et al., 2009). As a first step for identifying mutual friendships, researchers ask children to: 1) nominate first, second, and third best friends from a list of classmate (or grade-mate) names; 2) rank-order the likeability of all other classmates (or grade-mates) using a Likert-style rating scale (i.e., 1 = *highly dislike* to 5 = *highly like*); or 3) complete both best friend nominations and rankings of classmates (or grade-mates). Developmental researchers typically identify mutual friendships using the first (i.e., best friend nomination) methodology since it is the most conservative approach, requiring that both children nominate each other as best friends (e.g., Parker & Asher, 1993b). Alternatively, some researchers have identified mutual friendships as those wherein both children classify each other as "4's" or "5's" on the likeability rating scale, or researchers have used a combination of nominations and ratings (i.e., first child nominates the second as a best friend, second child rates the first child as extremely likeable) to identify mutual friendships (e.g., Bukowski & Hoza, 1989; Howes, 1990). In a comparative analysis by Erdley and colleagues (1998), the conservative best friend nomination technique identified mutual friendships that were just as stable as those identified by the two other methodologies. Thus, due to their specificity and

reliability, best friend nominations are most widely used to classify mutual friendships in middle childhood (Bukowski et al., 2009).

To assess friendship quality in middle childhood, children and their best friend(s) typically complete surveys or participate in semi-structured interviews about various features of their friendship, including companionship, intimacy, loyalty, conflict, punishment, and power (Berndt & McCandless, 2009; Bukowski et al., 2009). From each child's responses to survey or interview items, researchers calculate scores for two dimensions of friendship quality: Positive friendship quality and negative friendship quality. Positive friendship quality is represented by an average rating of positive features of the dyadic relationship (e.g., intimacy), while negative friendship quality is the average rating of negative features of the dyadic relationship (e.g., conflict). As a final step, some researchers compute overall friendship quality by calculating the average friendship quality rating of the two friends (Berndt & McCandless, 2009).

As an alternative to survey methodology, some scholars use observational coding schemes to record and assess naturalistic or laboratory-based observations of a dyad's social interactions (Berndt & McCandless, 2009; Bukowski et al., 2009). When using observational techniques, researchers code for observable positive and negative friendship quality behaviors for each member of the dyad and average behavioral "scores" to compute composites of positive and negative friendship quality for each child. Much like when analyzing survey responses, some researchers compute overall ratings of observed positive and negative friendship quality for the pair.

IV. Humor and Friendship Quality in Middle Childhood

Researchers have conducted several correlational studies of children's experiences of humor and friendship during middle childhood. In addition to studies that have found that

humorous children are perceived as more desirable friends than non-humorous children (e.g., Gest et al., 2001), there have been three studies in which the frequency of laughter and humor in interactions between friends versus non-friends have been explored. Foot and colleagues (1977) studied whether 7- and 8-year-old children laughed more frequently in response to humorous videos when they were viewed in the company of a friend versus an unfamiliar peer. Observational coding and dyadic laughter ratings revealed that friends produced more laughter than non-friend dyads and that friendship dyads often produced coordinated laughing behaviors. Moreover, friends often laughed in response to each other (i.e., when one friend laughed at the video the other friend laughed in response to the first friend), but partner-responsive laughter was not witnessed as frequently between non-friends (Foot et al., 1977).

Nearly two decades later, Scambler and colleagues (1998) found that that 51% of children reported being more apt to engage in light-hearted humor and teasing with close friends than with an unfamiliar child or with a peer. In the third aforementioned study about humor usage and close relationships, Manke (1998) found that children reported having more humorous interaction with friends than with mothers and siblings.

The content of humorous exchanges between friends have been investigated in three ethnographic studies, with findings suggesting that friends often joke about intimate or sensitive topics. For example, McGhee (1980) observed that younger children frequently joke with each other about toilet training during play, and older children and adolescent friends often make playful jokes about sex. In another study, Sanford and Elder (1984) observed school lunchroom conversations between 8- to 10-year-old friends and found that *all* instances of conversational humor were related to intimate discussions about sex, bodily functions, substance use, or other taboo topics that children rarely discussed with parents or other peers. Sanford and Elder's

(1984) findings were supported by the ethnographic work of Cameron and colleagues (2010) who observed that humor about sensitive topics seemed to be positively associated with the number of affiliative, bond-strengthening behaviors (e.g., eye contact, smiling) used in interactions between close friends.

Finally, although researchers have not specifically examined how frequently children engage in affiliative, aggressive, or self-defeating forms of spontaneous conversational humor within friendship dyads, there is some preliminary evidence that children with higher quality friendships use different types of spontaneous conversational humor than children with lower quality friendships. For example, in one observational study, McGhee (1980) noted that children who use aggressive forms of humor seem to be less socially skilled in social interactions with peers and friends, and that close friends tend to use friendly, positive forms of humor during social exchanges.

V. Research Gaps, Specific Aims, and Hypotheses

First and most importantly, scholars have not comprehensively studied the spontaneous conversational humor experiences of children. Extant developmental research has primarily focused on children's production and appreciation of scripted jokes and their cognitive and socio-emotional correlates; however, spontaneous conversational humor, which is an inherently social experience, is the most frequently occurring type of humor (Klein & Kuiper, 2006; Martin, 2007). To further our knowledge about children's spontaneous conversational humor, this dissertation explored observed affiliative, aggressive, and self-defeating spontaneous conversational humor in middle childhood.

Second, developmental theorists argue that humor is a form of intellectual play that facilitates development and strengthens interpersonal bonds between friends, and there is

preliminary empirical evidence that friends share different humor experiences than non-friends (Foot et al., 1977; Klein & Kuiper, 2006; Martin, 2007; McGhee, 1980); yet, researchers have not explored spontaneous conversational humor experiences and friendship quality between mutually nominated best friends. As a result, there are empirical questions that remain unanswered: Is the production of affiliative, aggressive, or self-defeating spontaneous conversational humor associated with positive or negative friendship quality in middle childhood? Is the overall dyadic (i.e., from both best friends) production of affiliative, aggressive, and self-defeating spontaneous conversational humor associated with positive or negative friendship quality during middle childhood? This study addressed these research questions.

Finally, although developmental scholars suggest that there are individual differences in children's experiences of humor (Martin & Kuiper, 1999; Ruch, 1998; Semrud-Clikeman & Glass, 2010), we have little understanding about whether dyad-level characteristics, such as the behavioral similarity of the dyad or the duration of a mutual friendship influences children's dyadic experiences of spontaneous conversational humor. This dissertation examined the direct relations between dyad-level variables and dyadic spontaneous conversational humor in middle childhood.

Hypothesis 1: Observable Spontaneous Conversational Humor in Middle Childhood

Theoretical and empirical evidence indicates that individuals engage in affiliative, aggressive, and self-defeating spontaneous conversational humor, but researchers have not explored whether all three types of humor are observable in middle childhood (Klein & Kuiper, 2006). The *first specific aim* of this study was to examine whether affiliative, aggressive, and/or

self-defeating spontaneous conversational humor was observable in interactions between best friends in middle childhood.

Hypothesis 1. It was hypothesized that all three types of spontaneous conversational humor would be observable in interactions between best friends in middle childhood.

Hypothesis 2: Spontaneous Conversational Humor and Friendship Quality in Middle Childhood

Developmental researchers suggest that both humor and friendship facilitate child development, but few have extensively studied the relation between spontaneous conversational humor and friendship quality in middle childhood (Klein & Kuiper, 2006; Semrud-Clikeman & Glass, 2010). The *second specific aim* of this dissertation was to determine whether observed affiliative, aggressive, and/or self-defeating spontaneous conversational humor was associated with positive or negative friendship quality in middle childhood.

Hypothesis 2a. Based on the empirically supported social affective goals of each type of humor (Klein & Kuiper, 2006; Martin et al., 2003; Semrud-Clikeman & Glass, 2010), it was expected that affiliative spontaneous conversational humor would be associated with higher (i.e., more positive) friendship quality in middle childhood.

Hypothesis 2b. Alternatively, it was hypothesized that aggressive and self-defeating spontaneous conversational humor would be associated with poorer (i.e., more negative) friendship quality in middle childhood.

Hypothesis 3: Dyadic Spontaneous Conversational Humor and Friendship Quality

Because spontaneous conversational humor is inherently derived from social interaction (Martin, 2007), the *third specific aim* of this research was to determine whether the interdependent nature of spontaneous conversational humor between two friends (i.e., dyadic

humor) was associated with positive or negative friendship quality in middle childhood. In particular, this study sought to determine whether there were actor-partner effects in children's spontaneous conversational humor and whether those effects made a significant contribution to how each child perceived the quality of the friendship.

Hypothesis 3a. It was hypothesized actor-partner affiliative, aggressive, and self-defeating spontaneous conversational humor would interact to influence positive and negative friendship quality. Thus, it was expected that dyadic spontaneous conversational humor would be associated with positive and negative friendship quality in middle childhood (Bukowski et al., 2009).

Hypothesis 3b. Based on the empirically supported social affective goals of each type of humor (Klein & Kuiper, 2006; Martin et al., 2003; Semrud-Clikeman & Glass, 2010), it was expected that partner affiliative spontaneous conversational humor would enhance the positive relation between actor affiliative spontaneous conversational humor and higher (i.e., more positive) friendship quality. It was also hypothesized that partner affiliative spontaneous conversational humor would buffer the negative relation between actor aggressive or actor self-defeating spontaneous conversational humor and poorer (i.e., more negative) friendship quality.

Hypothesis 3c. In contrast, it was expected that partner aggressive and partner self-defeating spontaneous conversational humor would be associated with a weaker positive relation between actor affiliative spontaneous conversational humor and higher (i.e., more positive) friendship quality. Partner aggressive and partner self-defeating spontaneous conversational humor were also hypothesized to exacerbate the negative relation between actor aggressive or actor self-defeating spontaneous conversational humor and poorer (i.e., more negative) friendship quality.

Hypothesis 4: Dyad-level Variables and Dyadic Spontaneous Conversational Humor

The *fourth specific aim* of this dissertation was to study whether dyad-level "individual" differences (i.e., behavioral similarity of pair, duration of best friendship) were associated with *dyadic* spontaneous conversational humor in middle childhood.

Hypothesis 4a. Drawing from literature which suggests that typical behavioral patterns (e.g., affect, mood) are related to the amount of humor children use and from research findings which indicate that close friends are more behaviorally similar than less close friends or non-friends (Bukowski et al, 2009; Ruch, 1998), it was expected that best friends with similar behavioral patterns (i.e., aggressive child and aggressive friend; withdrawn child and withdrawn friend; typically developing child and typically developing friend) would use spontaneous conversational humor more interdependently than best friends with different behavioral tendencies (e.g., aggressive child and withdrawn friend). It was hypothesized that behavioral similarity of the best friend dyad would be positively associated with the interrelatedness (i.e. dyadic nature) of affiliative, aggressive, and self-defeating spontaneous conversational humor in middle childhood.

Hypothesis 4b. Friends in more established (i.e., longer in duration) best friendships have had more opportunities to refine social perspective taking and share humor than children in more recently formed best friendships (Bariaud, 1989; Semrud-Clikeman & Glass, 2010). Moreover, best friends may tailor humor to one another because they are more familiar with what will evoke laughter within the dyad. It was expected that duration of best friendship would be positively associated with the interrelatedness (i.e. dyadic nature) of affiliative, aggressive, and self-defeating spontaneous conversational humor in middle childhood.

CHAPTER 3: METHOD

I. Participants

Data for the dissertation research were drawn from Dr. Kenneth H. Rubin's National Institute of Mental Health (NIMH)-funded project, "Friendship: The transitions to middle school and psychological adjustment" ("The Friendship Project," Grant No. 1R01MH58116). The sample was comprised 250 fifth graders (114 males) from eight diverse public elementary schools in the Washington D.C. metropolitan area. On average, fifth graders were 10.33 years old ($SD = .54$) at the time of the study. The sample was racially diverse, with approximately 55% of the participants identifying as Caucasian, 14% African American, 11% Latino/a, 9% Asian, and 11% unidentified or multiracial.

At their highest level of education, 62% of mothers of fifth graders had earned a university degree, 34% had completed some college, 15% had completed vocational school, and 9% had earned a high school diploma. Among fathers of fifth graders, 66% had earned a university degree at their highest level of education, while 35% had completed some college, 20% had completed vocational school, and 16% had earned a high school diploma. Approximately 70% of fifth graders' biological parents were still married to each other. The proportion of fifth graders receiving free or reduced lunch at the eight schools participating in the study ranged from 7% to 35%.

II. Procedure

After researchers obtained parental consent for children to participate in the Friendship Project (*consent rate* = 84%), data were collected in two phases. During *Phase I*, research staff visited elementary classrooms to collect peer ratings of participants' typical social behaviors and to gather nominations of fifth graders' mutual best friends.

Peer reports of classmates' typical behaviors were collected using the *ECP* (Wojslawowicz Bowker, Rubin, Burgess, Rose-Krasnor, & Booth-LaForce, 2006), an extended version of the Revised Class Play (*RCP*, Masten, Morison, & Pelligrini, 1985) (see Appendix A for *ECP* items). The children were instructed to pretend to be the directors of an imaginary class play and nominate their peers for a variety of roles. Children nominated one boy and one girl classmate for each role, but to correct for gender-stereotyping, only same-gender nominations for participating children were considered. Based on peer ratings of classmates' typical behaviors and a scoring system often used by aggression and shyness/social withdrawal researchers (e.g., Rubin, Chen, & Hymel, 1993), researchers classified fifth graders in the proposed study as aggressive, shy/withdrawn, or typically developing/normative. Aggressive children ($n = 58$) were those with *ECP* aggression ratings in the top 33% and shyness/withdrawal scores in the bottom 50% for their gender and grade. Shy/withdrawn children ($n = 56$) were those with *ECP* shyness/withdrawal ratings in the top 33% and aggressive scores in the bottom 50% for their gender and grade. Typically developing/normative children ($n = 136$) were those whose aggression and shyness/withdrawal scores were in the bottom 50% for their gender and grade, thereby controlling for aggression and withdrawal (Burgess, Wojslawowicz, Rubin, Rose-Krasnor, Booth-LaForce, 2006; Rubin et al., 1993).

To collect best friendship nominations, the researchers employed methodology by Bukowski and colleagues (1994). Research assistants administered a short survey asking students to rate their very best same-gender friend, second best same-gender friend, and three other good same-gender friends in the fifth grade at their school (see Appendix B). Questionnaires were completed in a group setting, either in the classroom or in larger school areas (e.g., gymnasium, cafeteria). When collecting peer ratings and best friend nominations, fifth graders were told that

the research team would keep all information confidential. Children were also instructed not to

share their ratings and nominations with other classmates. Children were considered "best

friends" if they nominated each other as their very best or second best same-gender friend.

After mutual best friends were identified in the classroom setting, the pair was invited to

the research laboratory to participate in the second phase of data collection. During *Phase II,*

fifth graders and their mutually nominated best friends completed a variety of survey measures,

including those of interest in the proposed study: *Friendship Quality Questionnaire* and the

Network of Relationships Inventory (Furman & Buhrmester, 1985; Parker & Asher, 1993a) (see

Appendices C and D). Friends were also asked several open-ended questions about their best

friendship, including the duration of the relationship.

After responding to survey and open-ended questions, dyads participated in five semi-

structured friendship tasks that were videotaped for observational coding. The tasks included

unstructured freeplay (10 minutes), a discussion of the dyad's best times together (5 minutes), a

discussion about how to solve a moral dilemma (10 minutes), a hands-on activity requiring the

dyad to recreate a knot or origami figure (10 minutes), and a discussion of what the pair would

do during an imaginary weekend together (10 minutes).

Preliminary observational coding revealed that spontaneous conversational humor was

most likely to occur during the best times, moral dilemma, and weekend friendship tasks. Thus,

these three segments (5 minutes, 10 minutes, and 10 minutes; 25 minutes total) were of interest

in the present study. See Appendix E for three friendship task interviewer instructions.

An observational coding scheme was adapted for this dissertation, and coders who were

blind to participants' ECP classification (i.e., aggressive, shy/withdrawn, typically developing)

used the humor coding scheme to classify affiliative, aggressive, and self-defeating spontaneous

conversational humor across friendship tasks. Social interaction tasks conducted in the research laboratory, such as the friendship tasks analyzed for this study, provide an ideal semi-structured context for the preliminary assessment of observed spontaneous conversational humor using a methodological observational coding approach (Bakeman & Gottman, 1997; Martin et al., 2003). Observational coding instructions are described in greater detail in the Measures section of this dissertation and in Appendix F.

III. Measures

  Positive friendship quality. The 40-item *Friendship Quality Questionnaire* (*FQQ*, Parker & Asher, 1993a) was used to measure self-perceptions about the quality of fifth graders' best friendship. Participants responded 1 = "*not true at all*" to 5 = "*really true*" to 40 survey items about their mutually nominated best friend. A global positive friendship quality score was calculated as an average response across all items. Additionally, since little research has been conducted about spontaneous conversational humor but scholars hypothesize that it may be differentially associated with the various dimensions of positive friendship quality (Martin et al., 2003), responses to items were also averaged across several subscales for consideration in this dissertation. These subscales included: Companionship (4 items, e.g., "*[My best friend] and I always sit together at lunch*"; = .59), validation and caring (10 items, e.g., "*[My best friend] always tells me that I'm good at things*"; = .86), help and guidance (10 items, e.g., *"[My best friend] and I always help each other with chores or other things a lot*"; = .88), intimate disclosure (6 items, e.g., "*[My best friend] and I talk about the things that make us sad*"; = .85), conflict resolution (3 items, e.g., "*[My best friend] and I make up easily when we fight*"; = .61), and absence of conflict and betrayal (7 items reverse coded, e.g., "*[My best friend] and I argue a lot*"; = .74).

The *Network of Relationships Inventory* (*NRI*, Furman & Burhmester, 1985) was used to assess the social support of best friendships. Using a rating scale of 1 = "*not at all*" to 5 = "*very much,*" fifth graders responded to a total of 21 survey questions (e.g., "*How sure are you that your relationship will continue in the years to come*?"; = .78) about the supportiveness of their mutually nominated best friend. Total social support was calculated as a mean score across all items.

Negative friendship quality. The *NRI* (Furman & Burhmester, 1985) was also used to assess negative interactions in best friendships. Fifth graders completed 6 survey items about the negative aspects their relationship with best friends (e.g., "*How much do you and your best friend get upset with each other or mad with each other*?"; = .64). Negative friendship quality was computed as the average response to these items.

Behavioral similarity of dyad. To determine the behavioral similarity of the dyad for the proposed study, the aforementioned aggressive, shy/withdrawn, and typically developing/normative *ECP* group classifications were utilized. Dyads comprised of two children with the same behavioral profile (e.g., aggressive friend and aggressive friend) were coded 0. Dyads comprising two children with different behavioral ratings (e.g., aggressive friend and shy/withdrawn friend) were coded 1. Out of 125 dyads in the proposed study ($n = 250$ participants), 10 dyads comprised two aggressive friends, 6 dyads had two shy/withdrawn friends, and 36 dyads comprised two typically developing friends. Thus, 52 total dyads were coded 0 for being behaviorally similar. A total of 73 dyads comprised friends with different behavioral profiles and were coded 1 for being behaviorally dissimilar: 10 dyads were comprised of aggressive with shy/withdrawn friends, 29 dyads of aggressive with typically developing friends, and 34 dyads of shy/withdrawn with typically developing friends.

Duration of friendship. During the laboratory visit, fifth graders were asked to report how long they had been best friends. Duration of friendship was a whole number corresponding to the number of years that children reported knowing each other.

Observed humor. To assess affiliative, aggressive, and self-defeating spontaneous conversational humor in this study, an observational humor coding taxonomy was adapted from coding strategies used in previous research investigations (e.g., Fabrizi & Pollio, 1987; Hay, 2000; Martin, 2007, Winterheld et al., 2013) and developed for this dissertation. The events-based coding scheme used spontaneous conversational humor categories outlined by Martin and colleagues (2003). More specifically, this study used observational coding to classify *affiliative, aggressive,* and *self-defeating* spontaneous conversational humor in children's interactions with best friends (Martin et al., 2003).

Identifying humor. In order to identify types of spontaneous conversational humor, it was necessary define a "spontaneous conversational humor event." Since humor between friends is a subjective experience that may not be perceived as funny to someone outside the dyad, this dissertation operationalized spontaneous conversational humor as a verbal humor event that garnered appreciation (i.e., laughter) from a social partner. Furthermore, similar to other studies of observed spontaneous conversational humor, a "successful" humor event was identified when one child elicited laughter from another child (Fabrizi & Pollio, 1987; Hay, 2000; Martin, 2007, Winterheld et al., 2013). Once a spontaneous conversational humor event was recognized, its verbal content was recorded and classified. Humor was categorized as *affiliative* (i.e., neutral, non-directed humor); *aggressive* (i.e., light-hearted teasing or sarcastic/hostile joking about friend or another third party), or *self-defeating* (i.e., humor about the self) (Martin et al., 2003). Videotaped best times, moral dilemma, and weekend friendship tasks were coded for: (1) the

occurrence of spontaneous conversational humor (i.e., humor event); (2) the initiator of humor; and (3) the type of humor (i.e., affiliative, aggressive, or self-defeating). Basic definitions and examples of spontaneous conversational humor are presented with coding instructions in Appendix F. Appendix G contains a sample coding sheet.

Training and reliability. To test the coding scheme for initial inter-observer reliability, the master coder (the author of this dissertation) and a research assistant completed training with transcripts of spontaneous conversational humor instances. Once achieving inter-rater reliability with transcribed spontaneous conversational humor events, the master coder and research assistant double-coded 10% of videotaped friendship tasks to ensure satisfactory reliability of the scheme when used to observe children's humor. Throughout all coding, coders were blind to participants' *ECP* classification (i.e., aggressive, shy/withdrawn, typically developing) and other identifiers.

Inter-observer reliability for this dissertation was calculated based on 20% of double-coded data (i.e., 25 of the 125 videotapes). The research assistant reached agreement with the master coder on spontaneous conversational humor event identification 85% of the time. From the identified spontaneous conversational humor events, Cohen's unweighted kappa indicated statistically significant inter-observer reliability for the initiator of humor ($\kappa = .98$, $p < .001$) and type of spontaneous conversational humor (affiliative, aggressive, and self-defeating spontaneous) per child ($\kappa = .91$, $p < .01$). The percentage of agreement about humorous events and level of statistical significance for Cohen's kappa were comparable to those from other investigations of observed humor (Fabrizi & Pollio, 1987; Martin, 2007; Winterheld et al., 2013). Cohen's kappa has been described as an appropriate method for assessing the reliability of observational data (Bakeman & Gottman, 1997).

Preliminary and final observed spontaneous conversational humor variables. This study was focused on children's spontaneous conversational humor generally; therefore, preliminary humor variables were calculated as the average number of affiliative, aggressive, and self-defeating humor that children produced *across* the three friendship tasks.

Because extant research indicates that humorous children often have more advanced verbal abilities than children who are not humorous (McGhee, 1989; Semrud-Clikeman & Glass, 2010), it was important to transform the preliminary observed humor values to account for children's verbal fluency. Using transcriptions of children's verbal speech during the first minute of the moral dilemma task, children's syntactic complexity was computed using the MLU (mean length utterance) command in the Child Language Data Exchange System (CHILDES) Computerized Language Analysis (CLAN) program (MacWhinney, 2000). Developmental scholars frequently use the CHILDES program and the MLU command to study syntactic complexity in relation to many aspects of children's language (MacWhinney, 2000). In our sample, children's mean length utterance ranged from 1.5 to 16 words ($M = 5.29$, $SD = 2.00$). To create the final observed humor variables used in this study, average values of affiliative, aggressive, and self-defeating humor were multiplied by children's mean length utterance score.

IV. Data Analytic Plan

Hypothesis 1. Descriptive statistics, including means and standard deviations, were used determine whether all three types of humor (affiliative, aggressive, self-defeating) were observable in interactions between best friends in middle childhood.

Hypotheses 2 and 3. A typical assumption of *non*-dyadic analysis is that participants in a sample are independent from one another; however, individuals in relationships often influence each other's thoughts and actions (Kenny et al., 2006). For example, each child's characteristics

and behaviors influence how both friends rate the quality of a friendship (Bukowski et al., 2009). For this reason, it is necessary to study the relation between spontaneous observational humor and friendship quality using a model that assumes *non-independence* between individuals in a friendship dyad. To test whether actor, partner, or actor-partner spontaneous conversational humor was related to friendship quality in this dissertation, statistical procedures were conducted in accordance with the Actor-Partner Interdependence Model (APIM) for dyadic data analysis (Kenny et al., 2006), which has been used by other researchers who study humor (e.g., Hall 2010; Winterheld et al., 2013). The APIM treats the dyad as a non-independent unit of analysis while exploring the individual effects of both partners in the dyad on an outcome variable reported by both children.

To prepare for APIM analyses, children in each dyad were randomly assigned to the actor *or* partner groups, meaning that each dyad contained one actor and one partner child. Data were entered into SPSS and structured in pairwise file format such that each dyad occupied two rows in the dataset. Each row contained an individual child's participant ID and scores on all measures of the study (actor independent and dependent variables) in addition to their friend's scores on independent variables (partner independent variables). Specifically, each record in the database contained child participant ID, actor spontaneous conversational humor scores, actor friendship quality scores, and partner spontaneous conversational humor scores. Friends were paired together in the dataset using a "DyadID" variable.

APIM multi-level modeling was used to estimate the effect of spontaneous conversational humor on friendship quality for both friends and to produce partial intraclass correlations (ICCs) for each set of statistical analyses. Partial ICCs are conceptualized as the proportion of model variance resulting from the non-independent dyadic relationship *after*

partialing out the effects of the predictor variables (Kenny et al., 2006). Compared to full intra-

class correlations often used to compute non-independence in outcome variables within a dyad,

partial ICCs provide a stronger measure of the non-independence of data because partial ICCs

ensure that the similarity in friendship quality ratings are not the result of a statistical pseudo-

non-independence that can be caused by the effect of the predictor variables on the outcome

variables (Kenny et al., 2006).

The Compound Symmetry Correlation Metric of the SPSS Linear Mixed Effects

Modeling command was used to test the relation between spontaneous conversational humor and

friendship quality and to calculate partial ICCs for each measure of friendship quality. This

approach is appropriate for a sample of this size, which is not large enough to undergo complex

structural equation or hierarchical linear modeling with the number of variables being assessed in

this dissertation (Kenny et al., 2006).

Best friend dyads were considered *indistinguishable*, meaning that no conceptually or

empirically supported variables (i.e., gender, ethnicity) were preliminarily associated with

differentiated actor and partner effects on friendship quality (Cook & Kenny, 2005; Kenny et al.,

2006). Thus, the statistical models used to test Hypotheses 2 and 3 reflected APIM associations

considered to be statistically identical for indistinguishable dyads (Cook & Kenny, 2005; Kenny

et al., 2006): The relation between actor spontaneous conversational humor and actor-rated

friendship quality was identical to the relation between partner spontaneous conversational

humor and partner-rated friendship quality, and the relation between actor spontaneous

conversational humor and partner-rated friendship quality was identical to the relation between

partner spontaneous conversational humor and actor-rated friendship quality (Cook & Kenny,

2005). In APIM models with indistinguishable dyads such as those used in analyses for this

dissertation, these identical relations dictate the testing of all actor and partner spontaneous conversational humor direct effects on *actor*-rated friendship quality (Cook & Kenny, 2005; Kenny et al., 2006). Although only actor outcome variables were assessed, APIM analyses for indistinguishable dyads statistically account for both actor and partner contributions to friendship quality through the analysis of actor and partner direct effects; APIM second-level repeated effects variables indicating best friends' membership in a specific dyad; and correlated actor and partner dependent variable error terms (Cook & Kenny, 2005; Kenny et al., 2006).

In the APIMs used in this dissertation, spontaneous conversational humor variables were included as first-level fixed effect variables and DyadID was a second-level repeated effects variable. DyadID was classified as a repeated effect to allow a correlation between error terms of actor and partner friendship quality, reflecting the assumed non-independence in actor and partner ratings of friendship quality and allowing for both positive and negative (i.e., within- and between-dyad) non-independence (Kenny et al., 2006). As recommended by dyadic data analysis researchers, predictor variables were centered around the grand mean (mean of all individuals in the sample) to minimize multicollinearity between predictor variables (Kenny et al., 2006).

To test Hypotheses 2 and 3, several main effects and interactions were examined using APIM. First, direct effects of *actor* affiliative, aggressive, and self-defeating spontaneous conversational humor on actor-rated positive and negative friendship quality were assessed. Second, direct effects of *partner* affiliative, aggressive, and self-defeating spontaneous conversational humor on actor-rated positive and negative friendship quality were examined. Finally, using partner spontaneous conversational humor as the moderator variable, the interactive relation between actor x partner spontaneous conversational humor and actor-rated positive and negative friendship quality was assessed. Additional information about the specific

variables entered into each model will be presented in the Results section. See Figure 1 for the APIM used in this dissertation.

Hypothesis 4. Descriptive statistics and multiple linear regression analyses were used to assess whether behavioral similarity of the dyad or duration of the friendship was related to the interrelatedness (i.e., dyadic nature) of actor-partner spontaneous conversational humor. Behavioral similarity of the dyad and duration of friendship were independent variables in multiple linear regression analyses, and actor-partner interactions of spontaneous conversational humor were dependent variables. Detailed information about the variables entered into each model will be presented in the Results section of this dissertation.

CHAPTER 4: RESULTS

I. Hypothesis 1: Observable Spontaneous Conversational Humor in Middle Childhood

Descriptive statistics revealed that all three types of spontaneous conversational humor (affiliative, aggressive, and self-defeating) were observable in interactions between best friends in middle childhood (Hypothesis 1). Across all three friendship tasks, the sample collectively produced 2063 affiliative, 1012 aggressive, and 463 self-defeating spontaneous conversational humor instances. For this dissertation, children's spontaneous conversational humor production was averaged across the three friendship tasks. On *average*, children produced 2.75 affiliative ($SD = 2.31$; *range = 0 – 15*), 1.35 aggressive ($SD = 1.37$; *range = 0 - 11.33*), and .62 self-defeating ($SD = .76$; *range = 0 - 3.67*) spontaneous conversational humor instances across the three friendship tasks. Tables 1, 2, and 3 provide examples of affiliative, aggressive, and self-defeating spontaneous conversational humor produced by children in this study. Taken together, results from descriptive statistics provide support for Hypothesis 1.

Skewness and kurtosis normality statistics for descriptive (i.e., preliminary) observed spontaneous conversational humor variables were 1.62 ($SE = .15$) and 3.85 ($SE = .31$) for affiliative spontaneous conversational humor; 2.39 ($SE = .15$) and 11.46 ($SE = .31$) for aggressive spontaneous conversational humor; and 1.70 ($SE = .15$) and 2.82 ($SE = .31$) for self-defeating spontaneous conversational humor. Normality statistics indicated that data were positively skewed and the distribution of data peaked more sharply than a normal Gaussian distribution, particularly data related to aggressive spontaneous conversational production (Cohen, Cohen, West, & Aiken, 2003). In sum, normality statistics provided evidence that children in this sample produced slightly higher levels of spontaneous conversational humor than would be expected in a normal population of fifth graders.

Preliminary one-way ANOVA analyses indicated that affiliative, aggressive, and self-defeating spontaneous conversational humor production did not vary as a function or dyad gender or ethnic composition; however, it is worth noting that the limited number of dyads in this study may have contributed to statistically non-significant group differences in affiliative, aggressive, and/or self-defeating spontaneous conversational humor production (Cohen et al., 2003).

II. Hypotheses 2 and 3: Spontaneous Conversational Humor and Friendship Quality in Middle Childhood

Prior to conducting statistical analyses about the relation between spontaneous conversational humor and positive and negative friendship quality in middle childhood, spontaneous conversational humor variables were transformed to account for children's verbal fluency (see Preliminary and Final Observed Humor Variable heading in the Method section). Grand means and standard deviations of the transformed (i.e., final) spontaneous conversational humor and friendship quality variables are presented in Table 4. Skewness and kurtosis normality statistics for transformed spontaneous conversational humor variables were 1.36 ($SE =$ .15) and 2.23 ($SE = .31$) for affiliative spontaneous conversational humor, 1.96 ($SE = .15$) and 5.69 ($SE = .31$) for aggressive spontaneous conversational humor, and 1.69 ($SE = .15$) and 2.76 ($SE = .31$) for self-defeating spontaneous conversational humor. Normality statistics indicated that transformed spontaneous conversational humor data were more normally distributed compared to the preliminary observed spontaneous conversational humor variables, though the distribution of data for aggressive spontaneous conversational humor was still slightly positively skewed and more sharply peaked than a normal Gaussian distribution (Cohen et al., 2003).

To test Hypothesis 2 and 3 using APIM analyses, children in each dyad were randomly assigned to the actor *or* partner groups, meaning that each dyad contained one actor and one partner child. Data were structured in pairwise file format such that each dyad occupied two rows in the dataset. Each row contained an individual child's participant ID and scores on all measures of the study (actor variables) in addition to their friend's scores on independent variables (partner variables). Bivariate correlations were conducted within and between actor and partner spontaneous conversational humor and within and between actor and partner positive and negative friendship quality (see Tables 5 and 6). All actor-actor (i.e., within actor) correlations of spontaneous conversational humor were positively significantly interrelated. Two actor-partner correlations were positively significantly correlated: The correlation between actor and partner affiliative spontaneous conversational humor ($r = .14$, $p = .03$) and between actor and partner self-defeating spontaneous conversational humor ($r = .25$, $p < .001$). Nearly all actor-actor correlations of positive friendship quality were positively interrelated, and most actor-actor positive friendship quality correlations with negative friendship quality were negatively interrelated. Several actor-partner correlations of friendship quality were significantly interrelated, but many actor-partner correlations were weakly or not statistically significantly correlated. The correlation matrices for spontaneous conversational humor and friendship quality were statistically ideal for APIM because actor and partner ratings were not so strongly correlated that results became confounded (Kenny et al., 2006).

Statistical Modeling. Linear Mixed Effects Modeling was used to obtain partial intraclass correlations (ICCs) and to test direct and interactive effects of the APIM used in this dissertation (see Figure 1). Partial ICCs are an indicator of non-independent data and are

described as the proportion of model variance resulting from the non-independent dyadic relationship after partialing out the effects of the predictor variables (Kenny et al., 2006). .

For this dissertation, best friend dyads were considered *indistinguishable*, meaning that no conceptually or empirically supported variables (i.e., gender, ethnicity) were preliminarily associated with differentiated actor and partner effects on friendship quality (Cook & Kenny, 2005; Kenny et al., 2006). This was further supported by the correlation matrices for spontaneous conversational humor and friendship quality, which were statistically ideal for APIM because actor and partner ratings were not so strongly correlated that results became confounded, and by the partial ICCs calculated for each statistical model (see Results section under Partial ICCs), which were primarily positive values, indicating between (i.e., actor-partner indistinguishable) instead of within (i.e., actor-partner distinguishable) dyad differences in friendship quality (Kenny et al., 2006). As a result, APIM analyses reflected associations that statistically identical for indistinguishable dyads, meaning that the relation between actor observed spontaneous conversational humor and actor-rated friendship quality was identical to the relation between partner observed spontaneous conversational humor and partner-rated friendship quality (Cook & Kenny, 2005; Kenny et al., 2006). Similarly, the relation between actor spontaneous conversational humor and partner-rated friendship quality was identical to the relation between partner spontaneous conversational humor and actor-rated friendship quality (Cook & Kenny, 2005; Kenny et al., 2006). Thus, APIM analyses examined the direct effects of *actor* spontaneous conversational humor on *actor*-rated positive and negative friendship quality and the direct effects of *partner* spontaneous conversational humor on *actor*-rated friendship quality. Although only actor outcome variables were assessed, APIM analyses for indistinguishable dyads statistically account for both actor and partner contributions to friendship

quality through the analysis of actor and partner direct effects; APIM second-level repeated effects variables indicating best friends' membership in a specific dyad; and correlated actor and partner dependent variable error terms (Cook & Kenny, 2005; Kenny et al., 2006). In the APIM analyses used in this dissertation, actor and partner spontaneous conversational humor variables were included as first-level fixed effect predictor variables, and DyadID was a second-level repeated effects variable. Specific first-level spontaneous conversational humor variables included: Actor affiliative, partner affiliative, actor aggressive, partner aggressive, actor self-defeating, and partner self-defeating humor.

APIM analyses also assessed the interactive *actor-partner* effects on *actor*-rated positive and negative friendship quality. Actor-partner interaction terms were the product of the existing actor and partner spontaneous conversational humor variables (Kenny et al., 2006). Interaction terms were also first-level variables. The nine spontaneous conversational humor interaction terms were: Actor affiliative x partner affiliative; actor affiliative x partner aggressive; actor affiliative x partner self-defeating; actor aggressive x partner affiliative; actor aggressive x partner aggressive; actor aggressive x partner self-defeating; actor self-defeating x partner affiliative; actor self-defeating x partner aggressive; and actor self-defeating x partner self-defeating humor. In each interaction, partner spontaneous conversational humor served as the moderator variable (Kenny et al., 2006) (see Figure 1).

Outcome variables for this dissertation were actor (i.e., statistically identical to partner) ratings of friendship quality from the *FQQ* and *NRI*. Nine sets of analyses were run to correspond with each subscale from the *FQQ* (7 subscales: companionship; validation and caring; help and guidance; intimate disclosure; conflict resolution; absence of conflict and betrayal; and total positive friendship) and the *NRI* (2 subscales: social support and negative

interactions). Prior to APIM analyses, all predictor variables were centered around the grand mean to minimize multicollinearity between predictor variables (Kenny et al., 2006). The total positive friendship variable from the *FQQ* and social support variable from the *NRI* were not aggregated because this dissertation was concerned with whether spontaneous conversational humor was differentially associated with various dimensions of positive friendship quality (Martin et al., 2003).

Partial ICCs. After partialing out the effects of predictor variables, the proportion of model variance resulting from the non-independent dyadic best friend relationship was statistically significant for models with the following outcome variables: Companionship (*partial ICC* = .57, *p* < .001), validation and caring (*partial ICC* = .19, *p* < .05), help and guidance (*partial ICC* = .25, *p* < .01), intimate disclosure (*partial ICC* = .31, *p* < .001), absence of conflict and betrayal (*partial ICC* = .23, *p* < .05), and total positive friendship quality (*partial ICC* = .29, *p* < .01). Partial ICCs were not statistically significant for models assessing conflict resolution (*partial ICC* = .05, *p* = .569), social support (*partial ICC* = .12, *p* = .458), and negative interactions (*partial ICC* = -.01, *p* = .964). Partial ICCs indicated that for many measures of friendship quality used in this dissertation, data were non-independent (i.e., dyadic) above and beyond the direct and interactive actor-partner effects tested in the APIM. Thus, partial ICCs provided additional empirical rationale for using APIM analyses in the current dissertation and, because ICCs were primarily positive values which indicated between- instead of within-dyad differences in friendship quality, partial ICCs also supported the use of APIM analyses for indistinguishable dyads (Kenny et al., 2006).

Hypothesis 2. It was hypothesized that affiliative spontaneous conversational humor would be associated with higher (i.e., more positive) friendship quality in middle childhood,

while aggressive and self-defeating spontaneous conversational humor would be associated with poorer (i.e., more negative) friendship quality in middle childhood (Hypotheses 2a and 2b).

Positive friendship quality. Results of APIM analyses revealed a statistically significant positive relation between *actor* production of *affiliative* spontaneous conversational humor and actor-rated *absence of conflict and betrayal* ($b = .11$, $p = .019$). There were also statistically significant positive relations between *actor* production of *self-defeating* spontaneous conversational humor and actor-rated *intimate disclosure ($b = .18$, $p = .011$)* and *total positive friendship quality* ($b = .10$, $p = .049$).

Findings indicated that *partner* production of *self-defeating* spontaneous conversational humor was positively associated with actor-rated *companionship* ($b = .11$, $p = .049$). The positive relation between *partner* production of *self-defeating* spontaneous conversational humor and actor-rated *help and guidance* also approached statistical significance ($b = .12$, $p = .054$). No other statistically significant direct relations between actor or partner spontaneous conversational humor and actor-rated positive friendship quality emerged. See Table 7.

Negative friendship quality. Results of APIM analyses revealed a statistically significant negative relation between *actor* production of *affiliative* spontaneous conversational humor and actor-rated *negative interactions* ($b = -.13$, $p = .019$) and a statistically significant positive relation between *actor* production of *aggressive* spontaneous conversational humor and actor-rated *negative interactions* ($b = .12$, $p = .032$). No other statistically significant direct relations between actor or partner spontaneous conversational humor and actor-rated negative friendship quality emerged. See Table 7.

Overall, findings from APIM analyses provided support for Hypothesis 2a and mixed support for Hypothesis 2b; it was unexpected that actor and partner self-defeating spontaneous

conversational humor would be associated with higher (i.e., more positive) friendship quality instead of poorer (i.e., more negative) friendship quality. Results will be reviewed in greater detail in the Discussion section.

      Hypothesis 3. It was hypothesized actor-partner affiliative, aggressive, and self-defeating spontaneous conversational humor would interact to influence positive and negative friendship quality. Thus, it was expected that dyadic spontaneous conversational humor would be associated with positive and negative friendship quality in middle childhood (Hypothesis 3a). Based on the empirically supported social affective goals of each type of humor (Klein & Kuiper, 2006; Martin et al., 2003; Semrud-Clikeman & Glass, 2010), it was also anticipated that partner affiliative spontaneous conversational humor would enhance the positive relation between actor affiliative spontaneous conversational humor and higher (i.e., more positive) friendship quality, while partner affiliative spontaneous conversational humor would buffer the negative relation between actor aggressive or actor self-defeating spontaneous conversational humor and poorer (i.e., more negative) friendship quality (Hypothesis 3b). In contrast, it was expected that partner aggressive and partner self-defeating spontaneous conversational humor would be associated with a weaker positive relation between actor affiliative spontaneous conversational humor and higher (i.e., more positive) friendship quality. Partner aggressive and partner self-defeating spontaneous conversational humor were also hypothesized to exacerbate the negative relation between actor aggressive or actor self-defeating spontaneous conversational humor and poorer (i.e., more negative) friendship quality (Hypothesis 3c).

      Positive friendship quality. Findings from APIM analyses indicated that *actor aggressive* x *partner self-defeating* spontaneous conversational humor was negatively related to actor-rated *companionship* ($b = -.23$, $p = .007$). See Table 7. To probe this interaction through examination of

simple slopes, values for partner spontaneous conversational humor were selected to correspond to one standard deviation above the mean (high) and one standard deviation below the mean (low). High and low values of partner spontaneous conversational humor were compared to the actor spontaneous conversational humor variable and its association with the outcome variable. The simple slope between actor aggressive spontaneous conversational humor and actor-rated companionship was not significantly different from zero for partners low in self-defeating spontaneous conversational humor ($\beta = .16$, $p = .113$), but the slope was significantly different from zero for partners *high* in self-defeating spontaneous conversational humor ($\beta = -.24$, $p = .016$). Actor aggressive spontaneous conversational humor was associated with *decreasing* companionship when partner self-defeating spontaneous conversational humor was high. See Figure 2. No other actor-partner interactions were significantly related to actor-rated positive friendship quality.

 Negative friendship quality. Results of APIM analyses revealed three statistically significant interactions between actor and partner spontaneous conversational humor and actor-rated negative friendship quality: *Actor affiliative* x *partner self-defeating* spontaneous conversational humor was significantly negatively related to actor-rated *negative interactions* ($b = -.23$, $p = .011$); *actor aggressive* x *partner self-defeating* spontaneous conversational humor was positively related to actor-rated *negative interactions* ($b = .16$, $p = .028$); and *aggressive actor* x *aggressive partner* spontaneous conversational humor was negatively related to actor-rated *negative interactions* ($b = -.15$, $p = .011$). Additionally, the positive relation between *actor affiliative* x *partner affiliative* spontaneous conversational humor and actor-rated *negative interactions* approached statistical significance ($b = .20$, $p = .52$). No additional actor-partner interactions were statistically related to actor-rated negative friendship quality. See Table 7.

Simple slope analyses were used to probe these four statistically significant interactions. Values for partner spontaneous conversational humor were selected to correspond to one standard deviation above the mean (high) and one standard deviation below the mean (low). High and low values of partner spontaneous conversational humor were compared to the actor spontaneous conversational humor variable and its association with the outcome variable.

The simple slope between actor affiliative spontaneous conversational humor and actor-rated negative interactions was not significantly different from zero for partners low in self-defeating spontaneous conversational humor ($\beta = .10$, $p = .381$), but the slope was significantly different from zero for partners *high* in self-defeating spontaneous conversational humor ($\beta = -.36$, $p < .001$). Actor affiliative spontaneous conversational humor was associated with *decreasing* negative interactions when partner self-defeating spontaneous conversational humor was high. See Figure 3.

The simple slope between actor aggressive spontaneous conversational humor and actor-rated negative interactions was not significantly different from zero for partners low in self-defeating spontaneous conversational humor ($\beta = -.04$, $p = .653$), but the slope was significantly different from zero for partners *high* in self-defeating spontaneous conversational humor ($\beta = .28$, $p = .002$). Actor aggressive spontaneous conversational humor was associated with *increasing* negative interactions when partner self-defeating spontaneous conversational humor was high. See Figure 4.

The simple slope between actor aggressive spontaneous conversational humor and actor-rated negative interactions was not significantly different from zero for partners high in aggressive spontaneous conversational humor ($\beta = -.02$, $p = .783$), but the slope was significantly different from zero for partners *low* in aggressive spontaneous conversational

humor ($\beta = .27$, $p = .001$). Actor aggressive spontaneous conversational humor was associated with *increasing* negative interactions when partner aggressive spontaneous conversational humor was low. See Figure 5.

Finally, the simple slope between actor affiliative spontaneous conversational humor and actor-rated negative interactions was not significantly different from zero for partners high in affiliative spontaneous conversational humor ($\beta = .06$, $p = .625$), but the slope was significantly different from zero for partners *low* in affiliative spontaneous conversational humor ($\beta = -.32$, $p = .003$). Actor affiliative spontaneous conversational humor was associated with *decreasing* negative interactions when partner affiliative spontaneous conversational humor was low. See Figure 6.

Results of APIM analyses provided support for Hypothesis 3a but not for Hypothesis 3b. Findings provided mixed support for Hypothesis 3c. Findings will be reviewed in greater detail in the Discussion section.

III. Hypothesis 4: Dyad-level Variables and Dyadic Spontaneous Conversational Humor

It was expected that behavioral similarity of the dyad and duration of the friendship would be positively associated with the interrelatedness (i.e. dyadic nature) of affiliative, aggressive, and self-defeating spontaneous conversational humor in middle childhood (Hypotheses 4a and 4b).

Descriptive statistics and multiple linear regression analyses were used to test Hypothesis 4. A total of 52 dyads were behaviorally similar (73 dyads behaviorally dissimilar) (see Method section), and on average, best friends reported knowing each other for 3.08 years ($SD = 2.05$, *range* = 0 to 9 years). Bivariate correlations between behavioral similarity of the dyad, friendship duration, and spontaneous conversational humor variables were conducted. Behavioral similarity

of the dyad was positively associated with friendship duration ($r = .21$, $p = .001$). Neither behavioral similarity of the dyad nor friendship duration was significantly correlated with affiliative, aggressive, or self-defeating spontaneous conversational humor. See Table 8.

Multiple linear regressions analyses were conducted using behavioral similarity of the dyad and friendship duration as the two independent variables in each model. One actor-partner spontaneous conversational humor interaction term served as the dependent variable for each set of analyses. The nine spontaneous conversational humor dependent variables were: Actor affiliative x partner affiliative; actor affiliative x partner aggressive; actor affiliative x partner self-defeating; actor aggressive x partner affiliative; actor aggressive x partner aggressive; actor aggressive x partner self-defeating; actor self-defeating x partner affiliative; actor self-defeating x partner aggressive; and actor self-defeating x partner self-defeating humor.

Linear multiple regression analyses revealed one statistically significant direct effect of *friendship duration* on the dyadic measure of *aggressive actor* x *aggressive partner* spontaneous conversational humor. Friendship duration was negatively associated with aggressive actor x aggressive partner spontaneous conversational humor ($= -4.53$, $t = -3.49$, $p = .001$), meaning that the longer best friends reported knowing each other, the less they used interrelated (i.e., dyadic) aggressive spontaneous conversational humor. No other statistically significant findings emerged. APIM analyses from Hypotheses 2 and 3 were re-run with friendship duration included in each model; however, friendship duration was not significantly related to any measure of positive or negative friendship quality, and all statistically significant findings were consistent with those previously reported in this dissertation. Thus, for the sake of model parsimony, the original models used for APIM analyses (presented under headings for Hypotheses 2 and 3) were retained. Overall, findings from statistical analyses provided weak support for Hypothesis 4.

CHAPTER 5: DISCUSSION

The purpose of this study was to explore whether affiliative, aggressive, and self-defeating spontaneous conversational humor were observable in interactions between best friends in middle childhood and to examine the relation between affiliative, aggressive, self-defeating, and dyadic spontaneous conversational humor and positive and negative friendship quality in middle childhood. Another purpose of this study was to determine whether dyad-level "individual differences" were associated with the dyadic production of spontaneous conversational humor in middle childhood.

Results provide evidence that all three types of spontaneous conversational humor (affiliative, aggressive, self-defeating) are observable in interactions between best friends in middle childhood, thereby reinforcing developmental researchers' assertions that by middle childhood, children have the cognitive abilities and playful, social-affective perspective taking skills necessary for producing and understanding spontaneous conversational humor (Bariaud, 1989; Cunningham, 2005; McGhee, 1989).

Findings from this study suggest that affiliative and self-defeating spontaneous conversational humor are positively associated with positive friendship quality in middle childhood, whereas aggressive spontaneous conversational humor is positively associated with negative friendship quality. In addition, results suggest that best friends' dyadic (actor x partner) spontaneous conversational humor is significantly associated with both positive and negative friendship quality in middle childhood. More specifically, partners' production of low levels of affiliative spontaneous conversational and high levels of self-defeating spontaneous conversational humor is beneficial from actors' perspective of the friendship if actors produce high levels of affiliative spontaneous conversational humor; however, partners' production of

low levels of aggressive spontaneous conversational humor and high levels of self-defeating spontaneous humor are detrimental from actors' perspective of the friendship if actors produce high levels of aggressive spontaneous conversational humor. Given the humor and social relationships literature that suggests that self-defeating spontaneous conversational humor typically facilitates negative interactions and developmental outcomes (Führ, 2002; Klein & Kuiper, 2006; Martin et al., 2003) it is noteworthy that self-defeating spontaneous conversational humor contributed to improved relationship quality between some best friends in this study.

Finally, results from this dissertation reveal that children in long-standing best friendships are less likely to engage in interrelated (i.e. dyadic) aggressive spontaneous conversational humor than children in newer best friendships. Although not in line with the research hypotheses of this study, this finding does support developmental research about the gradual reduction in aggressive behaviors between best friends over time (Bowker, Rubin, Rose-Krasnor, Booth-LaForce, 2007; Sullivan, 1953).

In the following text, each finding is discussed in relation to the developmental literature about humor and friendship in middle childhood. Limitations of this study and directions for future research are also discussed.

I. Hypothesis 1: Observable Spontaneous Conversational Humor in Middle Childhood

This dissertation is the first study to explore whether affiliative, aggressive, and/or self-defeating spontaneous conversational humor are observable in middle childhood (Klein & Kuiper, 2006). Findings support Hypothesis 1, showcasing that affiliative, aggressive, and self-defeating spontaneous conversational humor can be observed during interactions between best friends in middle childhood. Across 125 dyads, children produced over 3,500 instances of spontaneous conversational humor about a variety of topics. Affiliative spontaneous

conversational humor was observed frequently during interactions between best friends, lending support to previous studies, which have shown that affiliative spontaneous conversational humor is typically most prevalent in close relationships (Hay, 2000; Klein & Kuiper, 2006; Martin et al., 2003; Winterheld et al., 2013). In addition to producing affiliative spontaneous conversational humor, best friends generated numerous instances of aggressive and self-defeating spontaneous conversational humor. Extant research has documented that most individuals use similarly varied types of spontaneous conversational humor during social exchanges (Galloway, 2010; Klein &Kuiper, 2006; Winterheld et al., 2013).

Results provide information about children's experiences of spontaneous conversational humor and begin to shed light on the developmental trajectory of spontaneous conversational humor. In the past, researchers have identified affiliative, aggressive, and self-defeating spontaneous conversational humor in adolescents and adults (Martin, 2007). Findings from this dissertation reveal that spontaneous conversational humor is observable in middle childhood as well. Furthermore, due to the methodological constraints associated with anticipating unpredictable spontaneous conversational humor, researchers do not typically conduct systematic investigations of observed dialogue with individuals of *any* age (Martin, 2007). Thus, results of this study contribute to the body of literature uniquely derived from observational studies about spontaneous conversational humor across the lifespan, further extending our understanding of the construct beyond what has been discovered using less structured ethnographic studies or survey reports of humorous tendencies (e.g., Bergen, 1998; Cameron et al., 2010; Manke, 1998; McGhee, 1980; Prasnos & Tittler, 1981; Sanford & Elder, 1984; Sherman, 1988; Warnars-Kleverlaan et al., 1996).

From a developmental perspective, observations of affiliative, aggressive, and self-defeating spontaneous conversational humor in middle childhood seem to support incongruity and complicity theories of humor. Both incongruity and complicity theories suggest that by middle childhood, children have developed the cognitive abilities necessary for playfully integrating environmental stimuli into schemas that do not reflect reality (McGhee, 1979; Bariaud, 1989). Specifically, these theories assert that by middle childhood, typically developing children are mentally and verbally capable of producing and understanding spur-of-the-moment, incongruous statements and enjoying abstract conversational humor. Indeed, many examples of spontaneous conversational humor produced by children in this study were non-literal statements that seemed to garner amusement because the utterances did not reflect reality (see Tables 1-3; e.g., "*Then we can have lunch … in a tree!*"; "*[Let's] go to Hollywood for like… 3 hours.*"; "*I'm a pickle. That's what I am!*").

Findings seem to further support the socio-affective tenets of complicity theory, which states that by middle childhood, typically developing children possess the social perspective taking skills necessary for enjoying spontaneous conversational humor; that children can detect the playful (i.e., safe) intentions of social partners (Bariaud, 1989; Semrud-Clikeman & Glass, 2010). In this study, laughter was the primary indicator that children understood the humorous intentions of their best friends; however, many instances of spontaneous conversational humor also seemed to be "inside jokes" or statements that might not be perceived as playful outside of the dyad, indicating that children had some understanding of the light-hearted intentions of their best friends (see Tables 1-3; e.g., "*Do you like to argue?*"; "*That was pathetic that we thought those were eggs!*").

II. Hypotheses 2 and 3: Spontaneous Conversational Humor and Friendship Quality in Middle Childhood

    Affiliative Spontaneous Conversational Humor. There were several direct and interactive effects of actor and partner spontaneous conversational humor production on positive and negative friendship quality. In support of the literature, actor affiliative spontaneous conversational humor was *positively* associated with actor-rated absence of conflict and betrayal but *negatively* related to actor-rated negative interactions. The primary goal of affiliative humor is to improve social relationships by increasing others' feelings of well-being and reducing interpersonal tensions (Martin et al., 2003), so it is logical that children who use more affiliative spontaneous conversational humor report less conflict, betrayal, and negative interactions. An empirical explanation for this association involves a child's emotional awareness of the dynamics of the friendship (Klein & Kuiper, 2006; McGhee, 1989). Successful use of affiliative conversational humor requires children to understand what will elicit feelings of well-being in their best friend; therefore, it may be that actors who use affiliative spontaneous conversational humor are also acutely aware of what would upset their friend and, as a result, purposely censor their own negative behaviors.

    Interestingly, partner affiliative spontaneous conversational humor was *not* associated with actor-rated positive or negative friendship quality. Discrepancies in actor and partner effects on friendship quality can occur for a variety of reasons, most typically because factors such as the individual characteristics of both children, can affect children's own ratings of friendship quality or their partner's rating of friendship quality (Bukowski et al., 2009; Hinde & Stevenson-Hinde, 1976; Kenny et al., 2006; Rubin et al., in press). Differences can also arise because surveys are subjective measures of friendship quality and individuals may interpret items

differently (Parker & Asher, 1993a). At the same time, the direct effect of actor spontaneous conversational humor and actor-rated friendship quality may pertain to actors' feelings about the self. For example, Bell and colleagues (1986) found that individuals who frequently initiate humor were more likely to rate *themselves* as having better social competence and control over emotions than individuals who did not frequently engage in humor. Thus, children who initiate affiliative spontaneous conversational humor may positively rate their own social proficiencies, perceiving themselves as in-tune with the friendship and able to regulate behaviors that could contribute to a poorer quality friendship. Alternatively, affiliative spontaneous conversational humor may provide a gauge of a child's commitment to the friendship or to a particular quality of the friendship (e.g., companionship) (Schneider & Tessier, 2007; Simpkins, Parke, Flyr, & Wild, 2006). In this sense, actors who use more prosocial forms of humor are less inclined to "undo" their own supportive efforts by engaging in conflict, betrayal, or negative interactions.

To complicate the picture further, results revealed that actors who used higher levels of affiliative spontaneous conversational humor reported fewer negative interactions when partners engaged in lower levels of affiliative spontaneous conversational humor. In this case, it may be "too much of a good thing" when both partners engage in highly affiliative spontaneous conversational humor. For instance, in one actor-partner study about humor, Winterheld and colleagues (2013) found that adults did not like when social partners produced similar amounts of the type of humor they most frequently used themselves. Moreover, developmental researchers suggest that most healthy friendships have both positive and negative features, not just an abundance of positive qualities (Berndt & McCandless, 2009; Bukowski et al., 2009). In fact, disagreements occur more often between friends than non-friends, and it is argued that some negative exchanges are not an indicator of a poor quality friendship (Laursen & Pursell, 2009).

For example, individuals who engage in conflict within close relationships tend to produce less negative affect than those in less close relationships (Murphy & Eisenberg, 2002). Similarly, lower levels of partner affiliative spontaneous humor may not be detrimental to the dyad when produced in combination with high levels of actor affiliative spontaneous conversational humor. Affiliative behaviors are typically tied to feelings of positive and closeness but, as demonstrated by the present study, affiliative spontaneous conversational humor may be most beneficial when produced in *complementary* levels by best friends (e.g., Parsons, 1951).

Findings about affiliative spontaneous conversational humor support the empirically driven hypotheses of this dissertation; however, results do provide new evidence about these relations in middle childhood and between mutual best friends. Middle childhood is an important time for engaging in relationship-building humor behaviors with friends because friendships meet children's primary need for intimate relationships at this age (Sullivan, 1953). Numerous studies have shown that friendships provide a context for helping children refine positive behaviors, which can improve social competence and facilitate peer acceptance (Rubin et al., in press). Positive social exchanges and improvements in friendship quality, such as those generated by the use of affiliative spontaneous conversational humor, can validate feelings of self-worth and contribute to the social development of both children (Bukowski et al., 2009; Sullivan, 1953). For example, Gest and colleagues (2011) found that children who use positive forms of humor cultivate successful alliances with other children in the peer group. In middle childhood, validated feelings of self-worth, improvements in social competence, and peer group acceptance have implications for short- and long-term socio-emotional adjustment (Hartup & Stevens, 1997; Hodges et al., 1999; Schmidt & Bagwell, 2007).

Aggressive Spontaneous Conversational Humor. Supporting research hypotheses and contributing to the literature about humor in middle childhood, aggressive spontaneous conversational humor was positively related to *poorer* (i.e., more negative) friendship quality. Actors who used higher levels of aggressive spontaneous conversational humor reported more negative interactions in their best friendship, although there was no direct effect of partner aggressive spontaneous humor on actor-rated negative interactions.

There are four potential explanations for these findings that warrant consideration. First, most developmental researchers suggest that children who use aggressive forms of humor lack communication and leadership skills, producing aggressive spontaneous conversational humor as a way to indirectly convey negative feelings about social partners (Klein & Kuiper, 2006; McGhee, 1989). Results of this study indicate that children who produce aggressive spontaneous humor with friends are aware of negative interactions in friendship but have a humorous approach that is only associated with self-perceptions of the relationship. Klein & Kuiper (2006) theorize that some children possess the advanced social skills necessary for using affiliative, aggressive, and self-defeating spontaneous conversational humor in positive ways with peers. Because children think differently about social interaction and behave differently when in the company of friends instead of unfamiliar or familiar peers (Burgess et al., 2006), it is possible that most children instigate "gentler" forms of aggressive spontaneous humor with friends because they are cognizant of what will elicit laughter from their friend and because they want to maintain the relationship. Due to the closeness of the relationship, vindictive motivations for using aggressive spontaneous conversational humor may be employed to a lesser extent, making negative interactions less noticeable to partners.

Second, negative attribution styles provide another explanation for the discrepancy in actor and partner direct effects on negative friendship quality. Children with aggressive tendencies tend to perceive social interactions in more negative and hostile ways than children with non-aggressive tendencies, suggesting that actors who use aggressive spontaneous conversational humor might perceive greater negativity in the relationship than partners (Crick & Dodge, 1994). However, this explanation must be considered in conjunction with the moderating effect of partner aggressive spontaneous conversational humor on the relation between actor aggressive spontaneous conversational humor and actor ratings of negative interactions.

Findings of this dissertation indicated that actors who produced higher levels of aggressive spontaneous conversational humor reported more negative interactions with partners who produced lower levels of aggressive spontaneous conversational humor. Under the attribution premise, it would be expected that children with aggressive tendencies would have an even *more* negative or hostile perception of partners who use aggressive spontaneous conversational humor. Thus, attribution style may not fully account for discrepancies in actor and partner ratings of negative friendship quality.

Third, research about antisocial children suggests that aggressive children often befriend other children because they are more likely to reach agreement during conversation and activities (Dishion, Andrews, & Crosby, 1995; Hartup & Stevens, 1997). Children who use more aggressive spontaneous conversational humor may simply prefer interacting with best friends who are similar to them and "get them," even if it means that there are fewer positive interactions within the dyad. Interestingly, Poulin and Boivin (1999) found that some forms of aggressive behaviors do bond children and contribute to better short-term friendship quality but poorer long-term friendship quality. If children were assessed over time, results of this study might reveal a

different pattern of moderating effects, with longitudinal findings indicating that actors who produce more aggressive spontaneous conversational humor report fewer negative interactions with partners who use less aggressive spontaneous conversational humor.

Finally, to maximize objectivity, aggressive spontaneous conversational humor was coded when friends laughed in response to a humorous utterance. The non-significant relation between partner spontaneous conversational humor and friendship quality may reflect the study's assessment of successful or "well-received" aggressive spontaneous conversational humor rather than detrimental attempts at aggressive spontaneous conversational humor that did not generate laughter.

Self-Defeating Spontaneous Conversational Humor. Contrary to hypotheses, results of this dissertation showed that self-defeating humor was *positively* associated with both actor and partner ratings of positive friendship quality. Actors' own self-defeating humor led to higher self-ratings of intimate disclosure and overall positive friendship quality. Partner production of self-defeating humor contributed to significant improvements in actor ratings of companionship and trend-level increases in actor ratings of help and guidance. These findings are unexpected because in middle childhood, self-defeating spontaneous conversational humor is theorized to be associated with low self-worth, which contributes to poorer quality friendships and peer rejection (Klein & Kuiper, 2006). Some researchers suggest that self-defeating spontaneous conversational humor can adaptive when used to reduce stress and tension (Martin et al., 2003). It is possible that the relation between self-defeating spontaneous conversational humor and positive friendship quality reflects prosocial strategies for helping the dyad adjust to the unfamiliar laboratory setting rather than being indicative of children's low self-worth and social deficits (Führ, 2002). This possibility would most reasonably clarify the significant association between

partner production of self-defeating conversational humor and actor-rated companionship and the trend-level relation between partner production of self-defeating spontaneous conversational humor and actor-rated help and guidance.

Again, it remains important to consider that humorous interactions occurred between best friends and that friendship provides a unique context for children's social interactions (Bukowski et al., 2009; Hartup & Stevens, 1997; Hodges et al., 1999; Schmidt & Bagwell, 2007; Sullivan, 1953). McGhee (1989) suggested that friends may feel closer when they use self-defeating humor to reveal flaws, self-disclose anxieties, or share other intimate feelings that are difficult to discuss outside of a humorous exchange. This assertion appears to be echoed by the direct effect of actors' production of self-defeating spontaneous conversational humor on self-ratings of intimate disclosure. Findings further revealed that actors who produced higher levels of affiliative spontaneous conversational humor reported fewer negative interactions with partners who used higher levels of self-defeating conversational humor, signifying an interactive relation between bond-strengthening affiliative behaviors and self-directed humor during middle childhood. Importantly, there were no self-defeating x self-defeating interactive effects on positive or negative relationship quality, denoting that friends were *not* co-ruminating on self-defeating thoughts in a way that was associated with friendship quality. Other studies have also found that self-defeating humor in one individual does *not* necessarily encourage self-defeating humor in another individual (e.g., Hall, 2010).

In general, results of this study *do* support extant research that denotes individuals do not rate self-defeating spontaneous conversational humor "as bad" as aggressive spontaneous conversational humor. In surveys about social situations, adolescents and adults reported that they were least likely to stop interacting with friends who used affiliative humorous statements,

more likely to stop interacting with friends who used self-defeating humor, and most likely to distance themselves from friends who used aggressive forms of humor (Kuiper, Kirsh, & Leite, 2010). Hall (2010) used APIM analyses to assess adult social relationships and similarly found that actors were more embarrassed by partners' aggressive humor than by partners' self-defeating humor. Taken together, this dissertation provides new information about both aggressive and self-defeating spontaneous conversational humor in middle childhood but results similarly indicate that self-defeating spontaneous conversational humor between friends seems to generally contribute to more positive aspects of friendship than does friends' use of aggressive humor. These findings are noteworthy because self-defeating individuals are typically perceived as having lower self-esteem, less confidence, less intelligence, and being less desirable social partners than those who frequently use aggressive humor (Zillmann & Stocking, 1976). Developmental researchers speculate that within a close relationship, continued supportive engagement with someone who uses self-defeating humor affirms the person and validates feelings of self-worth, potentially contributing to greater long-term improvements in individual and dyadic dynamics than would continued engagement with an aggressive social partner (Kuiper et al., 2010; McGhee, 1989).

There was one exception to the beneficial association between self-defeating spontaneous conversational humor and friendship quality in middle childhood, and it involved the unique interplay of aggressive and self-defeating spontaneous conversational humor between best friends. In support of research hypotheses, partner self-defeating spontaneous conversational humor exacerbated the positive relation between actor aggressive spontaneous conversational humor and actor-rated negative interactions. Results revealed that actors who used higher levels of aggressive spontaneous conversational humor reported less companionship and more negative

interactions when partners used higher levels of self-defeating humor. Findings are in accordance with extant humor research about the detrimental effects of negative forms of humor in close relationships (e.g., Kuiper et al., 2010; Klein & Kuiper, 2006; Martin, 2007; Martin et al., 2003; McGhee, 1989; Winterheld et al., 2013).

Additional interpretations of this finding can be drawn from the social developmental literature. For example, children who use aggressive spontaneous conversational humor may not feel "in sync" or able to adequately resolve conflict with friends who use high amounts of self-defeating spontaneous conversational humor (Dishion et al., 1995; Hartup & Stevens, 1997). Moreover, children who use more aggressive spontaneous conversational humor might perceive self-defeating partners as emotionally weaker and rate the friendship more negatively because they are mismatched "sparring partners" (Klein & Juiper, 2006; McGhee, 1989). It is important to remember, however, that children with aggressive tendencies tend to perceive and rate interactions more negatively than children without aggressive tendencies (Crick & Dodge, 1994). Isaacs, Card, and Hodges (2001) found that recipients of aggressive conduct reported experiencing fewer negative behaviors than the aggressor anticipated would be reported. Thus, negative attributions could help explain the interactive effect of actor aggressive x partner self-defeating spontaneous conversational humor on actor-rated companionship and negative interactions *and* why the converse moderating effect (i.e., actor self-defeating x partner aggressive spontaneous conversational humor on actor-rated companionship and/or negative interactions) was not statistically significant in this study. Overall, it is likely that a combination of detrimental humor styles, preferences for homophily, and negative attributions contribute to the moderating effect of partner self-defeating spontaneous conversational humor on the relation

between actor aggressive spontaneous conversational humor and actor-rated companionship and negative interactions.

III. Hypothesis 4: Dyad-level Variables and Dyadic Spontaneous Conversational Humor

Contrary to research hypotheses, this dissertation does not provide strong evidence that dyad-level variables (i.e., behavioral similarity of dyad, duration of friendship) are associated with the interrelatedness (i.e., dyadic nature) of children's spontaneous conversational humor. In this study, duration of friendship was *negatively* related to dyadic aggressive spontaneous conversational humor, with children in lengthier friendships being less likely to produce interrelated aggressive humor; however, no other significant findings emerged. Little if any research has been conducted about the relation between length of close relationship and dyadic spontaneous conversational humor; therefore, this study presents new information about this association between best friends in middle childhood, specifically that the association is unique to the direct relation between duration of friendship and actor-partner aggressive spontaneous conversational humor. In a study about social information processing and coping, Bowker and colleagues (2007) found that supportive friendships between similarly aggressive children contributed to a reduction in vengeful coping styles for both friends. It was theorized that aggressive best friends grow to understand and trust one another, gradually lessening the likelihood of both friends being defensive and aggressive (Bowker et al., 2007; Sullivan, 1953). A similar process may occur with the development of dyadic aggressive spontaneous conversational humor, with friends who use aggressive spontaneous conversational humor being less likely to similarly produce it over time. It is also plausible that long-lasting friendships encourage children to "be themselves," scaffolding children's transition from dyadic aggressive spontaneous conversational humor that initially attracted children to each other to disparate

styles (i.e., affiliative, self-defeating) or amounts of spontaneous conversational humor that are more reflective of their true humor approach (Bowker et al., 2007; Bukowski et al., 2009; Sullivan, 1953). Of course, we could think about the effect conversely and consider that dyadic aggressive spontaneous conversational humor negatively predicts the duration of friendship, with results suggesting that best friends who use interrelated aggressive spontaneous conversational humor are less likely to have long-term friendships than children who engage in any other combination of dyadic spontaneous conversational humor (Bukowski et al., 2009; Hektner, August, & Realmuto, 2000).

Results of this study indicate that behavioral similarity of the dyad, which was characterized by whether or not best friends had the same *ECP* group classification, was *not* associated with dyadic production of spontaneous conversational humor in middle childhood. Though not in line with research hypotheses, findings advance our understanding of the relation between dyadic behavioral homophily and spontaneous conversational humor in middle childhood. In particular, extant humor research suggests that there are individual differences in patterns of behavior and personalities most typically associated with the production of spontaneous conversational humor (e.g., Goldsmith et al., 1999; Ruch, 1998). To date, studies about these topics have been conducted with adolescents and adults but not with children, and no developmental investigations have examined the dyadic behavioral similarity of mutually nominated best friends and whether similarity influences dyadic production of spontaneous conversational humor.

Findings from this dissertation suggest that this "individual" dyad-level difference is not associated with best friends' interrelated production of spontaneous conversational humor. However, before concluding that behavioral similarity is unrelated to dyadic use of spontaneous

conversational humor across the lifespan, it would be interesting to determine whether friends' specific dyadic behavioral composition is related to dyadic production of spontaneous conversational humor in older ages. More specifically, in future studies about middle childhood, researchers should increase the sample size and examine the relation between raw scores of dyadic behavioral composition (6 groups; i.e., typically developing child with typically developing friend; typically developing child with aggressive friend; typically developing child with shy/withdrawn friend; aggressive child with aggressive friend; aggressive child with shy/withdrawn friend; shy/withdrawn child with shy/withdrawn friend) instead of the two-level collapsed dyadic behavioral similarity variable used in this study.

IV. Limitations and Directions for Future Research

Limitations and Directions for Future Research. Most developmental researchers have assessed children's humor by tallying the number of times a child laughs in response to laboratory-produced stimuli, such as cartoons, riddles, jokes, or humorous audio-recordings (e.g., McGhee, 1980; McGhee & Lloyd, 1981; McGhee & Duffey, 1983; Zigler et al., 1966). In other laboratory studies, researchers have explored whether children can comprehend funny incongruences in sentences or asked children to generate written "punchlines" in response to funny drawings (Masten, 1986; McGhee, 1979; Shultz & Pilon, 1973). A few laboratory studies have been conducted about socially facilitated laughter, but these studies have also used cartoons and scripted jokes to elicit laughter from children who do not know one another (Chapman, 1973, 1975). This study was the first to assess affiliative, aggressive, and self-defeating spontaneous conversational humor between mutual best friends in a laboratory setting.

Results of this dissertation provide novel information about spontaneous conversational humor production between best friends in middle childhood. The research laboratory setting used

in this study provided an ideal environment for methodologically coding observed spontaneous conversational humor in middle childhood; however, as is an inherent limitation of any laboratory-focused observational research, *data were not collected in a naturalistic setting* (Bakeman & Gottman, 1997). In the future, developmental researchers should consider using methodologically rigorous coding schemes to study friends' spontaneous conversational humor production in the research laboratory *and* in less controlled non-laboratory settings (e.g., classrooms, playgrounds, home environments). This approach would enable researchers to extend the results of less rigorous ethnographic studies about childhood humor and friendship, some of which have been conducted in school and neighborhood settings but have used generalized coding schemes instead of specifically assessing spontaneous conversational humor and friendship quality (e.g., Cameron et al., 2010; Sanford & Elder, 1984).

Prior to this dissertation, no studies had been conducted about the relations between affiliative, aggressive, and self-defeating spontaneous conversational humor and positive and negative friendship quality in middle childhood. As a starting point for research, *this dissertation was a cross-sectional investigation.* Although the present study makes multiple contributions to the developmental literature, longitudinal studies would provide more nuanced information about the relation between spontaneous conversational humor and different dimensions of friendship quality. For example, longitudinal studies would allow researchers to determine whether the effects of affiliative, aggressive, and/or self-defeating spontaneous conversational humor on positive and negative friendship quality are stable over time. Scholars could also explore whether the relation between spontaneous conversational humor and friendship quality is bidirectional, with certain humor types reinforcing dimensions of positive or negative friendship quality, which then predict long-term production of spontaneous conversational humor.

This cross-sectional study could also be extended to assess long-term friendship and socio-emotional outcomes. For instance, developmental researchers could study whether spontaneous conversational humor in middle childhood predicts the stability of the best friendship over time. Studies about friendship stability would assess how affiliative, aggressive, and self-defeating spontaneous conversational humor influence whether best friends remain best friends, "downgrade" to good friends, or dissolve the friendship (Bowker, 2011). Using a more comprehensive research model, scholars could also test whether friendship quality in middle childhood mediates or moderates the relation between spontaneous conversational humor in middle childhood and long-term friendship stability. Researchers might also use longitudinal assessments to study the integrative relations between spontaneous conversational humor in middle childhood, friendship quality in middle childhood, and socio-emotional correlates comprehensively outlined in the Literature Review portion of this dissertation. Specifically, scholars could assess the relations between spontaneous conversational humor, friendship quality, and short- and long-term social competence, peer acceptance, internalizing problems, and/or externalizing problems.

There are two additional limitations of this dissertation. First, *the sample size prohibited specific statistical analyses about the relation between raw scores of dyadic behavioral composition* (6 groups of children; e.g., aggressive child and shy/withdrawn friend) *and dyadic spontaneous conversational humor.* The collapsed dyadic behavioral similarity variable (2 groups of children; i.e., behaviorally similar or dissimilar) was used in this study. That is, behavioral similarity of the dyad was based on whether or not best friends had the same *ECP* group classification. In the future, researchers should increase the sample size to ensure that there is enough statistical power to examine associations between more specified behavioral

composition of the dyad and dyadic spontaneous conversational humor production. An increase in sample size would also allow researchers to collect data from an even more diverse sample than was used in this dissertation. For example, an expanded sample size would enable researchers to study the relation between spontaneous conversational humor and friendship quality and/or dyad-level individual differences and dyadic spontaneous conversational humor for children whose parents have lower education levels than the parents in this study. As a result, researchers might produce even more generalizable findings than were afforded by the diverse sample used in this dissertation.

Second, spontaneous conversational humor was coded when friends laughed in response to a humorous utterance. Although this coding approach was conceptually and empirically supported and meant to maximize observer objectivity, *findings reflect the study's assessment of successful or "well-received" spontaneous conversational humor rather than attempts at humor that did not generate laughter.* As more studies are conducted about childhood spontaneous conversational humor, researchers should test a variety of coding approaches, including coding unsuccessful spontaneous conversational humor, in order to determine whether this dissertation's conservative coding approach should be implemented in all studies about observed humor.

Additional Directions for Future Research. In the future, researchers should assess children's *motivations for producing spontaneous conversational humor*. Developmental researchers theorize that children are motivated to use spontaneous conversational humor for a variety of reasons, including to communicate likes and dislikes, probe for information, cope with stress or uncertainly, and spare themselves embarrassment (i.e., "save face") (McGhee, 1989). Führ (2002) found that older children and adolescents use humor to cope with stress, laugh at others (i.e., to be aggressive), and to boost mood, with adolescents being more likely to use

humor to cope with stress and uncertainty than children. Dowling and Fain (1999) also found preliminary evidence that some children view humor as a way to cope with distress. On the other hand, humorous children are more socially likeable than children who are not humorous (Gest et al., 2011), and it is suggested that children have more social control over individuals who like them (McGhee, 1989); therefore, developmental researchers propose that affiliative, aggressive, and self-defeating spontaneous conversational humor also provides a vehicle for social domination. Thus far, researchers have not studied children's motivations for using spontaneous conversational humor with best friends, especially in relation to the positive and negative friendship quality reported by both individuals. In the case of this dissertation, knowledge about children's rationale for using spontaneous conversational humor with best friends would aid in the interpretation of the unexpected positive relation between self-defeating spontaneous conversational humor and positive friendship quality.

In the future, researchers should explore the *content and intimacy level of spontaneous conversational humor utterances* produced between best friends and how these characteristics relate to friendship quality. Findings from correlational studies about humor in childhood suggest that friends often engage in humor about taboo or other intimate topics (McGhee, 1980; Sanford & Elder, 1984; Cameron et al., 2010). Furthermore, as is common in conversational exchanges between close friends, humorous dialogue can entail varying levels of personal discourse and intimate disclosure (Hay, 2000; Martin, 2007). For example, one child in the present study made a humorous revelation that he sleeps on the floor of a closet because his parents do not have money for a bigger apartment. And yet, some instances of spontaneous conversational humor produced by children in this study seemed unrelated to personal experiences or feelings. Extant research demonstrates that discussion-oriented and/or highly intimate dyadic interactions are

often indicative of higher quality childhood friendships (Bakeman & Gottman, 1997; Sullivan, 1953); however, researchers have also linked the over-processing of negative situations to poorer quality friendships in middle childhood (Rose, 2002). It may be that content and intimacy level of spontaneous conversational humor moderates the relation between spontaneous conversational humor production and positive and negative friendship quality in middle childhood. Scholars should explore this possibility.

There is little research about *gender-driven variations in spontaneous conversational humor* production among adults, and scholars have not extensively explored gender differences in child or adolescent spontaneous conversational humor (Martin, 2007). Drawing from the adult literature about humor, it is hypothesized that younger boys and girls may produce spontaneous conversational humor at different rates and for different reasons (Semrud-Clikeman & Glass, 2010). For example, Crawford and Gressley (1991) found that adult males enjoyed and produced more aggressive, sexual, and hostile humor than women, and Hay (2000) determined that women use humor for social bonding and/or to cope with stressors external to immediate social situations, while men use humor to improve social appearance and cope with in-the-moment concerns (Hay, 2000; Martin, 2007). Given these gender-differentiated correlates of spontaneous conversational humor in adulthood, it is conceivable that boys and girls also have disparate experiences of spontaneous conversational humor. Martin & Kuiper (1999) theorize that boys produce more aggressive spontaneous humor than girls, a speculation that coincides with the developmental literature about gender differences in rough-and-tumble play during early and middle childhood. For boys, rough-and-tumble play is especially important during middle childhood because it is an "upbeat" form of interpersonal aggression that is positively intended and perceived (i.e., carried out and received with a smile) and is often associated with social

competence, peer acceptance, and friendships (Pelligrini & Smith, 1998; Rubin et al., in press). Future research should examine whether gender differences arise in the production of spontaneous conversational humor and whether variations influence the direct relation between affiliative, aggressive, and/or self-defeating spontaneous conversational humor and friendship quality in middle childhood.

Finally, there is preliminary evidence that humorous children are more positively regarded in Westernized countries like the United States than in other areas of the world and that certain topics are perceived as more humorous in some cultures than in others (Chen, Rubin, & Li, 1995; Ziv, 1988); however, researchers have not extensively examined cultural variations in childhood humor production. In the future, *scholars should investigate the role of individual and cultural influences on childhood humor* and use findings to develop and test integrative models of childhood humor development.

V. Conclusions

This study was the first to assess observations of affiliative, aggressive, and spontaneous conversational humor in middle childhood and to examine the relation between observed spontaneous conversational humor and friendship quality in middle childhood. Results provide evidence that all three types of spontaneous conversational humor (affiliative, aggressive, self-defeating) are observable in interactions between best friends in middle childhood, reinforcing developmental researchers' assertions that by middle childhood, children have the cognitive abilities and playful social-affective perspective taking skills necessary for appreciating and producing spontaneous conversational humor (Bariaud, 1989; Cunningham, 2005; McGhee, 1989).

Findings suggest affiliative and self-defeating conversational humor are positively associated with positive friendship quality in middle childhood, while aggressive spontaneous conversational humor is positively associated with negative friendship quality in middle childhood. Findings also indicate that best friends' dyadic (actor x partner) spontaneous conversational humor is significantly associated with friendship quality in middle childhood: Results determined that partners' production of *high* levels of *affiliative* and *self-defeating* spontaneous conversational humor contributed to a stronger *positive* relation between actors' production of *affiliative* spontaneous conversational humor and actor-rated more positive friendship quality. Partners' production of *low* levels of *aggressive* spontaneous conversational humor contributed to a stronger *positive* relation between actors' production of *aggressive* spontaneous conversational humor and actor-rated negative friendship quality. In contrast, partners' production of *high* levels of self-defeating spontaneous conversational humor contributed to a stronger *positive* relation between actors' production of *aggressive* spontaneous conversational humor and actor-rated negative friendship quality. Taken together, interactive effects suggest that depending on the type of spontaneous conversational humor produced by actors, partners' production of affiliative and self-defeating spontaneous conversational humor can be beneficial to the friendship; however, partners' production of self-defeating spontaneous conversational humor is detrimental to the friendship when actors produce higher levels of aggressive spontaneous conversational humor.

Results from this dissertation also reveal that children in long-standing best friendships are less likely to engage in interrelated (i.e. dyadic) aggressive spontaneous conversational humor than children in newer best friendships. Findings do not indicate that behavioral similarity of a dyad is associated with dyadic production of spontaneous conversational humor.

In sum, results of this dissertation highlight the direct and interactive effects of affiliative, aggressive, and self-defeating spontaneous conversational humor on multiple dimensions of positive and negative friendship quality in middle childhood. This dissertation also offers directions for future research about humor and friendship quality.

Table 1

Examples of Affiliative Spontaneous Conversational Humor Produced During Interactions

Between Best Friends

Affiliative Humor Statements

"Let's think of some of our inside jokes. It's a burglar!!"
"We like a lot of the same things… like PB&J sandwiches."
[talking about a secret gesture] "Well, not our handshake. Our… stomachshake."
"The rabbits are coming. Hurrah, hurrah!"
"Buy a speedo."
"We raid the soda machine!"
 "Tech'n, Tech'n."
"And when we were playing Trouble. That was fun."
"Pick up our horses and be ready for departure!"
"What is F for? Fantastic."
"Would you want me to be your brother if your mom would adopt me?"
"Skullzilla."
"[Let's] get a mustache."
"[Let's] go to a party with girls."
"[Let's] go to Hollywood for like… 3 hours."
"Actually, every day is a happy day."
"Hello eye in the sky. You're in Vegas."
"We should've asked if we can be 21."
"[Let's] buy the White House!"
"You know what we should've done? We should've done brunch. Gotta have brunch, man."
[imitating Joey character from television show Friends] "How you doin'?"
"I before E. Except after… M."
"The bear necessities, the chicken nugget recipes."
"[Let's] hang out with boys!"
"Then we have lunch… in a tree!"

Table 2

Examples of Aggressive Spontaneous Conversational Humor Produced During Interactions

Between Best Friends

Aggressive Humor Statements
"Do you like to argue?"
"Did you see he got hit with the baseball?"
"I've got a lot of money in my college account, and I'd give it to you… and of course I know you'd take it all!"
"I'm doing all the work [in this task]."
"I'm telling you that was a really stupid remark. I'm telling you from the top of my brain cells. Do you have any [brain cells]?"
"Because his wife was dying, duh!"
"Why would I want that thing after you've contaminated it?"
"Boy, sit down!"
"A Ferrari is only a 2-seater, dude… and I am not sitting on your lap!"
"[Wait], aren't you scared of heights?"
"You didn't have to write that little thingy."
"Why don't you just kill the pharmacist."
"Yeah, you messed up though."
"You have a sticker on your back. It looks so stupid."
"Would you like to confirm [with me] before you start clicking away?"
"You don't know how to write N'Sync."
"You walked up in, like, big diapers."
"She's a punk."
"Who cares?"
"Eww, now that's nasty."
"No, at the plaza, stupid."
"This was you. You were just sitting on the chair and you went 'boom' like that."
"What kind of stupid [person] says that?"
"Your face is red."
"Do you remember the time she left the bathroom door open when she was going pee?"

Table 3

Examples of Self-Defeating Spontaneous Conversational Humor Produced During Interactions

Between Best Friends

Self-Defeating Humor Statements

"This is me being shocked! Meh meh meh *[making electrocution noises]*."

"Did you hear that big boom today at the end of class when everybody looked? Yeah, that was me."

"[Is it funny] when I step on a ping pong ball??"

"I think I'll pick a scab."

"My annoying voice kept failing!"

"I hurt my butt!"

"I never steal…. [well] only from my mom."

"And then I flipped downward and fell on my head."

"Oops, I wrote 'Farmacist' instead of P-H!"

"We're not high-class."

[recounting a time when fell on the ground] "I'm like, 'ahh tripping!'"

[imitating self] "If we don't find the other egg, we're going to be lost!"

 "You have to go to school or you can't get a good job— Wait, why am I talking about education?"

"I'm a pickle. That's what I am."

"Where is my brain these days?"

"That was pathetic that we thought those were eggs."

"You can write because my handwriting is atrocious."

"I don't like this nametag. We're like some dogs they are trying to improve."

"Yeah, let's go rollerblading… 'cuz we're not good at skateboarding!"

[after accidentally drawing on self with marker] "Oh my God. Look what I did!"

"I don't… I don't know!"

[exaggeratedly primping in the mirror] "My hair is so incredible."

"I need the potty room."

"What about that time when I went over to your house and then I squashed my fingers?"

"Ohhhhhh. I lost."

Table 4

Means and Standard Deviations: Final Observed Spontaneous Conversational Humor and

Friendship Quality Variables (n = 250 participants)

Measure	$M(SD)$	Range
FQQ Companionship	3.84(0.80)	1.60 - 5.00
FQQ Validation and Caring	4.24(0.62)	2.10 - 5.00
FQQ Help and Guidance	3.82(0.80)	1.44 - 5.00
FQQ Intimate Disclosure	3.70(0.94)	1.00 - 5.00
FQQ Conflict Resolution	4.24(0.76)	1.00 - 5.00
FQQ Absence of Conflict and Betrayal	4.30(0.59)	2.14 - 5.00
FQQ Total Positive Friendship	3.97(0.64)	1.88 - 5.00
NRI Social Support	3.96(0.64)	2.19 - 5.00
NRI Negative Interactions	1.74(0.53)	1.00 - 4.17
Affiliative Humor	13.88(11.59)	0.00 - 69.33
Aggressive Humor	6.89(7.25)	0.00 - 46.21
Self-Defeating Humor	3.09(3.87)	0.00 - 19.09

Table 5

Correlations Within and Between Actor and Partner Spontaneous Conversational Humor

(n = 250; 125 dyads)

	1	2	3
Actor			
1. Affiliative Humor	--	.53***	.45***
2. Aggressive Humor		--	.44***
3. Self-Defeating Humor			
Partner			
1. Affiliative Humor	.14*	.01	.06
2. Aggressive Humor		-.01	.11
3. Self-Defeating Humor			.25***

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

Table 6

Correlations Within and Between Actor and Partner Positive and Negative Friendship Quality (n = 250; 125 dyads)

	1	2	3	4	5	6	7	8	9
Actor									
1. *FQQ* Companionship	--	.45***	.56***	.48***	.33***	.08	.70***	.45***	-.13
2. *FQQ* Validation and Caring		--	.71***	.72***	.68***	.42***	.86***	.59***	-.34***
3. *FQQ* Help and Guidance			--	.68***	.59***	.33***	.86***	.55***	-.33***
4. *FQQ* Intimate Disclosure				--	.60***	.25***	.87***	.55***	-.14
5. *FQQ* Conflict Resolution						.37***	.78***	.33***	-.35***
6. *FQQ* Absence of Conflict and Betrayal						--	.34***	.27**	-.64***
7. *FQQ* Total Positive Friendship							--	.62***	-.30***
8. *NRI* Social Support								--	-.18*
9. *NRI* Negative Interactions									--
Partner									
1. *FQQ* Companionship	.57***	.16*	.24***	.24***	.08	-.07	.33***	.21*	.02
2. *FQQ* Validation and Caring		.28***	.20***	.24***	.18**	.08	.26***	.13	-.07
3. *FQQ* Help and Guidance			.25***	.29***	.14*	.01	.28***	.20*	-.02
4. *FQQ* Intimate Disclosure				.35***	.15*	.07	.31***	.15	.03
5. *FQQ* Conflict Resolution					.09	.10	.31***	.16	-.08
6. *FQQ* Absence of Conflict and Betrayal						.28***	.16*	-.01	-.09
7. *FQQ* Total Positive Friendship							.06	.21	-.03
8. *NRI* Social Support							.33***	.09	.05
9. *NRI* Negative Interactions									.08

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

Table 7

Standardized Estimates of Actor and Partner Effects of Spontaneous Conversational Humor on Actor Ratings of Positive and Negative

Friendship Quality (n = 250; 125 dyads)

Predictor	*FQQ* Companionship *b*	*FQQ* Validation and Caring *b*	*FQQ* Help and Guidance *b*	*FQQ* Intimate Disclosure *B*	*FQQ* Conflict Resolution *b*	*FQQ* Absence Conflict and Betrayal *b*	*FQQ* Total Positive Friendship *b*	*NRI* Social Support *b*	NRI Negative Interactions *b*
Affiliative Humor A	.07	.09	.07	.08	.04	.11*	.07	.12	-.13*
Affiliative Humor P	-.03	.02	-.04	-.01	.12	.04	.01	-.03	-.03
Aggressive Humor A	-.03	.002	-.01	-.10	.03	-.01	-.02	-.01	.12*
Aggressive Humor P	-.08	.01	-.03	.05	-.02	.01	-.01	.14	-.02
Self-Defeating Humor A	.03	.07	.11	.18*	.08	.02	.10*	.03	-.08
Self-Defeating Humor P	.11*	.06	.12+	.11	.02	.06	.08	.02	-.02
Affiliative Humor A x Affiliative Humor P	-.05	.01	.06	.06	.04	-.06	.02	.09	.20+
Affiliative Humor A x Aggressive Humor P	-.07	-.01	-.04	.02	-.05	.04	-.03	.02	.04
Affiliative Humor A x Self-Defeating Humor P	.13	-.05	.05	-.10	-.05	.03	-.004	-.01	-.23*
Aggressive Humor A x Affiliative Humor P	-.06	-.05	-.06	.08	-.05	.01	-.03	.05	-.07
Aggressive Humor A x Aggressive Humor P	.08	.07	.04	-.07	.02	.06	.03	-.03	-.15*
Aggressive Humor A x Self-Defeating Humor P	-.23**	-.07	-.10	-.05	.01	-.03	-.09	-.07	.16*
Self-Defeating Humor A x Affiliative Humor P	.03	-.06	-.05	-.11	.01	.03	-.04	-.13	-.13
Self-Defeating Humor A x Aggressive Humor P	-.12	-.01	.02	-.002	-.01	.004	-.03	-.003	.02
Self-Defeating Humor A x Self-Defeating Humor P	.01	.12	-.01	.11	.01	.003	.05	.12	.12
Partial ICC	.57***	.19*	.25**	.31***	.05	.23*	.29**	.12	-.01

Note. ** *p* < .001, ** *p* < .001, * *p* < .05, + *p* < .10

Table 8

Correlations Between Behavioral Similarity of Dyad, Duration of Friendship, and Spontaneous Conversational Humor (n = 250)

	1	2	3	4	5
1. Behavioral Similarity of Dyad	--	.21**	-.03	.04	.01
2. Duration of Friendship		--	.07	-.02	.05
3. Affiliative Humor			--	.53***	.45***
4. Aggressive Humor				--	.44***
5. Self-Defeating Humor					--

Note. *** *p* < .001, ** *p* < .01, * *p* < .05
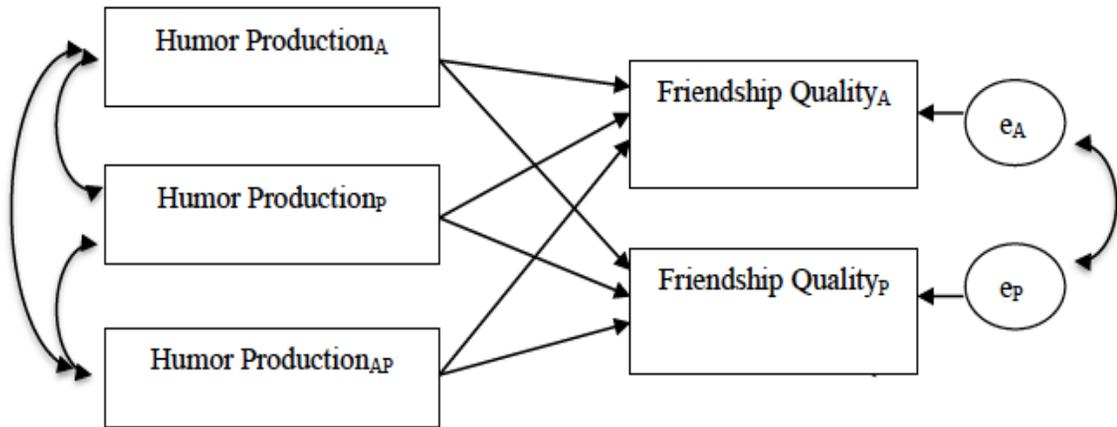
Figure 1. Actor-partner interdependence model for dissertation.
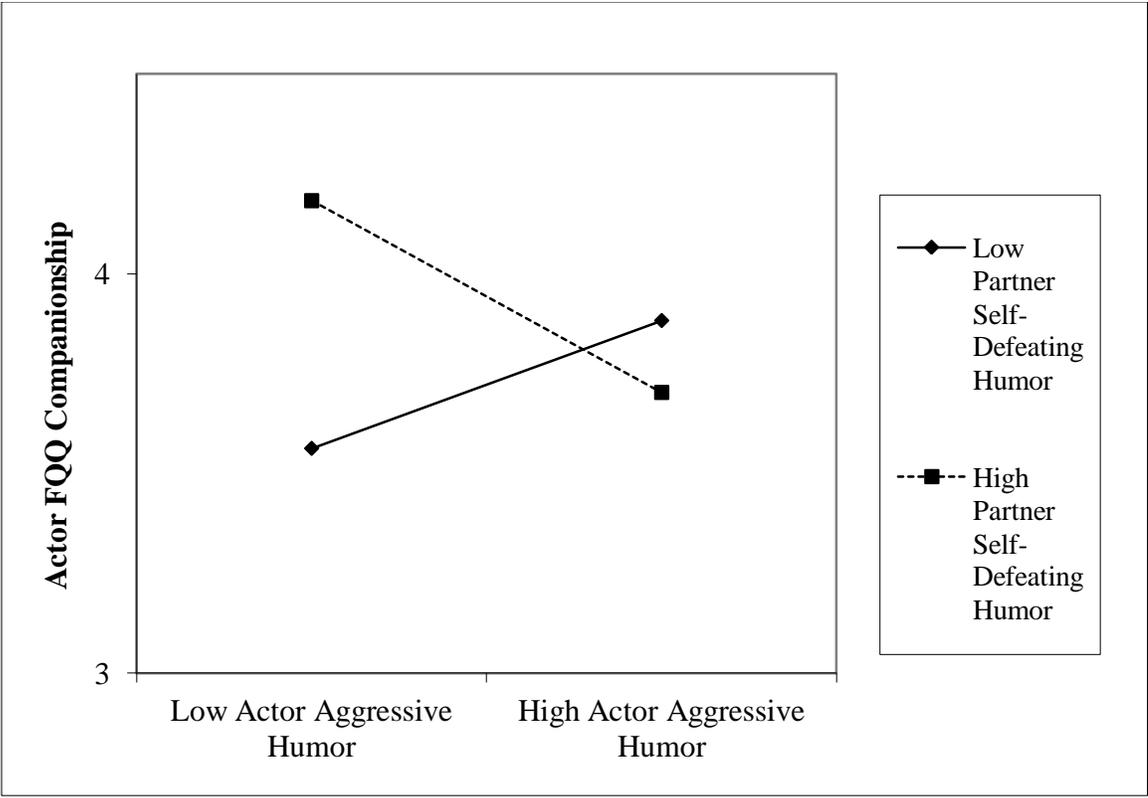
Figure 2. Partner self-defeating spontaneous conversational humor as a moderator of the relation between actor aggressive spontaneous conversational humor and actor-rated companionship. *Note.* Actor aggressive spontaneous conversational humor is associated with *decreasing* companionship when partner self-defeating spontaneous conversational humor is *high*.
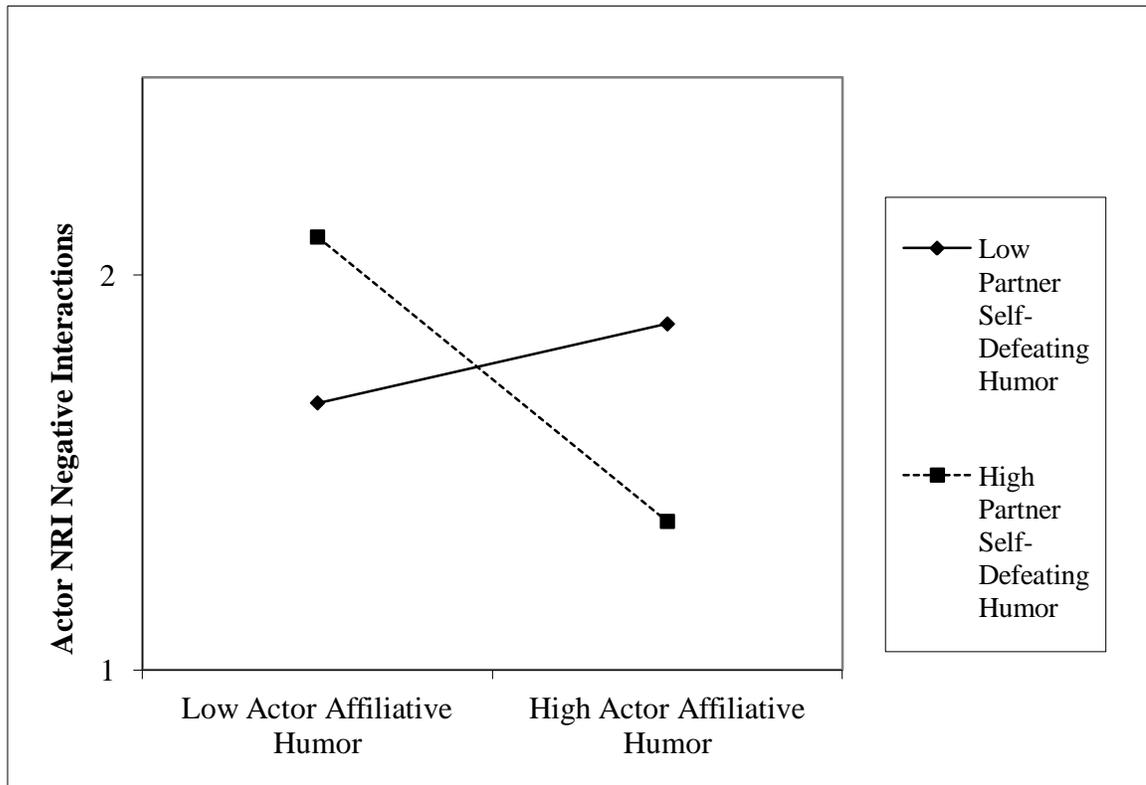
Figure 3. Partner self-defeating spontaneous conversational humor as a moderator of the

relation between actor affiliative spontaneous conversational humor and actor-rated

negative interactions. *Note.* Actor affiliative spontaneous conversational humor is

associated with *decreasing* negative interactions when partner self-defeating spontaneous

conversational humor is *high*.
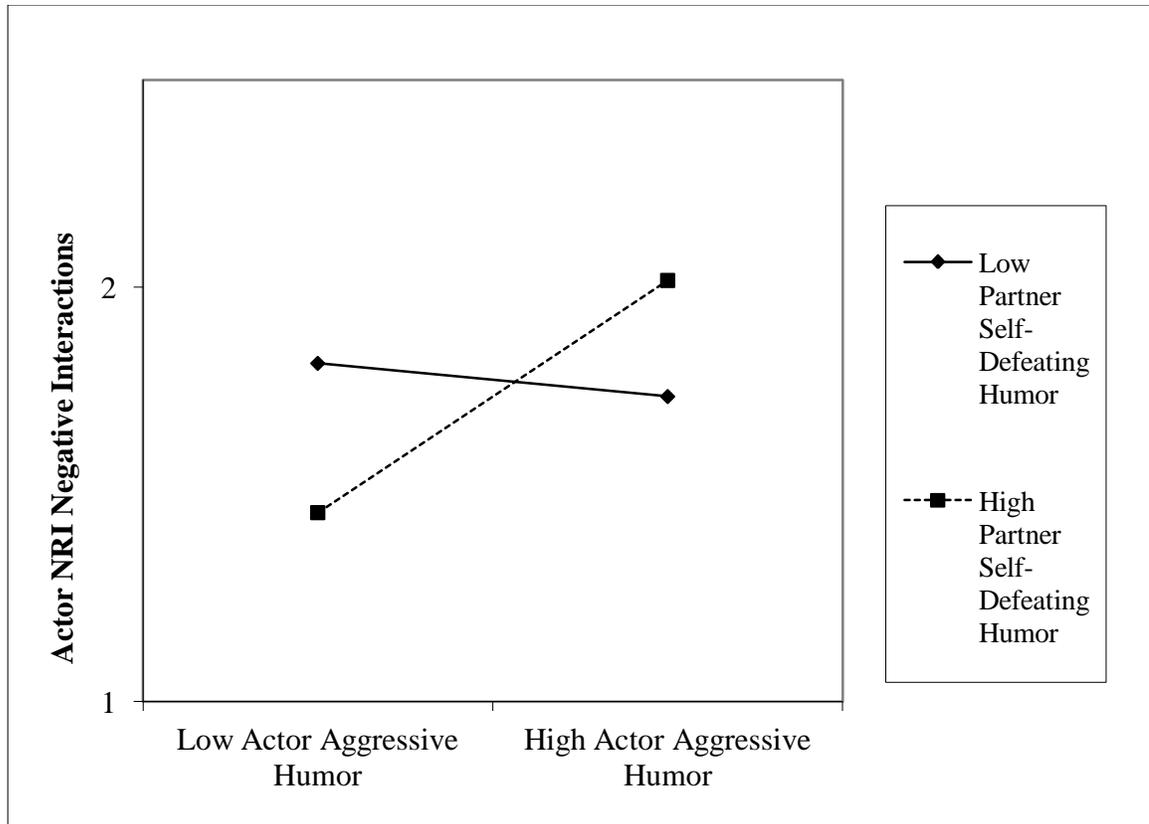
Figure 4. Partner self-defeating spontaneous conversational humor as a moderator of the relation between actor aggressive spontaneous conversational humor and actor-rated negative interactions. *Note.* Actor aggressive spontaneous conversational humor is associated with *increasing* negative interactions when partner self-defeating spontaneous conversational humor is *high*.
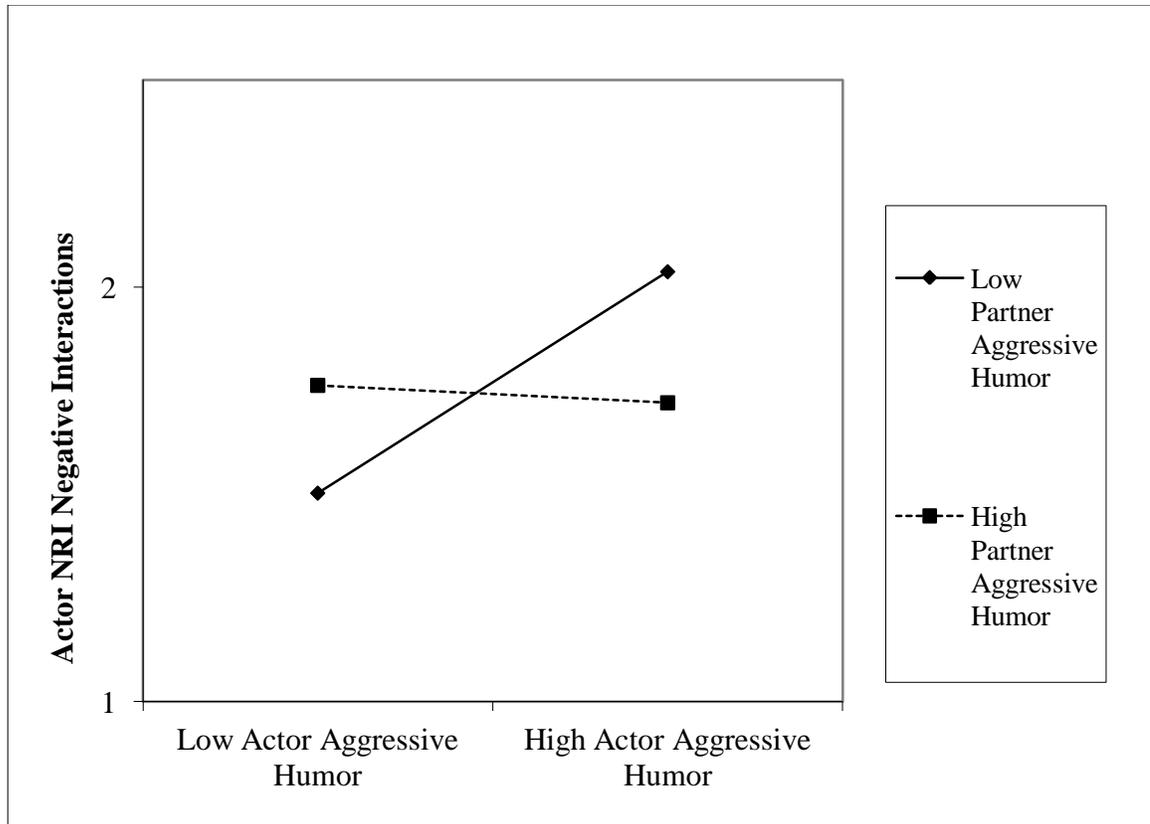
Figure 5. Partner aggressive spontaneous conversational humor as a moderator of the relation between actor aggressive spontaneous conversational humor and actor-rated negative interactions. *Note.* Actor aggressive spontaneous conversational humor is associated with *increasing* negative interactions when partner aggressive spontaneous conversational humor is *low*.
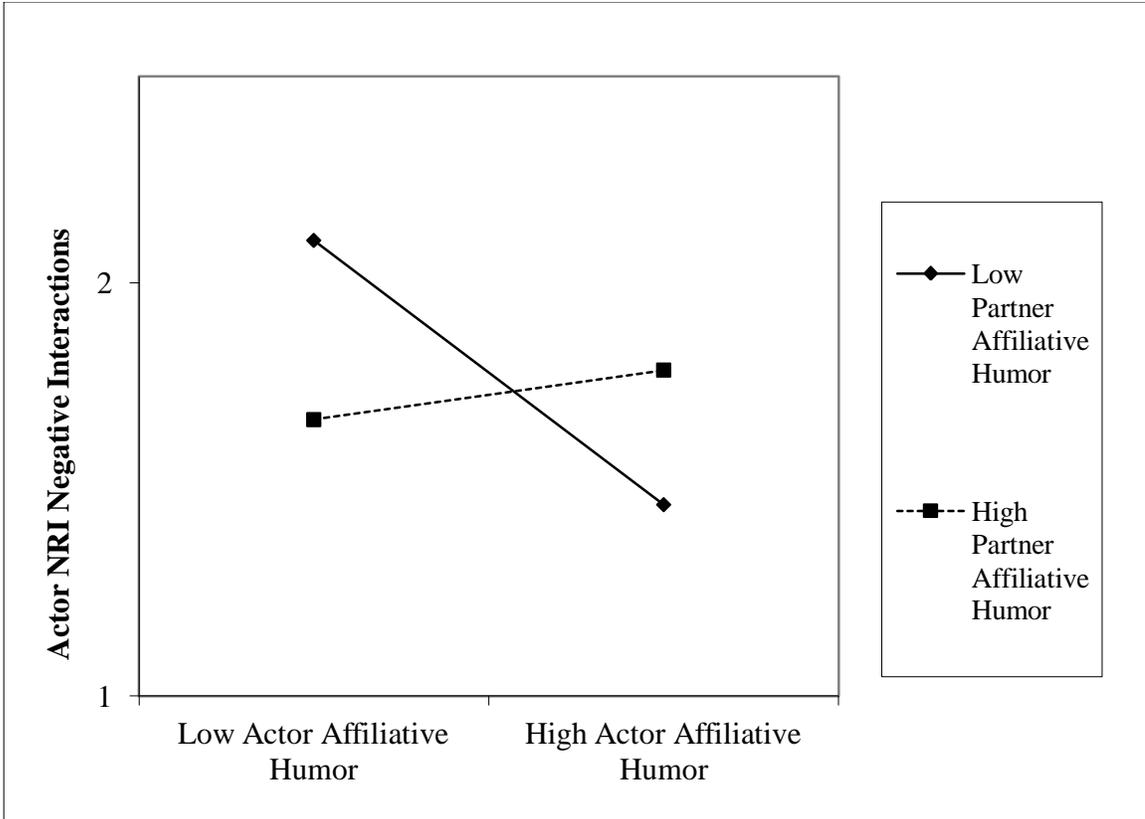
Figure 6. Partner affiliative spontaneous conversational humor as a moderator of the relation between high actor affiliative spontaneous conversational humor and actor-rated negative interactions. *Note.* Actor affiliative spontaneous conversational humor is associated with *decreasing* negative interactions when partner affiliative spontaneous conversational humor is *low*.

APPENDIX A: EXTENDED CLASS PLAY ITEMS

1. A person who is a good leader.
2. A person who interrupts when other children are speaking.
3. Somebody who is very shy.
4. A person with good ideas for things to do.
5. Someone who has mean things said to them.
6. Somebody who has many friends.
7. A person who loses his / her temper easily.
8. A person who doesn't talk much or who talks quietly.
9. Someone who shows off a lot.
10. Someone you can trust.
11. A person who gets into a lot of fights.
12. Someone who will wait his / her turn.
13. Someone whose feelings get hurt easily.
14. Someone who has trouble making friends.
15. Someone who plays fair.
16. A person who hardly ever starts up a conversation.
17. A person who everyone listens to.
18. Someone who spreads rumors about other kids so that people won't like them anymore.
19. A person who can't get others to listen.
20. A person who likes spending time alone (doing computer work, reading, or drawing) more than being with other people.
21. Someone who gets picked on by other kids.
22. Somebody who makes new friends easily.
23. A person who is too bossy.
24. Someone who is often left out.
25. Someone who helps other people when they need it.
26. Someone who is usually sad.
27. A person everyone likes to be with.
28. Someone who thinks that he or she is great.
29. Somebody who teases other children too much.
30. A person who stays by himself / herself more often than being with other people.
31. Someone who is hit or kicked by other kids.
32. Someone who likes to hang out with others more than being alone.
33. Someone who you would rather not be with.
34. Someone who gets nervous about participating in group discussions.
35. Someone you like to be with the most.
36. Somebody who picks on other kids.
37. Somebody who is polite.

APPENDIX B: FRIENDSHIP NOMINATION QUESTIONNAIRE

NAME _____   BOY or GIRL   GRADE _____

TASK #1

Instructions: In the first space below, write the name of your very best friend who is in grade 5 at your school. Please write their first and last name.

Very Best Friend: _____ (if you're a girl, name a girl. if you're a boy, name a boy.)

Next, write the name of your second best friend in grade 5 at your school. Write their first and last name.

Second Best Friend: _____ (if you're a girl, name a girl. if you're a boy, name a boy.)

TASK #2

Instructions: In the spaces below, write the names of three of your other good friends in the fifth grade at your school. For this part, you can name boys or girls. Remember to write out their full names.

1. _____

2. _____

3. _____

APPENDIX C: FRIENDSHIP QUALITY QUESTIONNAIRE

General Instructions

On these questionnaires you are going to fill out, we want to know what you really think about each question; so answer as honestly as possible. There are no right or wrong answers. All this information will be kept private and confidential, which means that your name will not be on any of the forms, and nobody will know how you answered any of the questions. Read carefully and try to answer every question. If you have any questions as you go along, please ask me – I'll be in the next room.

Directions for the Friendship Questionnaire

With this questionnaire, we are going to ask you to circle the choice which describes you best. These questions are about you and your friend. Please write in your friend's name for every numbered sentence. Let's look at the example.

Example A: "_____ and I are the same height."

If this statement is "Not at all true **for you**," then mark "Not at all True"

If this statement is "A little true **for you**," then mark "A little True"

If this statement is "Somewhat true **for you**," then mark "Somewhat True"

If this statement is "Pretty true **for you**," then mark "Pretty true"

If this statement is " Really true **for you**, " then mark "Really true"

** Please mark only ONE answer per question.

A. _____ and I are the same height.

Not at all true A little true   Somewhat true   Pretty true   Really true

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

Think about your relationship with _____. Please answer all of these questions about you and _____.

1. _____ and I live really close to each other.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

2. _____ and I always sit together at lunch.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

3. _____ and I get mad at each other a lot.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

4. _____ tells me I'm good at things.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

5. If the other kids were talking behind my back, _____ would always stick up for me.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

6. _____ and I make each other feel important and special.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

7. _____ and I always pick each other as partners.

      Not at all true A little true   Somewhat true   Pretty true   Really true

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

8. If _____ hurts my feelings, _____ says "I'm sorry."

      Not at all true A little true   Somewhat true   Pretty true   Really true

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

9. I can think of some times when _____ has said mean things about me to other kids.

      Not at all true A little true   Somewhat true   Pretty true   Really true

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

10. I can always count on _____ for good ideas about games to play.

      Not at all true A little true   Somewhat true   Pretty true   Really true

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

11. If _____ and I get mad at each other, we always talk about how to get over it.

      Not at all true A little true   Somewhat true   Pretty true   Really true

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

12. _____ would still like me even if all the other kids didn't like me.

      Not at all true A little true   Somewhat true   Pretty true   Really true

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

13. _____ tells me I'm pretty smart.

Not at all true A little true   Somewhat true   Pretty true   Really true

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

14. _____ and I are always telling each other about our problems.

Not at all true A little true   Somewhat true   Pretty true   Really true

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

15. _____ makes me feel good about my ideas.

Not at all true A little true   Somewhat true   Pretty true   Really true

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

16. When I'm mad about something that happened to me, I can always talk to _____ about it.

Not at all true A little true   Somewhat true   Pretty true   Really true

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

17. _____ and I help each other with chores or other things a lot.

Not at all true A little true   Somewhat true   Pretty true   Really true

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

18. _____ and I do special favors for each other.

Not at all true A little true   Somewhat true   Pretty true   Really true

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

19. _____ and I do fun things together a lot.

 Not at all true A little true   Somewhat true   Pretty true   Really true

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

20. _____ and I argue a lot.

 Not at all true A little true   Somewhat true   Pretty true   Really true

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

21. I can always count on _____ to keep promises.

 Not at all true A little true   Somewhat true   Pretty true   Really true

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

22. _____ and I go to each other's homes after school and on weekends.

 Not at all true A little true   Somewhat true   Pretty true   Really true

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

23. _____ and I always play together at recess.

 Not at all true A little true   Somewhat true   Pretty true   Really true

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

24. When I'm having trouble figuring out something, I usually ask _____ for help and

advice.

 Not at all true A little true   Somewhat true   Pretty true   Really true

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

25. _____ and I talk about the things that make us sad.

    Not at all true A little true   Somewhat true   Pretty true   Really true

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

26. _____ and I always make up easily when we have a fight.

    Not at all true A little true   Somewhat true   Pretty true   Really true

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

27. _____ and I fight.

    Not at all true A little true   Somewhat true   Pretty true   Really true

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

28. _____ and I always share things like stickers, toys, and games with each other.

    Not at all true A little true   Somewhat true   Pretty true   Really true

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

29. If _____ and I are mad at each other, we always talk about what would help to make us feel better.

    Not at all true A little true   Somewhat true   Pretty true   Really true

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

30. If I told _____ a secret, I could trust _____ not to tell anyone else.

    Not at all true A little true   Somewhat true   Pretty true   Really true

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

31. _____ and I bug each other.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

32. _____ and I always come up with good ideas on ways to do things.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

33. _____ and I loan each other things all the time.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

34. _____ often helps me with things so I can get done quicker.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

35. _____ and I always get over our arguments really quickly.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

36. _____ and I always count on each other for ideas on how to get things done.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

37. _____ doesn't listen to me.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

38. _____ and I tell each other private thoughts a lot.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

39. _____ and I help each other with schoolwork a lot.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

40. I can think of lots of secrets _____ and I have told each other.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

41. _____ cares about my feelings.

   Not at all true A little true   Somewhat true   Pretty true   Really true

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

APPENDIX D: NETWORK OF RELATIONSHIPS INVENTORY

General Instructions

On these questionnaires you are going to fill out, we want to know what you really think about each question; so answer as honestly as possible. There are no right or wrong answers. All this information will be kept private and confidential, which means that your name will not be on any of the forms, and nobody will know how you answered any of the questions. Read carefully and try to answer every question. If you have any questions as you go along, please ask me – I'll be in the next room.

Directions for the Relationships Questionnaire

Everyone has a number of people who are important in his or her life. For example, your parents, brothers or sisters, other relatives, teachers, and friends are people who might be important to you. The questions below are about your relationships with your family members and friends.

----

1. Circle all the parents you have who are alive:

      mother   father   step-mother   step-father

2. Circle the parents you live with right now:

      mother   father   step-mother   step-father

3. Which of the following <u>relatives</u> is most important to you?

      a grandmother   a grandfather   an aunt   an uncle

4. What is the name of the <u>teacher</u> at your school who is most important to you?

      _____

5. Please list the first name and last initial of **your friend who came in with you today (or the last time you were here).** This should be a person that you see regularly. It should not be a friend whom you seldom spend time with (such as someone who lives far away).

      a. _____
          (first name)   (last initial)

      b. How long have you been friends? _____years   _____months

The next questions ask about your relationships with each of the following people:
1) your mother or step-mother (if you have both, describe your relationship with the one you live with); 2) your father or step-father (if you have both, describe your relationship with the one you live with); 3) your friend; 4) your teacher; 5) your relative; and 6) each of your siblings. Answer each of the following questions for each person. Sometimes the answers for different people may be the same; sometimes they may be different.

When answering questions about your **friend**, it should be the same person you named for question #5. When answering questions about your **relative**, it should only be the person you named on page 2 (question #3).

----

1. How much **free time** do you spend with this person?

	None	Little	Some	A lot	Almost all
Friend	1	2	3	4	5

2. How much do you and this person get upset with each other or mad at each other?

	None	Little	Some	A lot	Almost always
Friend	1	2	3	4	5

3. How much does this person teach you how to do things that you don't know how to do?

	None	Little	Some	A lot	Almost always
Friend	1	2	3	4	5

4. How satisfied are you with your relationship with this person?

	Not satisfied	A little satisfied	Somewhat satisfied	Very satisfied	Extremely satisfied
Friend	1	2	3	4	5

5. How much do you tell this person everything?

	Tell nothing	Tell a little	Tell some things	Tell a lot of things	Tell all
Friend	1	2	3	4	5

6. How much do you help this person with things she/he can't do by her/himself?

	Not at all	**A little**	**Somewhat**	**A lot**	**Almost always**
Friend	1	2	3	4	5

7. How much does this person like or love you?

	Not at all	**A little**	**Somewhat**	**A lot**	**Very much**
Friend	1	2	3	4	5

8. How much does this person punish you?

	Not at all	**A little**	**Somewhat**	**A lot**	**Very much**
Friend	1	2	3	4	5

9. How much does this person treat you like you're admired and respected?

	Not at all	**A little**	**Somewhat**	**A lot**	**Very much**
Friend	1	2	3	4	5

10. How often does this person tell you what to do?

	Never	**Seldom**	**Sometimes**	**Often**	**Always**
Friend	1	2	3	4	5

11. How sure are you that this relationship will last no matter what?

	Not at all	**A little sure**	**Somewhat sure**	**Very sure**	**Extremely sure**
Friend	1	2	3	4	5

12. How much do you play around and have fun with this person?

	Not at all	**A little**	**Somewhat**	**A lot**	**A ton**
Friend	1	2	3	4	5

13. How much do you and this person disagree and quarrel?

	Not at all	A little	Somewhat	A lot	A ton
Friend	1	2	3	4	5

14. How much does this person help you figure out or fix things?

	Not at all	A little	Sometimes	A lot	The most
Friend	1	2	3	4	5

15. How happy are you with the way things are between you and this person?

	Not happy	A little happy	Somewhat happy	Very happy	Extremely happy
Friend	1	2	3	4	5

16. How much do you and this person annoy or bug each other?

	Never	A little	Sometimes	Often	Very often
Friend	1	2	3	4	5

17. How much do you share your secrets and private feelings with this person?

	Never	A little	Sometimes	Often	Very often
Friend	1	2	3	4	5

18. How much do you protect and look out for this person?

	Never	A little	Sometimes	Often	Very often
Friend	1	2	3	4	5

19. How much does this person really care about you?

	Not at all	A little	Somewhat	A lot	Very much
Friend	1	2	3	4	5

20. How much does this person discipline you for disobeying him/her?

	Not at all	A little	Somewhat	A lot	Very much
Friend	1	2	3	4	5

21. How much does this person treat you like you're good at many things?

	Not at all	A little	Somewhat	A lot	Very much
Friend	1	2	3	4	5

22. How often is this person the boss in your relationship?

	Never	Seldom	Sometimes	Often	Always
Friend	1	2	3	4	5

23. How sure are you that your relationship will last even if you have fights?

	Not at all	A little sure	Somewhat sure	Very sure	Extremely sure
Friend	1	2	3	4	5

24. How often do you go places and do enjoyable things with this person?

	Never	Seldom	Sometimes	Often	Always
Friend	1	2	3	4	5

25. How much do you and this person argue with each other?

	Not at all	A little	Sometimes	A lot	Very much
Friend	1	2	3	4	5

26. How often does this person help you when you need to get something done?

	Never	Seldom	Sometimes	Often	Always
Friend	1	2	3	4	5

27. How good is your relationship with this person?

	Bad	A little bad	Good	Very good	Great
Friend	1	2	3	4	5

28. How much do you and this person hassle or nag one another?

	Not at all	A little	Sometimes	A lot	Almost always
Friend	1	2	3	4	5

29. How much do you talk to this person about things that you don't want others to know?

	Not at all	A little	Some	A lot	Very much
Friend	1	2	3	4	5

30. How much do you take care of this person?

	Not at all	A little	Some	A lot	Very much
Friend	1	2	3	4	5

31. How much does this person have a strong feeling of affection (love or liking) toward you?

	Not at all	A little	Some	A lot	Very much
Friend	1	2	3	4	5

32. How much does this person scold you for doing something you're not supposed to do?

	Not at all	A little	Some	A lot	Very much
Friend	1	2	3	4	5

33. How much does this person like or approve of the things you do?

	Not at all	A little	Some	A lot	Very much
Friend	1	2	3	4	5

34. How often does this person take charge and decide what should be done?

	Never	Seldom	Sometimes	Often	Always
Friend	1	2	3	4	5

35. How sure are you that your relationship will continue in the years to come?

	Not at all	A little sure	Somewhat sure	Very sure	Extremely sure
Friend	1	2	3	4	5

APPENDIX E: FRIENDSHIP TASK INSTRUCTIONS

<u>BEST TIMES</u>

- ❖ We're really interested in what kids do with their friends. So, for this activity we'd like you to think about the **good times** you've had together.
  - ➢ Talk about all the **things you like to do together**,
  - ➢ **what you've done together**, especially the **fun times** you have had.
  - ➢ It could be **special events** or **things you do together all the time**.
  - ➢ **Just talk about things you've done and what it was like**.
- ❖ After 5 minutes, I'll come back and then I'd like to hear about those things.

<u>MORAL DILEMMA DISCUSSION TASK</u>

We are about to read a story. I'll read it aloud, and then read the questions that follow. Then <u>you'll</u> discuss the questions and answers with each other and come up with just <u>one</u> answer that you <u>both</u> agree on for each question.

Last year, in Maryland, a woman was near death from a special kind of cancer. There was one drug that doctors thought might save her life. It was a type of pill that a pharmacist in the same town had recently discovered.

The drug was really expensive to make, but the pharmacist was charging $2000, or ten times what it cost him to make the drug, just for a small dose. But this small dose might have been enough to save the woman's life.

Tom, the sick woman's husband, borrowed all the money he possibly could—about $1000—or about one-half the amount he needed. He told the pharmacist that his wife was dying and asked him to sell the drug cheaper, or to let him pay the rest of the money later.

The pharmacist told Tom, "No, I discovered the drug, and I'm going to make money from it." That night, Tom was desperate. So he went to the pharmacy and broke into the store to steal the drug for his dying wife.

1. Should Tom have taken the drug? Why or why not?
2. Should Tom be punished for stealing the drug? Why or why not?
3. Did the pharmacist have the right to charge so much? Why or why not?
4. Would it be right to charge the pharmacist with murder? Why or why not?

When you finish the first question, go on and talk about the next one. Resolve the issue between the two of you and come up with only ONE answer that you both agree on. Continue answering the questions the same way until all questions are answered.

- ❖ I'll **leave** and then **come back** after about **10 minutes**.

PLAN A WEEKEND ACTIVITY

- ❖ For the <u>last</u> activity, we'd like the two of you to **plan an imaginary weekend together**.
- ❖ To plan this weekend you can **assume two things**:
  - ➢ (1) you have an **unlimited amount of money to spend** (as much as you want); and
  - ➢ (2) that you have **permission from your parents**.
- ❖ While thinking about your weekend, you'll have to **consider all the details** –
  - ➢ **activities for the morning, afternoon, and evening** –
  - ➢ and things like **where you'll stay**,
  - ➢ **how you'll get around**, and
  - ➢ **how you'll get food**.
- ❖ Use your **imagination** to plan **everything** from **Friday night** until **Sunday afternoon**.
- ❖ If you want, you can **write** down your ideas on this **sheet**. *(Show them the planning sheet and make sure they see it is double sided.)*
- ❖ In **10 minutes** I'll come back and you can tell me about the weekend you two planned.

APPENDIX F: HUMOR CODING INSTRUCTIONS AND EXAMPLES

Definitions
- *Humor initiator:* Child who begins a humorous exchange.
- *Humor recipient:* Child who responds to initiated humor.
- *Production of affiliative humor:* Initiator uses affiliative humor to amuse the recipient; humor is not directed at anyone in particular (i.e., no one is the subject of the humor).
- *Production of aggressive humor:* Initiator directs teasing/ridicule-focused humor at the recipient or another person for the purpose of amusing the recipient. Aggressive humor includes subtle or direct put-downs, teasing, or mockery of another individual who may or may not be present.
- *Production of self-defeating humor:* Initiator makes negative statements about self (i.e., self-ridicule/teasing) in order to amuse the recipient.
- *Appreciation of humor:* Laughter (or laughter with verbal humor utterance that extends the humor) in response to any of the three types of humor above.

Instructions
Humor is coded when the second child responds to the first child with laughter (or laughter and follow-up humor) showcasing that the recipient appreciates the initiated humor. If the second child does not respond to a statement meant to be humorous, do not code the exchange as humorous.

Laughter in response to accidental events (e.g., ball falling on ground, game piece falling over) does not qualify as conversational humor initiated by one of the children.

Humor is only coded when it's derived from a verbal statement/sound; therefore, humorous utterances are coded but not gestures unless they are accompanied by verbal sound.

To classify the content of humor from the three types described above, document the content of the humorous sentence/exchange and determine whether humor is about another person (aggressive), the self (self-defeating), or is not directed at anyone in particular but meant to be amusing (affiliative) (*1* = affiliative, *2* = aggressive, *3* = self-defeating).

If there is an ongoing humorous dialogue between children (recipient responds with laughter and humor and extends the humorous exchange and then initiator uses humor again, etc.), count as one humorous exchange until/unless a new topic is introduced in the segment. A topic shift would signal the beginning of a new humorous exchange.

Only code for humor when the dyad is alone in the room (i.e., when no interviewer is present).

Examples

Affiliative Humor
Child 1 [planning a weekend]: No, we're not done yet in New Orleans. We have to go a….
luxury hotel [voice chance for emphasis].
Child 2: [Laughs].

Child 1 [planning a weekend]: Let's spend seven dollars on….Pokémon cards!
Child 2: [Laughs].

Child 1: Smile, we're on candid camera!
Child 2: [Laughs].

Child 1: I'm going to make a bazooka wooka!
Child 2: [Laughs].

Child 1 [planning a weekend]: And we can ride on a…. submarine!
Child 2: [Laughs]. A… yellow… submarine?
Child 1: [Laughs].

Child 1 [after Child 2 suggests going to a ranch]: The *main* ranch? [voice change for emphasis].
Child 2: [Laughs]. The main, *head* ranch [voice change for emphasis].
Child 1: [Laughs].

Aggressive Humor
Child 1 [after recalling several best times together]: I helped you with your homework once…
now *that* wasn't fun [voice change for emphasis].
Child 2: [Laughs].

Child 1 [after Child 2 asked whether Child 1 knows how to play gin rummy]: Duhhhhhhhh!
[funny voice and expression].
Child 2: [Laughs].

Child 1 [recalling best times]: Remember when the fifth graders were so slow… and fat?
Child 2: [Laughs].

Child 1: You're funny to me. You're like a little kid in a big person's body.
Child 2: [Laughs]. Why thank you [sarcastic voice for emphasis].
Child 1: [Laughs].

Self-Defeating Humor
Child 1: Remember when I fell of my chair and everyone laughed? [makes falling noise].
Child 2: [Laughs].

Child 1 [Not able to think of anymore best times]: I can't think of jack anymore! [Laughs].
Child 2: [Laughs].

APPENDIX G: HUMOR CODING SHEET

Participant ID Numbers and Outfits: _____

Dyad # : _____

Dyad Sex: Male   Female   (circle one)

Coder Initials: _____   Date: _____

Data Entry Initials: _____   Date: _____

Task: _____

ID	Initiates – Time	Type of Humor	Content	Response Type

ID	Initiates – Time	Type of Humor	Content	Response Type

ID	Initiates – Time	Type of Humor	Content	Response Type

ID	Initiates – Time	Type of Humor	Content	Response Type

ID	Initiates – Time	Type of Humor	Content	Response Type

ID	Initiates – Time	Type of Humor	Content	Response Type

ID	Initiates – Time	Type of Humor	Content	Response Type

ID	Initiates – Time	Type of Humor	Content	Response Type

REFERENCES

Bagwell, C. L., & Schmidt, M. E. (2011). The friendship quality of overtly and relationally victimized children. *Merrill-Palmer Quarterly*, *57*(2), 158-185.

Bakeman, R., & Gottman, J. (1997). *Observing interaction: An introduction to sequential analysis* (2nd ed.). New York: Cambridge University Press.

Bariaud, F. (1989). Chapter 1: Age differences in children's humor. *Journal of Children in Contemporary Society*, *20*(1-2), 15-45.

Bergen, M. (1998). Development of the sense of humor. In W. Ruch (Ed.), *The sense of humor: Explorations of a personality characteristic* (pp. 329-358). Berlin, Germany: Walter de Gruyter.

Berndt, T. J., & McCandless, M. A. (2009). Methods for investigating children's relationships with friends. In K. H. Rubin, W. M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 63-81). New York: Guilford.

Bowker, J. C. (2011). Examining two types of best friendship dissolution during early adolescence. *Journal of Early Adolescence*, *31*(5), 656-670.

Bowker, J. C. W., Rubin, K. H., Burgess, K. B., Booth-LaForce, C., & Rose-Krasnor, L. (2006). Behavioral characteristics associated with stable and fluid best friendship patterns in middle childhood. *Merrill-Palmer Quarterly*, *52*(4), 671-693.

Bowker, J. C., Rubin, K. H., Rose-Krasnor, L., & Booth-LaForce, C. (2007). Good friendships, bad friends: Friendship factors as moderators of the relation between aggression and social information processing. *European Journal of Developmental Psychology*, *4*(4), 415-434.

Bukowski W. M., & Hoza, B. (1989). Popularity and friendship: Issues in theory, measurement,

and outcome. In T. J. Berndt & G. W. Ladd (Eds.), *Peer relations in child development* (pp. 15-45). New York: Wiley.

Bukowski, W. M., Hoza, B., & Boivin, M. (1994). Measuring friendship quality during pre-and early adolescence: The development and psychometric properties of the Friendship Qualities Scale. *Journal of Social and Personal Relationships*, *11*(3), 471-484.

Bukowski, W. M., Motzoi, C., & Meyer, F. (2009). Friendship as process, function, and outcome. In K. H. Rubin, W. M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 217-231). New York: Guilford.

Burgess, K. B., Wojslawowicz, J. C., Rubin, K. H., Rose‐Krasnor, L., & Booth‐LaForce, C. (2006). Social information processing and coping strategies of shy/withdrawn and aggressive children: Does friendship matter? *Child Development*, *77*(2), 371-383.

Cameron, E. L., Fox, J. D., Anderson, M. S., & Cameron, C. A. (2010). Resilient youths use humor to enhance socioemotional functioning during a day in the life. *Journal of Adolescent Research*, *25*(5), 716-742.

Chapman, A. J. (1973). Social facilitation of laughter in children. *Journal of Experimental Social Psychology*, 9(6), 528-541.

Chapman, A. J. (1975). Humorous laughter in children. *Journal of Personality & Social Psychology, 31*(1), 42-49.

Chapman, A. J. (1998). Social aspects of humorous laughter. In W. Ruch (Ed.), *The sense of humor:Explorations of a personality characteristic* (pp. 329-358). Berlin, Germany: Walter de Gruyter.

Chapman, A. J., Smith, J. R., & Foot, H. C. (1980). Humour, laughter, and social interaction. In

    P. E. McGee & A. J. Chapman (Eds.), *Children's humour* (pp. 141-179). Chichester:

    John Wiley & Sons.

Chen, X., Rubin, K. H., & Li, Z. Y. (1995). Social functioning and adjustment in Chinese

    children: A longitudinal study. *Developmental Psychology*, *31*(4), 531.

Cherkas, L., Hochberg, F., MacGregor, A. J., Snieder, H., & Spector, T. D. (2000). Happy

    families: A twin study of humour. *Twin Research, 3*(1), 17-22.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression:*

    Correlation analysis for the behavioral sciences (3rd ed.). Mahwah, NJ: Lawrence

    Erlbaum Associates.

Crawford, M., & Gressley, D. (1991). Creativity, caring and context. *Psychology of Women*

    Quarterly, *15*(2), 217-231.

Creusere, M. A. (2000). A developmental test of theoretical perspectives on the understanding of

    verbal irony: Children's recognition of allusion and pragmatic insincerity. *Metaphor and*

    Symbol, *15*(1-2), 29-45.

Crick, N. R., & Dodge, K. A. (1996). Social information-processing mechanisms in reactive and

    proactive aggression. *Child Development*, *67*(3), 993-1002.

Cunningham, J. (2005). Children's humor. In W. G. Scarlett, S. Naudeau, D. Salonius-Pasternak,

    & I. Ponte (Eds.), *Children's play* (pp. 93-109). Thousand Oaks, CA: Sage.

De Groot, A., Kaplan, J., Rosenblatt, E., Dews, S., & Winner, E. (1995). Understanding versus

    discriminating nonliteral utterances: Evidence for a dissociation. *Metaphor and Symbol*,

    10(4), 255-273.

Dews, S., Winner, E., Kaplan, J., Rosenblatt, E., Hunt, M., Lim, K., McGovern, A., Qualter, A., & Smarsh, B. (1996). Children's understanding of the meaning and functions of verbal irony. *Child Development*, *67*(6), 3071-3085.

Dishion, T. J., Andrews, D. W., & Crosby, L. (1995). Anti-social boys and their friends in early adolescence: Relationship characteristics, quality, and interactional process. *Child Development, 66*(1), 139-151.

Dowling, J. S., & Fain, J. A. (1999). A multidimensional sense of humor scale for school-aged children: Issues of reliability and validity. *Journal of Pediatric Nursing*, *14*(1), 38-43.

Erdley, C. A., Nangle, D. W., & Gold, J. A. (1998). Operationalizing the construct of friendship among children: A psychometric comparison of sociometric-based definitional methodologies. *Social Development, 7,* 62-71.

Fabrizi, M. S., & Pollio, H. R. (1987). Are funny teenagers creative? *Psychological Reports*, *61*(3), 751-761.

Foot, H. C., Chapman, A. J., & Smith, J. R. (1977). Friendship and social responsiveness in boys and girls. *Journal of Personality and Social Psychology*, *35*(6), 401.

Führ, M. (2002). Coping humor in early adolescence. *Humor: International Journal of Humor Research, 15*(3), 283-304.

Furman, W., & Buhrmester, D. (1985). Children's perceptions of the personal relationships in their social networks. *Developmental Psychology, 21*, 1016-1024.

Furman, W., & Robbins, P. (1985). What's the point? Issues in the selection of treatment objectives. In *Children's peer relations: Issues in assessment and intervention* (pp. 41-54). New York: Springer-Verlag.

Galloway, G. (2010). Individual differences in personal humor styles: Identification of prominent patterns and their associates. *Personality and Individual Differences, 48*(5), 563-567.

Gest, S. D., Graham-Bermann, S. A., & Hartup, W. W. (2001). Peer experience: Common and unique features of number of friendships, social network centrality, and sociometric status. *Social Development*, *10*(1), 23-40.

Goldsmith, H.H., Lemery, K. S., Buss, K. A., & Campos, J. J. (1999). Genetic analyses of focal aspects of infant temperament. *Developmental Psychology, 35*(4), 972-985.

Gottman, J. M. (1986). The observation of social process. In J. M. Gottman & J. G. Parker (Eds.), *Conversations with friends: Speculations on affective development* (pp. 51-100) New York, NY: Cambridge University Press.

Hall, J. A. (2010). Is it something I said? Sense of humor and partner embarrassment. *Journal of Social and Personal Relationships, 28*(3), 383-405.

Harris, M., & Pexman, P. M. (2003). Children's perceptions of the social functions of verbal irony. *Discourse Processes*, *36*(3), 147-165.

Hartup, W. W., & Stevens, N. (1997). Friendships and adaptation in the life course. *Psychological Bulletin*, *121*(3), 355-370.

Hay, J. (2000). Functions of humor in the conversations of men and women. *Journal of Pragmatics*, *32*(6), 709-742.

Hektner, J. M., August, G. J., & Realmuto, G. M. (2000). Patterns and temporal changes in peer affiliation among aggressive and nonaggressive children participating in a summer school program. *Journal of Clinical Child Psychology*, *29*(4), 603-614.

Hinde, R. A. (1987). *Individuals, relationships, and culture.* Cambridge, MA: Cambridge University Press.

Hinde, R. A., & Stevenson-Hinde, J. (1987). Interpersonal relationships and child development. *Developmental Review*, *7*(1), 1-21.

Hodges, E. V., Boivin, M., Vitaro, F., & Bukowski, W. M. (1999). The power of friendship: protection against an escalating cycle of peer victimization. *Developmental Psychology*, *35*(1), 94-101.

Howes, C. (1990). Social status and friendship from kindergarten to third grade. *Journal of Applied Developmental Psychology*, *11*(3), 321-330.

Isaacs, J., Card, N. A., & Hodges, E. V. E. (2001). Victimization by peers in the school context. *New York State Psychologist, 13*(1), 21-24.

Kazarian, S. S., Moghnie, L., & Martin, R. A. (2010). Perceived parental warmth and rejection in childhood as predictors of humor styles and subjective happiness. *Europe's Journal of Psychology*, *6*(3), 71-93.

Keith-Spiegel, P. (1972). Early conceptions of humor: Varieties and issues. In J. H. Goldstein & P. E. McGhee (Eds.), *The psychology of humor: Theoretical perspectives and empirical issues* (pp. 3-39). New York: Academic Press.

Keltner, D., Capps, L., Kring, A. M., Young, R. C., & Heerey, E. A. (2001). Just teasing: a conceptual analysis and empirical review. *Psychological Bulletin*, *127*(2), 229.

Kielar-Turska, M., & Białecka-Pikul, M. (2009). Generating and understanding jokes by five- and nine-year-olds as an expression of theory of mind. *Polish Psychological Bulletin*, *40*(4), 163-169.

Kenny, D., Kashy, D., & Cook, W. (2006). *Dyadic data analysis.* New York: Guilford.

Klein, D. N., & Kuiper, N. A. (2006). Humor styles, peer relationships, and bullying in middle childhood. *Humor: The International Journal of Humor Research*, *19*(4), 383-404.

Koestler, A. (1964). *The art of creation*. London: Hutchinson.

Kuiper, N. A., Kirsh, G. A., & Leite, C. (2010). Reactions to humorous comments and implicit theories of humor styles. *Europe's Journal of Psychology, 6*(3), 236-266.

Laursen, B*., &* Pursell, G. *(*2009*).* Conflict in peer relationships. . In K. H. Rubin, W. M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 267–286)*.* New York: Guilford.

Lazarus, R. S. (1991). Cognition and motivation in emotion. *American Psychologist, 46*(4), 352-367.

Lewis, P. (2006). *Cracking up: American humor in a time of conflict.* Chicago, IL: University of Chicago Press.

MacWhinney, B. (2000). *The CHILDES Project: Tools for analyzing talk* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Manke, B. (1998). Genetic and environmental contributions to children's interpersonal humor. In W. Ruch (Ed.), *The sense of humor: Explorations of a personality characteristic* (pp. 361-384). Berlin, Germany: Walter de Gruyter.

Martin, R. A. (2007). *The psychology of humor: An integrative approach.* Burlington, MA: Elsevier Academic Press.

Martin, R. A., & Kuiper, N. A. (1999). Daily occurrence of laughter: Relationships with age, gender, and Type A personality. *Humor: International Journal of Humor Research, 12*(4), 355-384.

Martin, R. A. Puhlik-Doris, P., Larsen, G., Gray, J., & Weir, K. (2003). Individual differences in uses of humor and their relation to psychological well-being: Development of the Humor Styles Questionnaire. *Journal of Research in Personality, 37*(1), 48-75.

Martineau, W H. (1972). A model of the social functions of humor. In J. H. Goldstein & P. H. McGhee (Eds.), *The psychology of humor: Theoretical perspectives and empirical issues* (pp. 101-125). New York: Academic Press.

Masten, A. S. (1986). Humor and competence in school-aged children. *Child Development*, *57*(2), 461-473.

Masten, A. S., Morison, P., & Pellegrini, D. S. (1985). A revised class play method of peer assessment. *Developmental Psychology*, *21*(3), 523-533.

Massaro, D., Valle, A., & Marchetti, A. (2013). Irony and second-order false belief in children: What changes when mothers rather than siblings speak? *European Journal of Developmental Psychology*, *10*(3), 301-317.

Murphy, B. C., & Eisenberg, N. (2002). An integrative examination of peer conflict: Children's reported goals, emotions, and behaviors. *Social Development*, *11*(4), 534-557.

McGhee, P. (1971). Cognitive development and children's comprehension of humor. *Child Development, 42*(1), 733-744.

McGhee, P. E. (1974). Cognitive mastery and children's humor. *Psychological Bulletin*, *81*(10), 721-730.

McGhee, P. E. (1976). Children's appreciation of humor: A test of the cognitive congruency principle. *Child Development*, *47*(2), 420-426.

McGhee, P. (1979). *Humor: Its origin and development.* San Francisco, CA: W. H. Freeman.

McGhee, P. (1980). Development of the sense of humour in childhood: A longitudinal study. In P. E. McGhee & A. J. Chapman (Eds.), *Children's humour* (pp. 213-236). Chichester: John Wiley & Sons.

McGhee, P. E. (1989). Chapter 5: The contribution of humor to children's social development. *Journal of Children in Contemporary Society*, *20*(1-2), 119-134.

McGhee, P. E., & Duffey, N. S. (1983). Children's appreciation of humor victimizing different racial-ethnic groups: Racial ethnic differences. *Journal of Cross-Cultural Psychology*, *14*(1), 29-40.

McGhee, P. E., & Lloyd, S. A. (1981). A developmental test of the disposition theory of humor. *Child Development*, *52*(3), 925-931.

Newcomb, A. F., & Bagwell, C. L. (1995). Children's friendship relations: A meta-analytic review. *Psychological Bulletin*, *117*(2), 306-347.

Owren, M. J., & Bachorowski, J. A. (2003). The evolution of emotional experience: A "selfish gene" account of smiling and laughter in early hominids and humans. In T. J. Mayne & G. A. Bonanno (Eds.), *Emotions: Current issues and future directions* (pp. 152-191). New York, NY: Guilford.

Park, R. (1977). A study of children's riddles using Piaget-derived definitions. *Journal of Genetic Psychology*, *130(*1), 57-67.

Parker J. G., & Asher, S. R. (1993a). Beyond group acceptance: Friendship and friendship quality as distinct dimensions of children's peer adjustment. In D. Perlman & W. H. Jones (Eds.), *Advances in personal relationships* (Vol. 4, pp. 261-294). London: Kingsley.

Parker, J. G., & Asher, S. R. (1993b). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology*, *29*(4), 611.

Parsons, T. (1951). *The social system.* Glencoe, IL: Free Press.

Pellegrini, D. S., Masten, A. S., Garmezy, N., & Ferrarese, M. J. (1987). Correlates of social and academic competence in middle childhood. *Journal of Child Psychology and Psychiatry*, *28*(5), 699-714.

Pellegrini, A. D., & Smith, P. K. (1998). The development of play during childhood: forms and possible functions. *Child and Adolescent Mental Health*, *3*(2), 51-57.

Piaget, J. (1932). *The moral judgment of the child.* London: Kegan Paul.

Piaget, J. (1970). Piaget's theory. In P.H. Mussen (Ed.), *Carmichael's manual of child psychology* (3rd ed., Vol. 1, pp. 703-732). New York: Wiley.

Poulin, F., & Boivin, M. (1999). Proactive and reactive aggression and boys' friendship quality in mainstream classrooms. *Journal of Emotional and Behavioral Disorders*, *7*(3), 168 177.

Prasinos, S., & Tittler, B. I. (1981). The family relationships of humor-oriented adolescents. *Journal of Personality, 49*(3), 295-305.

Roeckelein, J. E. (2002). *The psychology of humor: A reference guide and annotated bibliography.* Westport, CT: Greenwood Press.

Rose, A. J. (2002). Co–rumination in the friendships of girls and boys. *Child development*, *73*(6), 1830-1843.

Rubin, K. H., Bukowski, W. M., & Bowker, J. C. (in press). Children in peer groups. In M. H. Bornstein & T. Leventhal (Eds.), *Handbook of Child Psychology and Developmental Science* (7th ed., Vol. 4). New York: Wiley.

Rubin, K. H., Chen, X., & Hymel, S. (1993). Socioemotional characteristics of withdrawn and aggressive children. *Merrill-Palmer Quarterly*, *39*(4), 518-534.

Ruch, W. (1998). Sense of humor: A new look at an old concept. In W. Ruch (Ed.), *The sense of humor: Explorations of a personality characteristic* (pp. 3-14). Berlin, Germany: Walter de Gruyter.

Sanford, S., & Eder, D. (1984). Adolescent humor during peer interaction. *Social Psychology Quarterly*, *47*(3), 235-243.

Scambler, D. J., Harris, M. J., & Milich, R. (1998). Sticks and stones: Evaluations of responses to childhood teasing. *Social Development*, *7*(2), 234-249.

Schmidt, M. E., & Bagwell, C. L. (2007). The protective role of friendships in overtly and relationally victimized boys and girls. *Merrill-Palmer Quarterly*, *53*(3), 439-460.

Schneider, B. H., & Tessier, N. G. (2007). Close friendship as understood by socially withdrawn, anxious early adolescents. *Child Psychiatry and Human Development*, *38*(4), 339-351.

Semrud-Clikeman, M., & Glass, K. (2010). The relation of humor and child development: Social, adaptive, and emotional aspects. *Journal of Child Neurology*, *25*(10), 1248-1260.

Shapiro, J. P., Baumeister, R. F., & Kessler, J. W. (1991). A three-component model of children's teasing: Aggression, humor, and ambiguity. *Journal of Social and Clinical Psychology*, *10*(4), 459-472.

Sherman, L. W. (1988). Humor and social distance in elementary school children. *Humor: International Journal of Humor Research,* 1(4), 389-404.

Shiota, M. N., Campos, B., Keltner, D., & Hertenstein, M. J. (2004). Positive emotion and the regulation of interpersonal relationships. In P. Philippot & R. S. Feldman (Eds.), *The regulation of emotion* (pp. 127-155). Mahwah, NJ: Lawrence Erlbaum Associates.

Shultz, T. R. (1974). Development of the appreciation of riddles. *Child Development*, *45*(1)100-105.

Shultz, T. R. (1976). A cognitive-developmental analysis of humour. In A. J. Chapman & H. C. Foot (Eds.), *Humor and laughter: Theory, research, and applications* (pp. 11-36). London: John Wiley & Sons.

Shultz, T. R., & Pilon, R. (1973). Development of the ability to detect linguistic ambiguity. *Child Development, 44*(4), 728-733.

Sletta, O., Valås, H., Skaalvik, E., & Søbstad, F. (1996). Peer relations, loneliness, and self perceptions in school‐aged children. *British Journal of Educational Psychology*, *66*(4), 431-445.

Simpkins, S. D., Parke, R. D., Flyr, M. L., & Wild, M. N. (2006). Similarities in children's and early adolescents' perceptions of friendship qualities across development, gender, and friendship qualities. *The Journal of Early Adolescence*, *26*(4), 491-508.

Simpson, J. A., & Weiner, E. S. C. (1989). *The Oxford English dictionary* (2nd ed., Vol. 7). Oxford: Clarendon Press.

Sullivan, H. S. (1953). *The interpersonal theory of psychiatry.* New York: Norton.

Szabo, A. (2003). The acute effect of humor and exercise on mood and anxiety. *Journal of Leisure Research, 35*(2), 152-162.

Warm, T. R. (1997). The role of teasing in development and vice versa. *Journal of Developmental & Behavioral Pediarics*, *18*(2), 97-101.

Warnars-Kleverlaan, N., Oppenheimer, L., & Sherman, L. (1996). To be or not to be humorous: does it make a difference? *Humor*, *9*(2), 117-142.

Whalen, J. M., & Pexman, P. M. (2010). How do children respond to verbal irony in face-to-face communication? The development of mode adoption across middle childhood. *Discourse Processes*, *47*(5), 363-387.

Whitt, J. K., & Prentice, N. M. (1977). Cognitive processes in the development of children's enjoyment and comprehension of joking riddles. *Developmental Psychology*, *13*(2), 129-136.

White, R. C. (1959). Motivation reconsidered: The concept of competence. *Psychological Review, 66*(1)*,* 297-333.

Wickberg, D. (1998). *The senses of humor: Self and laughter in modern America.* Ithaca, NY: Cornell University Press.

Wilson, G. D., Rust, J., & Kasriel, J. (1977). Genetic and family origins of humor preferences: A twin study. *Psychological Reports, 41*(2), 659-660.

Winner, E., Windmueller, G., Roseblatt, E., Bosco, L., Best, E., & Gardner, H. (1987). Making sense of literal and nonliteral falsehood. *Metaphor & Symbolic Activity, 2*(1), 13-32.

Winterheld, H. A., Simpson, J. A., & Oriña, M. M. (2013). It's in the way that you use it: Attachment and the dyadic nature of humor during conflict negotiation in romantic couples. *Personality and Social Psychology Bulletin*, *39*(4), 496-508.

Wojslawowicz Bowker, J. C., Rubin, K. H., Burgess, K. B., Rose-Krasnor, L., & Booth-LaForce, C. L. (2006). Behavioral characteristics associated with stable and fluid best friendship patterns in middle childhood. *Merrill-Palmer Quarterly, 52*, 671–693.

Yalisove, D. (1978). The effect of riddle structure on children's comprehension of riddles. *Developmental Psychology, 14*(2), 173-180.

Zigler, E., Levine, J., & Gould, L. (1966). Cognitive processes in the development of children's appreciation of humor. *Child Development*, *37*(3), 507-518.

Zillmann, D., & Stocking, S. H. (1976). Putdown humor. *Journal of Communication*, *26*(3), 154-163.

Ziv, A. (1988). *National styles of humor.* New York, NY: Greenwood Press.