Examining Children’s Apologies in the Preschool Classroom

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Dedication

To Luke, Chase, and Evelyn,

follow your dreams along whatever winding road they take you.

I believe in you.

You’ve got this.

Abstract

Although acts of apology are learned early in development and play a fundamental role in repairing interpersonal relationships, most children's apology research is not based on naturally occurring child apologies but on children's impressions of adult actors, hypothetical peers, or story characters apologizing for transgressions. This study focused on closing the gaps between the current understanding of young children's impressions of apologies and their actual apologetic behavior by examining 3- to 5-year-old children's naturally occurring peer apologies in two preschool classrooms. An apology coding frame was created to account for verbal and nonverbal apologetic communication behaviors and social repair was measured using forgiveness markers, a peer likeability sorting task, and the time it took to return to play following each conflict. Responses from child participant interviews and parent and teacher surveys were used to evaluate differences in child participants' ideas about apologies, their actual apologetic communication behaviors, and parent and teacher expectations. Findings add to the broader understanding of early apologetic behavior by (a) confirming that preschoolers' verbal apology use is positively associated with peer likability in a natural setting, (b) offering new insights into preschooler's apologetic communication tendencies by substantiating how preschool children use nonverbal apologetic behaviors at a significantly higher rate than verbal apologetic behaviors, and (c) documenting differences between preschool children's understanding of apologies and their apologetic tendencies following actual peer conflicts.

Keywords: apology, remorse, preschool, children, peer, classroom, conflict, forgiveness

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CDLS: Child Development Laboratory School, a part of the Institute of Child Development at the University of Minnesota, Twin Cities

IMPACT: Shortened title of “Examining the I.M.P.A.C.T. (Interpersonal Meaning of Preschool Apologetic Communication Tendencies) used for this study.

Chapter 1: Introduction

Most people have received an insincere verbal apology. Even hearing the singular word “sorry” spoken sincerely but casually can feel hurtful and underwhelming in the face of feeling wronged. Nevertheless, as young as toddlers, children are taught that the word sorry has a profound impact, so profound that it acts like a magical band-aid, immediately alleviating hurt and repairing relationships.

This idea that apologies have a magical effect on “making everything better” seems to be something young children generally absorb. Children as young as three can use apologies appropriately (Ely & Gleason, 2006). By early elementary school, children tend to view those who apologize as more remorseful and nicer than those who do not apologize (Smith & Harris, 2011). In fact, by the time they are in school, children recognize an apology as a performative gesture tied to the socially normative expectations of acknowledging a transgression (Sell & Rice, 1988). This research indicates that children understand the proposed functions of apologetic language and when it is an appropriate social script; however, it does not clarify which aspects of apologies, if any, may impact children's relationship repair.

For example, is the utterance of the word “sorry” itself generating an emotional response in the child transgressor and the apology recipient? Does the word signal a sense of emerging responsibility for one’s actions, or are these words merely ritualistic, like a greeting? Most importantly, to what extent does the delivery of an apology or other nonverbal indications of remorse impact the meaning and outcome of the interaction? These are all questions I asked myself as a parent, as I watched my two young boys flipflop between offering sincere apologies with nonverbal behaviors that indicated remorse and concern, demanding apologies from each other, and tossing out apologies without much feeling but out of a sense of obligation. Any type of apology from one of my children to the other often calmed things down for a moment. However, I questioned whether simple apologies held very much traction in repairing the relationship or if it was actually the way that they acted toward each other that was healing (or ultimately hurting) their relationship.

As a parent, I believed that these repair interactions were meaningful for my children's relationship, foreshadowing how they would go out into the world and learn to work through conflicts with other children, teenagers, and eventually adults. It is a skill that, admittedly, I continue to work on myself. When I first returned to graduate school for my master's degree in 2017, Dr. Miksch asked me what I was interested in researching, and the question, "What makes an apology matter?" was the first thing that came to my mind. At the time, I had no idea how to go about this adventure, but their support and shared curiosity buoyed my confidence, so the work for this dissertation began. The rest of this chapter is a bit of a window into that process; it elucidates my approach to researching children's apologies by outlining (a) how my upbringing and experiences as a parent have contributed to my view of apologies, and how those views directly impacted the focus of this dissertation, (b) how my identity as a scholar shifted and solidified over the course of my graduate studies, and (c) how the subsequent chapters of this dissertation include the components necessary to begin answering the focus questions which arose from exploring the topic of children's apologies as a parent and as a scholar.

Personal and Parenting Identity

My upbringing was (somewhat) out of a storybook, or at least I was raised to narrate my life as a series of happy endings—even if I was in the middle of slaying a dragon. After all, I was taught that most of a good story is in the journey, not the ending.

I have a mother who is no stranger to hardship and is the most compassionate, other-focused soul on the planet. She raised me (and conditioned me to help raise others--including three younger siblings, 48 younger first cousins, and my own three children) using methods highly focused on children's needs, feelings, and capacities, with goals centered on raising humans to be empathetic, resilient, and have high internal self-efficacy--which is not a simple or easy task. It requires awareness and focus on each child's individual needs and capabilities in the moment. It also requires patience that is not tainted by annoyance and encouragement that is not focused on achieved goals but on the process of achieving those goals. In a sense, my parents were conditioning me to find joy in caring for others and to have a growth mindset before Carol Dweck (2006; Haimovitz & Dweck, 2017) coined the concept and turned how researchers think about intelligence and fostering success on its head.

My parents' authoritative parenting style, their focus on having a growth mindset, and my personal trait markers had a direct impact on how I view apologies and parent my own children. Based on my experiences and personality, I was likely to (and typically do) feel guilt after transgressing (i.e., I am a good person who did something that was not okay or my choice hurt someone) instead of shame (i.e., I am not a good person, so I do things that are not okay or hurt people). My parents modeled empathy and emphasized that it was okay that my choices would not always be “good” or “correct” and that the “wrong” choices were not shameful but opportunities to learn. Additionally, I have trait personality markers that indicate low neuroticism and high extraversion, the opposite of which is correlated with the self-conscious emotion of shame (Muris et al., 2018). These conditions contributed to my feeling that apologies were not typically a direct face threat but an opportunity to feel and express remorse. It was common for the people in my home to say that we were sorry that something happened, or we did something that hurt someone and that we would try to learn from it and make a better choice the next time. Ironically, the most difficult apology moments for me happened as an adult when other adults attempted to shame me for apologizing “too often” or even at all. I knew that some of these same adults prompted their children to apologize verbally, and I struggled with the tension I was experiencing between different social expectations for children and adults. Why was it that a child showing remorse and apologizing was considered appropriate and compassionate, but an adult showing remorse or apologizing was considered a sign of weakness? What experiences or internal differences influenced how my friends, colleagues, and I viewed and used apologies differently? While these questions did not end up being the focus of my work, they did influence how I examined children’s capacities for repair based on developmental factors and led me to approach the study of children’s apologies as events that occur within a broader set of social conditions that shift over time and across the lifespan.

Differences in the social acceptability of apologizing as an adult versus as a child also made me question the utility of teaching my children to use apologetic language, or at least of positioning the word "sorry" as the penultimate way of showing remorse. I realized that how I want to parent aligns much more closely with asking my child questions to guide them through making their own decisions rather than directing them to a specific speech act. For me, asking my child, "How can you show Luke you feel bad about that choice?" instead of making the statement, "Tell Luke that you are sorry," has value in that it provides my child with agency and shows them that I have confidence in their self-efficacy. It may be that they decide the way they want to show remorse is to say, "I'm sorry;" that would not be surprising, as I have modeled remorseful verbal apology use as one of many ways to show care and concern for another. My parenting goal is not to discourage apologetic language but to teach children to use it as an expression of remorse and not as a rote social script. I want my children to learn that it is the expression of care that is meaningful. I feel similarly about regular, non-magical band-aids; I think that the power of putting a band-aid on a scraped knee is not due to the physical band-aid but the symbolic act of showing a child that you see their hurt, that they are important to you and worth stopping whatever else you are doing to go get a band-aid, and that they are loved by how you clean their scrape (no matter how small) and gently put the band-aid on whatever they feel is hurt.

Although I believe that attentiveness and care matter when someone is hurt, I also understand that it is not always easy to engage in repair and focus on another, especially if your own emotions feel overwhelming. As a parent, I know that it is more difficult for me to pause and give care when I am in a rush or stressed. As a former preschool teacher and as a developmental scholar, I know that children who are first learning to make amends with peers have situational and internal stressors that can make engaging with relational repair challenging. Preschool children are learning to regulate their emotions and may feel overwhelmed by conflict, making it difficult for them to think through what they should do or access the prosocial behaviors they were taught (Drell & Jaswal, 2016; also based on conditions of hot cognition, Metcalf & Mischel, 1999; Welsh & Peterson, 2014). Also, preschool children may have insecure internal working models and trait-related emotional processes that default to shame during conflict or transgression events. Behaviorally, shame versus guilt patterned responses are directly associated with whether a child (even those as young as two years old) avoids interaction (shame) after transgressing or tries to make amends (guilt) after transgressing (Barrett et al., 1993). Because children's internal states impact their tendencies to engage in repair, it could be that asking a child to engage in verbal apologetic language would further internalize their shame or increase anxiety.

Concerns about the difficulties that some children experience when giving apologies are concerns I have heard from parents and friends who work with young children. As they see children struggle with negative feelings during forced apologies (or say "sorry," but without feeling), they question whether and how they should teach children to apologize. This concern about increasing children's anxiety at a time when anxiety levels have been increasing in the United States for decades is valid. Meta-analyses of Americans' trait anxiety levels have shown a nearly complete standard deviation increase for both children and adults between 1952 and 1993, with children in America reporting more anxiety in the 1980s than children who were psychiatric patients in the 1950s (Twenge, 2000). This upward climb has continued into the 21st century at an alarming rate, with 7.8% of children aged 3 to 17 reporting an anxiety disorder between 2018 and 2019 (Mangione et al., 2022) and more than 30% of youth in the United States experiencing anxiety disorders by the time they are 18 years old (Allen et al., 2020). While these statistics were gathered just before the COVID-19 pandemic, the intensity of disconnection experienced by children during isolation periods of the pandemic likely fueled this trend, as disconnection is related to anxiety (Twenge, 2020). Additionally, during the pandemic, children under quarantine conditions exhibited increases in the rates of anxiety-related behaviors such as panic attacks, as well as other maladaptive behaviors such as rage and physical violence (Heller et al., 2023).

The alarming and heartbreaking statistics on childhood anxiety are solid motivators for why adults need to help young children foster empathy, connection, and care for each other now more than ever. In their book, *The Gardner and the Carpenter*, Gopnik (2016) argues that every generation needs to change and adapt to succeed within the conditions they find themselves in as the world changes. Suppose adults aim to raise children to fit perfectly into the previous generations' mold. In that case, the opportunity to observe and acknowledge the best ways to help each child thrive under the conditions in which they are growing may be missed. Prior to and during the pandemic, adults and children have been spending increasingly more time on devices (Bekelman et al., 2022; Jonnatan et al., 2022; Kılıç et al., 2019), leaving less time for face-to-face interaction; this reduces the potential amount of time for parents to model remorse behavior and for children to learn the nuances of interpersonal repair. Under these circumstances, the question becomes, how do adults help young children learn to engage in social repair in ways that are sensitive to how they interact at this moment in time? The answers to that question could only be explored by learning more about how today's children use apologetic communication strategies in real time. Therefore, my approach to researching preschool children's apologetic tendencies had to fit two key components: (a) it needed to highlight how children currently enact apologies, and (b) it needed to measure the effectiveness of apologies using measures that were salient to preschool children (i.e., engaging in play or identifying peers that they like to play with). As I began to research how children's apologies have been studied thus far, I realized how vital these two conditions would be for amplifying the voices and experiences of children in my work and made them the cornerstones of my dissertation's primary aim.

Scholarly Identity

When I first began my work on children's apologies, a common inquiry was why I was studying apologies from a communication lens and not a psychological lens. My general response to this question is that having undergraduate degrees in each, I find it both (a) impossible and (b) a detriment to try to separate the two fields. Just as major behavioral theories such as attachment theory and social learning theory frame aspects of understanding in each field, both fields have shifted in the past half-century from more linear traditions (sender-receiver models in communication or stage theories in psychology) to more dynamic analyses and theories of development and behavior.

These shifts in how each field understands its place in a larger conversation have led to a natural overlap between the study of psychological development and communication behaviors. While the field of developmental psychology has been re-examining brain and behavioral processes as dynamic systems (Overton, 2007; Scherer, 2000, 2009a, 2009b; Smith & Thelen, 2003), the field of communication studies has been doing similar work through the re-evaluation of interpersonal interactions to be dynamic, interdependent, and influenced by verbal, nonverbal, social, personal, and contextual factors (Baxter & Braithwaite, 2008; Kapetanovic & Skoog, 2021). Psychology scholars evaluate the impact of communication on psychological development (e.g., Altarriba & Basnight-Brown, 2022; Roberts, 2019), and communication scholars consider developmental and psychological factors to be impactful for communication interactions and tendencies (e.g., Lunz Trujillo et al., 2021; Brashers et al., 2002). While both fields often have to complete research focused on small slices of events, researching communication behavior from a social scientific perspective requires the consideration of psychological and developmental factors. Likewise, researching the developmental behaviors of preschoolers' apologetic tendencies without considering how they are communicating apology would provide a poorer understanding of apologetic behavior than if combined.

Ultimately, I chose to situate my research primarily in the field of communication studies while considering developmental psychological influences because the inclusion of both verbal and nonverbal communication of apology is central to my questions about how children communicate remorse and about what impact different types of apologetic communication tendencies might have on relationship repair. As I began to explore current children's apology research, two things quickly became apparent: (a) learning successful apologetic strategies early could positively impact a child's long-term social development, and (b) current children's apology research was not heavily focused on children's actual apologies.

Whether children can develop successful apologetic repair strategies could have long-term implications for their social development and adjustment. Learning strategies to resolve conflict peacefully and make amends for transgressions provides children with an essential developmental opportunity to learn how to repair relationships and to gain skills in perspective-taking, moral reasoning, empathy, sympathy, and emotional understanding (Chen, 2003). Just as significantly, successfully attaining these skills positively impacts social development and peer relationships (Spivak, 2016), while a deficit in these skills can lead to negative peer relationships and adjustment problems (Hawker & Boulton, 2000). Learning to successfully make amends after a transgression early in development could positively impact a child's trajectory of social development and impact the likelihood that they will have strong, positive, social networks in the future.

Unfortunately, current children's apology research is not heavily focused on actual children's apologies. Although a fair amount of research has examined children's reactions to hearing adults apologize or seeing characters in a story apologize, research on children's apologies has not thoroughly examined the dynamic process of apologies and their consequences on interpersonal relationship development, maintenance, or repair among preschool (or older children's) peers. To my knowledge, no studies have examined naturally occurring apologetic acts among early preschool peers. Instead, research has overwhelmingly focused on how children feel as bystanders to apologies by asking them retrospectively how they feel about observing a transgressor's verbal apology (or lack thereof) or by examining how children feel about direct interactions with researchers or hypothetical peers who apologize or do not apologize - but not with actual peers. Even though using retrospective methodologies is efficient, the resulting data only captures children's self-reported feelings about apologies and not how children enact apology behaviors.

These methods also neglect the crucial role that nonverbal cues may play in the apology process or how these cues might interact with verbal communication of remorse to influence social repair. For example, there is very little information about how facial expressions or bodily cues influence perceptions of apologetic remorse for children, and no research examining the influence of the cues when the victim directly experiences a transgression from a peer. Determining how various types of verbal and nonverbal apologetic acts impact interpersonal relationships among preschoolers would help us develop conflict intervention strategies that lead to effective social repair skills in early childhood that could have lasting positive, long-term effects. Conflict intervention strategies that preschool-aged children recognize as effective in repairing their relationships could even reduce violence in preschool classrooms, as violence has often been found to be the result of an inability to solve conflict or a lack of support from classroom teachers (Chen, 2003).

Outline of This Dissertation

Following this introduction, Chapter 2 of this dissertation is a literature review that begins by connecting foundational concepts in children's apology research, including peer conflict, social repair, and apologetic communication as an avenue for repair, as well as establishing the theoretical foundation for this work. Next, I address relevant developmental timelines in early childhood, focusing on apologies and the development of moral emotions and prosocial reasoning, nonverbal and linguistic communication skills, and socio-affective and socio-cognitive development. Then, I discuss the current limitations of children's apology research before presenting the purpose of this study. Finally, I outline two study aims: (a) to develop effective and appropriate measures that capture children's nonverbal and verbal strategies in apologetic communication and (b) examine the interrelationships between a child's communicative choices, knowledge of social norms and expectations, and relational outcomes, and highlight the related research questions and hypotheses relevant to these two aims.

Based on my initial questions and my concerns that current research was not fully capturing how preschool children use and respond to apologetic communication, my approach to researching preschool children's apologetic tendencies had to include the two key components mentioned previously: (a) it needed to highlight the ways in which children currently enact apologies, and (b) it needed to measure the effectiveness of apologies using measures that were salient to preschool children. I also wanted to try to capture more information about what factors may be influencing children's apologetic strategies in the classroom. Based on these underlying premises, my dissertation research included six components, which I outline in Chapter 3: Methods: (a) observations of preschool children engaging in peer conflict and repair, (b) the creation of an apology coding frame to capture verbal and nonverbal communication tendencies and forgiveness markers, (c) a peer likeability sorting task that captured data on how children viewed their peers before and after conflict that occurred during the day, (d) interviews with the children participants to learn more about their understanding and views of apologies, and (e/f) parent and teacher surveys that explored their views and expectations regarding children's apologies. These six components are outlined in addition to providing details about the research design, study participants, setting and location, data collection procedures, data analysis plans, and validity, reliability, and methodological measures of integrity.

In addition to participant flow and recruitment, Chapter 4 presents the results from the quantitative and qualitative methods used. I first present quantitative results from the data collected from observations evaluated using the IMPACT (Interpreting the Meaning of Preschool Apologetic Communication Tendencies) Apology Coding Frame developed for this study. I also present quantitative results from the Peer Likeability Sorting Tasks completed by child participants. Then, I used qualitative methods to share results from the child participant interviews, followed by a thematic analysis of parent and teacher survey responses. Finally, I use mixed methods to compare the data collected for this study.

In the final chapter, Chapter 5, I discuss the central contributions and interpretations of the significance of findings for the field in relation to my two study aims. Then, I examine the similarities and differences between reported results and previous research on children’s apologies and discuss this study's limitations and strengths. Finally, I outline the study's theoretical and methodological implications, discuss the implications of these findings for future research in the field, and conclude with the overall impact of this study on children’s apology research.

Chapter 2: Literature Review

Peer conflict is a common occurrence in preschool classrooms. Between the ages of 3 and 5, children learn how to play cooperatively with their peers, which requires developing skills in both empathy and self-regulation. Children are taught as toddlers that verbal apologies are a way to show remorse and repair relationships after a transgression, and they are already capable of competently apologizing by age 3 (Ely & Gleason, 2006). What is less clear is the role of apology use in actually repairing preschool peer relationships. Research examining older children's apologies suggests that children have a fairly good conceptual understanding of verbal apologies as social repair scripts by the time they are in early elementary school (Banerjee et al., 2010; Drell & Jaswal, 2016) and view apologies as having a positive effect on transgressor evaluations (Darby & Schlenker, 1989; Smith & Harris, 2011). Unfortunately, this basis for understanding children's apologies is based on research focused on hypothetical scenarios or low stakes experiments with almost no direct interactions between a child and a peer. This is highly problematic in three ways.

First, current methodological approaches do not capture how children use apologetic communication or respond to peer apologies in naturally occurring peer interactions. Second, current research focuses on verbal apologetic behavior and fails to account for the impact of nonverbal apologetic communication among peers. Preschool children are still developing language skills and may rely heavily on nonverbal remorse expressions to communicate concern and regret and to evaluate the feelings of a transgressor. Third, conducting research out of the context of a preschool classroom fails to account for possible differences in conceptual understanding and behavior. Conducting research under "cool" cognition conditions, where emotional stakes are low or children are simply evaluating a story of people apologizing, is vastly different from conducting research in the preschool setting, where children experience "hot" cognition conditions in which their emotional state during peer conflict diminishes their cognitive functioning. Also, researching children's apologies under laboratory conditions fails to account for how the expectations and interventions of preschool teachers may influence peer conflicts and social repair in the preschool setting. These problems must be addressed to make sure that we are helping children learn communication strategies that are relevant and successful for social repair.

It is vital to examine apology use as a social repair strategy during the period of development when children are learning how to self-regulate and manage peer conflicts (ages 3 to 5), as these early experiences influence our later understanding and behaviors regarding social repair. Therefore, in this chapter, I will highlight the unique conditions necessary for understanding and researching preschool children's apologetic communication behavior by (a) connecting the foundational concepts in children's apology research and establishing a theoretical foundation for examining preschool peer apologies, (b) outlining the influence of developmental timelines on peer interactions in early childhood, and (c) providing an overview of current research and its limitations in capturing the use and impact of apologetic communication for preschool-aged children. I will then outline how the purpose of the current study meets these unique needs and begins to fill the significant gaps in the literature.

Connecting the Foundational Concepts in Children's Apology Research

Children's apology research is primarily focused on the use of the word "sorry" and is rarely examined as a response to actual peer conflict (See Sell & Rice, 1988; Spivak, 2016). It is understandably easier to examine apology use under controlled conditions, where the transgression is minor and committed by an adult researcher or a hypothetical peer who provides a written note of apology. In reality, children experience conflicts under very different conditions. A conflict with a peer carries the additional weight of being personally invested in how play is occurring and whether or not their peer will want to continue playing with them. Evaluating and responding to peer conflict in a way that leads to social repair is especially difficult for preschoolers as they are still learning how to regulate their own emotions and behaviors. To better understand how children understand and use apologies as a social repair strategy to resolve peer conflict, we must first understand how peer conflict, social repair, and apologies are defined in children's apology literature.

Therefore, in this section, I will provide conceptualizations of key components of children's apology research. I will begin by conceptualizing peer conflict in the context of preschoolers' interpersonal interactions. Then, I will discuss how social repair following peer conflict can be defined and understood in a way that is relevant to preschool-aged children, Finally, I will address how apologetic communication has been narrowly defined thus far in the literature and how an interpersonal communication lens can add depth to how children's apologies are being studied in other fields.

Peer Conflict Among Young Children

During the preschool years, children's play behavior changes and becomes more integrated with the play of others (Bukatko & Daehler, 1998). In the toddler years, children often play independently or by engaging with other children in parallel play (where they play next to each other in similar ways, like building their castles near each other in a sandbox). In the preschool years, children engage in more cooperative play (where they play next to each other, like building a sandcastle together). This shift in how play occurs leads to higher levels of conflicting goals for play, which leads to higher levels of peer conflict. Peer conflict is so common in preschool that, in a study observing 400 children, ages 2 to 4 years old, 90% of the children observed were involved in a peer conflict when only observed for one or two five-minute periods (Chen et al., 2001).

In addition to a shift in how children engage in play together, children also experience shifts in the rules for play. Instead of playing with older or younger siblings in their home environment with established rules and expectations, they need to learn to play with new peers in an unfamiliar context at preschool. In a preschool setting, children share the toys and resources with no apparent basis under which a child can assume or keep ownership of an item unless the item is brought from home. For example, when playing at home with peers, children have a strong sense of an item they own as "mine" and a toy that their friend brought over as "theirs," which helps them communicate and negotiate conflicting goals (Hay, 2006). At preschool, the parameters of belonging are unclear, and children do not have any "home field advantage" over how play occurs or what items they have a right to claim if they want them. This ambiguity makes it more likely that disputes over items, territory, and how play is happening will occur.

These unique conditions under which peer conflict occurs in preschool make it necessary to conceptualize and operationalize peer conflict using parameters relevant to preschool experiences. As a working definition for this study, I define children's peer conflicts based on Barki and Harwick's (2004) interpersonal conflict framework, in that peer conflicts are dynamic interpersonal interactions between children in a similar social group in which there is either a provocation, perceived disagreement, or instance of goal interference by another within the interpersonal interaction. This definition appropriately conceptualizes peer conflicts as interpersonal interactions that are dynamic and influenced by both children's perspectives and interpretations. This emphasis on fluidity is essential because it acknowledges that the processes that co-occur during a conflict interaction impact the outcome of the interaction itself. It also signifies a need to measure the behaviors of both the transgressor and the victim in a conflict.

Operationalizing preschoolers' peer conflicts requires the consideration of both previously identified conflict behaviors and observed conflict behaviors. Commonly identified peer conflicts in the preschool age range include verbal provocation and nonverbal provocations, such as physical attacks, hitting, and pushing (Baumgartner & Strayer, 2008). In the middle of this age range, by about age 4, there is an increase in conflict events that focus on socially oriented issues, like refusing to share or excluding another from play (Chen et al., 2001). In prior studies, I have also observed that children use verbal and nonverbal communication to attempt to interfere with one another's play goals and how play is occurring. Therefore, in this study, I have conceptualized preschool peer conflict as including relational disputes over sharing and inclusion, intentional and unintentional physical disputes (including aggression, physical contact, physical disputes over resources, and physical disputes over how play is occurring), and verbal disputes (including verbal aggression, verbal disputes over resources, and verbal disputes over how play is occurring).

Before shifting to how children attempt social repair following peer conflicts, it is important to acknowledge that peer conflict can be incredibly stressful for preschool-aged children because it threatens the individual's physiological system, face ego, and the peer relationship itself (Murphy & Eisenberg, 2002; Lawler-Row et al., 2006). Peer conflict directly induces personal stress, which requires children to develop and be able to use coping strategies to handle peer conflicts (Baumgartner & Strayer, 2008). For children in early development, coping strategies typically include avoidance, aggression, or prosocial behaviors (Tamm et al., 2014). Often, the experience of a peer conflict taxes children's physiological and sociocognitive systems (Lazarus & Folkman, 1984), leaving children with few resources for prosocial repair strategies like apologizing or offering to help.

In fact, preschool children are at an age where they are just developing self-regulatory skills and often lack the necessary cognitive, emotion-regulation, and interpersonal skills to interpret social cues, communicate intent, and amend relationships. Preschool-aged children are just beginning a period of rapid development in executive functioning (Sabbagh et al., 2006), which includes skills such as response inhibition and cognitive conflict resolution (Zelazo et al., 2003). They are also at an early stage of developing theory of mind (ToM) reasoning skills, which enable children to understand that beliefs, desires, and intentions cause behavior, and to be able to consider (and take) the perspectives of others during interactions (Astington & Gopnik, 1991; Sabbagh et al., 2006; Sabbagh & Bowman, 2018). Therefore, how children cope with peer conflict and respond to their peers when their system is stressed is directly influenced by their social, emotional, and cognitive development and experiences.

Although learning to cope with peer conflict is difficult, it is a key component of development that leads to cognitive shifts in understanding (Piaget, 1931) and is considered an essential part of social skills development (Baumgartner & Strayer, 2008; Baumgartner & Bombi, 2005; Chen et al., 2001; Strayer, 1989) and a vital component of social, moral, and cognitive development (Ashby & Neilsen-Hewett, 2012; Chen et al., 2001; Laursen et al., 2001). Therefore, we must recognize the value of children's conflict experiences and help them develop skills for social repair that directly lead to positive relational outcomes like joint play and continued friendships.

Social Repair After Peer Conflict

Social repair following peer conflict looks different depending on one's age. Adults have a significant amount of agency over whom they spend time with, whereas children often need to figure out how to play with whoever is available at the places their caregivers bring them. spend time with, whereas children often need to figure out how to play with whoever is available at the places their caregivers take them. Adults are more likely to be able to take another's perspective or justify another's behavior, while children may have a more difficult time seeing past their own feelings and understanding someone else's behavior. This makes it especially important for children to be able to navigate friendships and repair relationships when there is conflict. Therefore, in this section, I will define social repair in a way that is relevant to preschool-aged children by outlining what repair strategies commonly look like for preschool-aged children and providing a definition and conceptualization for preschool social repair that includes age-appropriate outcome measures. I will also discuss the implications for children's attachment on their engagement with social repair strategies and highlight the importance of positive social repair strategies for children's short- and long-term well-being.

Developing the ability to resolve peer conflict is necessary for the repair of social relationships and the building and maintaining of friendships over time (Laursen & Pursell, 2009). While peer conflict provides important opportunities for learning positive social repair skills (such as perspective taking, active listening skills, and enacted support (e.g., empathy), which lead to more adaptive conflict resolution strategies like negotiation), these skills are not common at the onset of preschool but develop over time. From age 2 to age 5, children shift from using strategies like crying to get what they want in early preschool years to negotiating in later preschool years (Umezaki et al., 2024). By 4 to 5 years old, children use more autonomous coping strategies and consistently use language to get items that they want (Umezaki et al., 2024). While young children commonly rely on coercion, negotiation, or disengagement to resolve peer conflict, by middle childhood, negotiation becomes more common, and coercion declines (Laursen et al., 2001). By adulthood, we commonly use more adaptive coping strategies like cognitive restructuring (Seguin & Roberts, 2017). We also solve conflicts adaptively through accommodation and mutual problem-solving (Skinner et al., 2003), by listening to and empathizing with others. These strategies evolve from experience with conflict, but they are also influenced by development and differences in how individuals respond to conflict.

Because social repair strategies vary across the life-span and are directly impacted by development and experiences, I define and conceptualize preschool social repair for this study as (a) a child's ability to productively cope with the stressors of peer conflict by regulating their emotions and behavior (as opposed to coping through aggression or avoidance) and (b) the ability to work with the other child to mutually resolve the conflict and return to a baseline state in which there is a positive sense of self and a positive view of the other child involved. Markers of successful social repair for preschool-aged children need to signal that the relationship has been, or is in the process of being, mended, such as a return to joint play, self-reports of well-being, or positive views of the other. These markers may include nonverbal behaviors (e.g., smiling, sharing, or playing together) and verbal comments (e.g., "It's okay." or "You're still my friend?”), which indicates forgiveness and repair. In this study, preschool social repair is operationalized through three measures of successful social repair: (a) the observance of verbal and nonverbal forgiveness markers following peer conflict (specifically, verbal forgiveness, reassurance, acknowledgment of accidental intention, or offers of forgiveness/inclusion and nonverbal forgiveness including sharing resources, physical indicators of forgiveness, and playing together), (b) indications of peer likeability on a peer sorting task following a conflict, and (c) observing children who were involved in peer conflict return to play following conflict.

It is important that outcome measures capture preschool children's successful social repair as indicated by forgiveness, peer likeability, and play because simply resolving a conflict, especially with the help of a teacher, does not necessarily mean that the social relationship is in repair, especially for preschool-aged children. In their analysis of over 900 episodes of spontaneous conflict between 3- to 5-year-old peers, Baumgartner and Strayer (2008) discovered that social reactions to conflict with peers occur on a fight-flight continuum. Behaviorally, conflict engagement ranges from avoidance to standoffs to mediation by a teacher or other adult or peer (Baumgartner & Strayer, 2008). These reactions may or may not lead to social repair. In fact, the resolution of a peer conflict among children is most commonly obtained through coercion, negotiation, or disengagement, as discovered in a developmental meta-analysis of children and adolescent peer conflict resolution strategies completed by Laursen et al. (2001). Positive social repair occurs most commonly through negotiation, whereas a lack of social repair is typical when peer disputes are resolved through disengagement/avoidance or coercion (Laursen et al., 2001). Although the resolution of a conflict signals the "end" of the conflict, strategies that involve disengagement do not effectively serve the child in developing skills that lead to social repair.

This engagement-disengagement dichotomy is an important component of social repair tendencies in the preschool age range because it directly impacts whether a child transgressor can regulate their emotions and behavior and engage in a repair strategy like apologizing or showing remorse for their behavioral choices. The likelihood of engagement is impacted by their developing social, emotional, and cognitive skills (which will be addressed in a later section of this chapter) as well as each child's experiences and internal working models.

According to attachment theory, children have attachment behavioral systems that motivate them to seek or maintain proximity to caregivers/attachment figures, and their caregiver's responses to their stressors lead to the development of internal working models that influence their views of themselves and their expectations for social interactions (Bowlby, 1988; Ainsworth, 1989). Children with secure attachments and positive working models can better regulate their emotions, leading to adaptive social strategies. For example, children with secure attachments are more likely to engage in prosocial behaviors (Groh et al., 2017; Schneider et al., 2001). Whereas children with insecure attachments and negative internal working models are more likely to engage in affect-regulation strategies that are either hyperactivation strategies (resistant behaviors, clinging behaviors/coercion) or deactivation strategies (avoidant behaviors, proximal distancing/thought-suppression; Pietromonaco & Powers, 2015).

These associations between attachment and either engaging, avoiding, or using coercive behaviors in the face of conflict have direct implications for children's social competence. Multiple meta-analyses have confirmed positive associations between securely attached children and social competence with peers, while insecure attachment is negatively associated with peer competence (Groh et al., 2014; Schneider et al., 2001). Work evaluating children's secure attachment representations suggests that internal working models are significantly and positively associated with peer competence (Verissimo et al., 2014). Children with secure attachment styles score lower on measures of externalizing problems (associated with conduct problems, aggression, and hostility) than those with disorganized, avoidant, or resistant attachment styles (Fearon et al., 2010). They can also successfully regulate their emotions in relationships outside of their caregiver relationship due to the effective emotion regulation strategies they have developed with their caregiver (Brumariu, 2015).

In contrast, insecurely attached children are more likely to be overwhelmed by their emotions due to poorer coping skills. Dysregulation of emotion is associated with acting out or disruptive behavior during conflict and anger has a negative association with verbal responses that are constructive in nature (Murphy & Eisenberg, 2002). Therefore, insecurely attached children are more likely to be overwhelmed by emotions and use coercion or avoidance tactics, while securely attached children are more likely to use adaptive emotion regulation strategies (Pallini et al., 2018; Zimmer-Gembeck et al., 2017).

Additionally, securely attached children are more likely to display prosocial behaviors toward peers (e.g., recognizing another’s distress and showing remorse or apologizing for behavior; Gross et al., 2017) and are better able to regulate their emotions and engage in positive conflict resolution strategies (e.g., negotiation). This tendency to engage is an important consideration for children’s apology research because although children are capable of a verbal apology by the time they are toddlers, they may not always be able to regulate their emotions enough to engage in verbal social repair with peers. As transgressors, young children may struggle to regulate their emotions and apologize, especially verbally, without the help of an intervening teacher, and as victims, children may resist or avoid engagement in social repair, especially if they have insecure internal working models which make it more challenging for them to regulate their emotions and engage in repair.

The above components are important factors to consider when researching children's social repair because helping young children navigate peer conflict and enact successful social repair strategies can increase their overall well-being and decrease their risk for later negative outcomes. Children who can amicably resolve peer conflicts have higher chances of gaining peer acceptance and participating in friendships (Joshi, 2008) which may be protective against adverse mental health outcomes (Cooley et al., 2015; Schacter et al., 2021). However, children who struggle with social repair or use maladaptive strategies like submission or using force experience more adversities to peer conflict, like victimization, friendlessness, or rejection by peers, which can have damaging short-term outcomes and long-term impacts including self-blame, feeling inferior to peers, depression, and problems adjusting socially (Salmivalli & Isaacs, 2005; Hawker & Boulton, 2000). Therefore, it is increasingly important, especially as children spend more time during developmental years in group settings (Ashby & Nielsen-Hewett, 2012), that we identify and teach peer conflict resolution strategies that result in the successful repair of social relationships and help children learn to avoid resolving conflicts by coercion or force which could be a pathway to bullying later in life.

Apologetic Communication as an Avenue to Social Repair

Successful social repair is an interactive process in which a transgressor needs to recognize that their victim is upset and try to make amends for their behavior and a victim needs to feel acknowledged and engage with and accept whatever amends the transgressor is offering. Apologies have been found to communicate remorse (Darby & Schlenker, 1982), increase trust (Ma et al., 2018), and mend relationships following transgressions for both children (Darby & Schlenker, 1982, 1989; Drell & Jaswal, 2016) and adults (Beyens et al., 2015; Friedman, 2006). As a social repair strategy, apologetic communication conveys an acknowledgment of wrongdoing and regret for the transgressor's behavior (Friedman, 2006; Lazare, 2004) which can improve the victim's impression of the transgressor and begin to heal the relationship (Darby & Schlenker, 1982, 1989; Ohbuchi et al., 1989; Ohbuchi & Sato, 1994). Although research examining adult apologies has been extensive, fewer than two dozen studies have examined children's views on apologies to date, and only three studies in the US have examined actual apology use by children (for child apology use in the home setting see Ely & Gleason, 2006; for child apology use in the school setting see Sell & Rice, 1988; Spivak, 2016; for international research of children's apology use see Schleien et al., 2010; Kampf & Blum-Kulka, 2007). This is problematic, because, thus far, we have very little data regarding how children use apologetic communication or react to apologetic communication used by other children. Therefore, in this section, I will address how children's apologetic communication has been narrowly defined in the literature and argue that conceptualizing children's apologetic communication as encompassing both verbal and nonverbal behaviors would add depth to how children's apologies are currently being studied.

Adult apology research commonly accepts that, for a successful apology, a victim needs to see that a transgressor is in distress and that the transgressor is communicating sincerity of the remorse through guilt, shame, or anxiety (Friedman, 2006; Lazare, 1995). However, apology research examining children's apologies has predominantly focused on verbal apology terms, e.g. the inclusion of the word 'sorry,' to the exclusion of any other markers of remorse (Ely & Gleason, 2006; Kampf & Blum-Kulka, 2007). I believe this to be an underestimation of children's abilities to both enact and evaluate remorse in connection with apologetic language.

By early elementary school, children view apologies as communicating remorse and concern (Darby & Schlenker, 1982). This affirms that children understand that apologies are more than just the word "sorry" early in development. Smith et al.'s (2010) research indicated that children use other communicative cues to deem an act as an apology, even when the term 'sorry' is not used, and Vaish et al.'s (2011) work indicated that nonverbal expression used by adult researchers following transgression events could be as important as the verbalization of apology itself. Therefore, in the context of children's apologies, I contend that it is necessary to conceptualize apologies as including both apologetic language and apologetic nonverbal remorse behaviors, such as vocality, frowning, and neck-touching, to fully capture the dynamic communicative exchange inherent in expressing remorse.

Research in the field of communication studies has not conceptualized nonverbal acts of apologetic communication among children; however, nonverbal elements of apology delivery have been examined in the adult population (Hornsey et al., 2020; Yamamoto et al., 2021) and children's research has begun to consider the expression of remorse as having an impact on forgiveness (Amir et al., 2021; McElroy et al., 2023; Oostenbroek & Vaish, 2019; Vaish et al., 2011). If we consider an apology as defined by an expression of remorse, we must include ways that remorse is communicated nonverbally in addition to verbally when the apology occurs as a part of interpersonal interaction. For adults, nonverbal apologetic displays of remorse include prosodic effects, or vocalic cues, the acoustic and rhythmic vocalization of language, which indicate emotions of guilt or sadness such as a decrease in pitch, volume, and rate (Banse & Scherer, 1996). Nonverbal apologetic communication also includes physical cues of guilt such as gaze aversion, bodily tension, distress (Kochanska et al., 2002), frowning, neck-touching, and shame, such as downward head and gaze movements, controlled smiles, face touches, and blushing (Julle-Daniere et al., 2020).

Verbal and nonverbal messages are mutually influential and interdependent. Anyone having received an insincere apology understands that words alone may not be enough to accurately communicate the genuine regret or remorse necessary to help repair social relationships after a transgression. Therefore, conceptualizing children's apologetic communication behavior as including both verbal utterances and the nonverbal interpersonal cues mentioned above has the potential to enrich our understanding of how children enact apologies. It would also help us evaluate what components of apologetic communication are most meaningful to a child when receiving an apology from a peer.

Theoretical Foundation

The theoretical perspective of the current study is grounded in life-span theory which views communication as dynamic and evolving over the lifespan. Life-span theory considers both psychological and sociological factors (Nussbaum & Baringer, 2000) and involves describing, exploring, and examining modifications of the communication process across the lifespan (Pecchioni et al., 2005). Under the worldview of life-span theory, both organismic and contextualist views are integrated and explanatory (Lerner, 2006; Lerner et al., 2013; Overton, 2007). By taking a relational developmental systems approach to life-span development, I contend that apologetic communication occurs within a dynamic, or changing, set of interaction processes at many levels and within many systems. Apologetic communication as a social repair strategy is a constantly changing co-experience that is influenced by early psychological and social development and experiences, as well as situational context and the interactive exchange occurring between dyadic partners. Development occurs at both a personal level constituted by psychological concepts (e.g., feelings and thoughts with conscious, intentional qualities that are open to interpretation) and at a sub-personal level of action systems (e.g., concepts of self or attachment behavioral systems; Overton, 2010; 2015). How individuals understand thinking and feeling is an emergent system influenced by cognitive, emotional, and motivational subsystems (Overton, 2010).

Within this approach, development occurs both at a personal level of feelings and thoughts and at sub-personal level of action systems, which together influence social skills and interactions, or rather coactions. Within life-span approaches, coaction is a term regularly substituted for interaction (Gottlieb, 1991; Lerner et al., 2015). Coaction recognizes the dynamic nature of interaction and purposes that an experience like a transgression, followed by apologetic communication, followed by repair, would not be sketched out as a series of back-and-forth exchanges, but rather as a co-occurring event for both individuals. From a life-span perspective, a peer conflict interaction and attempt at social repair, if it occurs, is not linear or even bidirectional. Rather, it is a dynamic coaction simultaneously influenced by both parties and evolves jointly (Lerner et al., 2015).

By understanding children's apology research through a life-span approach, this study aims to highlight two key considerations necessary for examining preschool peer apologies: (a) apologetic communication use, function, and meaning changes over the life-span and is continuously impacted by contextual elements, such as relational goals and perceived expectations, and (b) these changes in apologetic communication tendencies are directly influenced by emerging language skills and dramatic shifts in emotional, social, and cognitive developmental that occur from infancy to middle childhood. To highlight the importance of these considerations, I will outline the changes in apologetic communication tendencies over the lifespan in this section, and discuss the second, developmentally focused, consideration in the next section on developmental timelines in early childhood.

Just out of infancy, in the early toddler years (1 to 2 years old), children are able to (a) recognize others' emotions and soothe others who are in distress (Bukatko & Daehler, 1998) and (b) experience moral emotions (e.g., pride, shame, and guilt; Lewis & Haviland-Jones, 2000). In other words, children, even at this young age, understand social rules, recognize social expectations, and exhibit prosocial tendencies toward others. By the time they are older toddlers (2 to 3 years old), children are able to (a) use basic verbal apology scripts and (b) begin to use apologies without prompting from parents in appropriate contexts (Ely & Gleason, 2006; Schleien et al., 2010). Toddlers are able to recognize the basic meaning of remorse behind apologies and use apologies when appearing to feel guilt or shame for the function of making amends (Kochanska et al., 1995).

In the early preschool years (3 to 4 years old), children's apology use increases. At least in one observational study, children are already using apologies at rates similar to their mothers by age 4 (Ely & Gleason, 2006). During these years, children begin to shift from a hedonistic orientation (e.g., focusing on personal rewards) to an other-oriented orientation (e.g., focusing on the needs of others; Bukatko & Daehler, 1998), and by the later preschool years (4 to 5 years old) children begin to develop the ability to recognize guilt displays in others (Vaish et al., 2011). At this age, children exhibit varying understandings between verbal and nonverbal strategies for apologies and adopt different responses, depending on their understanding of the intent and emotions associated with the apology issued. For example, Vaish et al.'s (2011) study found that children understand the appeasement function of apologies by age 4 but were not as good at recognizing the emotion behind apologies in others until closer to 5 years old.

Other studies have identified additional shifts in apology perceptions in this same age range. Oostenbroek and Vaish (2019) found that 4-year-old children were more forgiving of an adult transgressor who explicitly apologized than one who did not. However, 5-year-old children tended to be more forgiving when remorse was evident, even if a transgressor did not verbally apologize (Oostenbroek & Vaish, 2019). Waddington et al. (2023) also identified a shift during this age range: 5-year-olds (but not 4-year-olds) seemed to understand when reasons should accompany apologies. In addition, they weighed "good" reasons for moral transgressions much more favorably than "bad" reasons or apologies alone (Waddington et al., 2023). Additionally, when a repeated offender issued apologies relying on the same reason (as opposed to different reasons) for the same harm, children were less likely to trust the offender (Waddington et al., 2022). In other words, children begin to recognize that simple apologies alone may not be sufficient to justify repeating harmful acts and expect the offender to demonstrate behavioral reform to avoid future harm. This speaks to a shift in both cognitive and moral reasoning regarding apologies between the ages of 4 and 5 years old: Older children seem to be placing more importance on intention, showing remorse, and explanations for transgressions.

Overall, apology use is a commonly expected response to transgressions in young children (Fujisawa et al., 2006). As children age, they (a) use apologies more frequently (Kampf & Blum-Kulka, 2007; Schleien et al., 2010) and (b) use more elaboration in their apologies (e.g., explaining what they are apologizing for; Chen & Ren, 2020). By early elementary school, children begin using prosocial reasoning to express concern for others (Eisenberg et al., 2015) and view apologies as a way to communicate remorse and concern (Darby & Schlenker, 1982).

In middle childhood (6 to 12 years old), there is a shift in the meaning and function of apologies. In this age range, children not only view apologies as a way to communicate remorse and concern, but they also begin to attribute social meaning to apologies and judge transgressors based on the quality of their apologies. In observational research in elementary and middle school contexts, children begin to have a social expectation for peer transgressors to apologize (Sell & Rice, 1988). This social expectation for an apology as a means of communicating remorse has direct implications for how victims evaluate transgressors. Multiple studies have confirmed that early elementary-aged children view others who apologize as more remorseful and feeling 'worse' than those who did not apologize (Smith, et al., 2010; Smith & Harris, 2011).

Additionally, those who apologize are more well-liked (Banerjee et al., 2010), receive less severe consequences, and are evaluated with better overall impressions (Darby & Schlenker, 1982). In Darby and Schlenker's (1989) later study involving third-person evaluations of a vignette involving child characters, even when children were told that a transgressor had a 'bad' reputation, their apology seemed to carry some weight and was taken at face value, even if the character later lacked remorse. Transgressors who apologized were evaluated as more likable and punished less. An important consideration in this study is that the child character in the vignette was "riding a bike and they broke it" (Darby & Schlenker, 1989, p. 365), which could be perceived as accidental. Children are more likely to forgive hypothetical peer transgressors who committed an accidental transgression than those who committed an intentional transgression (Amir et al., 2021). This evaluation of intention speaks to how the process of social repair is a dynamic coaction between transgressor and victim.

Although children generally tend to view transgressors who apologize more favorably than those who do not (Banerjee et al., 2010; Darby & Schlenker, 1989), research results have been somewhat inconsistent regarding how children feel after receiving an apology. Work evaluating elementary students' naturally occurring peer conflict data showed that apologies, though relatively rare (occurring in 18 out of 541 peer conflicts), were associated with more peaceful interaction after peer conflicts (Spivak, 2016), suggesting that apologies helped children feel better about the transgressor and the situation. Additionally, 4-to-7-year-olds who experienced receiving an empty envelope that was supposed to contain stickers from a hypothetical peer child felt better if the envelope contained a note saying that the other child was "really sorry" (Smith & Harris, 2011). However, in other instances, children's predictions about apologies did not match their feelings about apologies after experiencing them. At home, children prefer spontaneous apologies (i.e., apologies not prompted by an adult; Schleien et al., 2010). However, in the lab, children predict that they will feel better if they receive a spontaneous as opposed to a prompted apology; but, when they are directly the victim of a transgression (an adult researcher knocking over their tower) they felt bad after receiving an apology whether the apology was prompted or not, even though they did feel that the adult actors who spontaneously apologized were “sadder” (Drell & Jaswal, 2016).

These findings suggest that the victim’s impression of remorse and the type or severity of the transgression might impact whether the victim feels better after an apology. It is possible that individuals’ attribution to the cause of the offense (e.g., intentional harm or accidental oversight) may lead to a child’s interpretation of and willingness to accept the apology as it does for adults (Kim, 2023; Nobes et al., 2017). However, more research into how children react to peer transgressors, as opposed to vignettes or adult actors, is needed. For now, it does seem that verbal apologies and displays of remorse are consistently evaluated favorably by young children and that those positive associations may directly impact the potential for relationship repair.

Finally, it is important to consider that, although the use and perceptions of apologies shift dramatically during early childhood and continue to evolve into later childhood, the effectiveness and need for apologies continue to change over the lifespan into adulthood. For example, for interpersonal adult apologies, two conditions become increasingly significant: (a) the sincerity of an apology and (b) the timing of an apology.

For adults, the perceived sincerity of an apology has a direct impact on its effectiveness. If a victim does not perceive the apology as sincere, it is unlikely to be effective, even if the apology includes words that indicate remorse or regret (Ebesu Hubbard et al., 2013). Sincerity is directly related to both forgiveness and a reduction of negative emotions for the victim. In romantic relationships, victims are more likely to forgive their partner if they have offered a sincere apology (Bachman & Guerrero, 2006).

The perception of sincerity during apologies is positively related to higher communication satisfaction and also decreases negative emotions for the victim, such as anger and irritation (of note, soft negative emotions like hurt and sadness were less affected and may take longer to dissipate; Ebesu Hubbard et al., 2013). Additionally, nonverbal assurances facilitate relational recovery after transgressions among couples (Kelley & Waldron, 2005). For example, blushing indicates embarrassment and leads to the evaluation of apologies as more sincere and increases the likelihood of forgiveness, especially when combined with expressions of shame as opposed to anger (Thorstenson et al., 2020).

The timing of verbal apologies also becomes crucial for social repair in adulthood. While children seem to move through the process of conflict resolution and social repair quickly, adults need time to feel heard and process their feelings before an apology can be effective (Frantz & Bennigson, 2005; Ebesu Hubbard et al., 2013). For adults, offering an apology too early, before the victim is ready for de-escalation, might make the victim feel pressured or unheard (Franz & Bennigson, 2005). Because of this, later apologies are seen as more satisfying and appropriate (Ebesu Hubbard et al., 2013). Ultimately, apologies are meaningful for social repair (Ebesu Hubbard et al., 2013), because even though the timing of an apology is important, not receiving an apology at all, even if a victim feels heard and understood, leads to the lowest ratings of outcome satisfaction (Franz & Bennigson, 2005).

Developmental Timelines in Early Childhood

As mentioned above, the second important consideration necessary for the examination of preschool peer apologies is to acknowledge the specific influence of children's emotional, social, and cognitive development on apologetic communication tendencies in this period of the lifespan. The following sections outline the relationships between apologies and the developmental timelines associated with moral emotions and reasoning, linguistic and nonverbal communication skill development, and affective and cognitive processes during the preschool years.

Apologies and the Development of Moral Emotions and Prosocial Reasoning

During the early years of the lifespan, from birth through age 5, the processes of emotional and social development undergo dramatic change (Bukatko & Daehler, 1998; Cao et al., 2023). From a life-span perspective, it is important to consider that these changes are due to both early individual processes and experiences and the increased opportunities for socialization that early childhood affords. In this section, I propose that the development of moral emotions and prosocial reasoning directly influences an individual's ability to recognize another's distress and communicate remorse through apologetic behaviors.

Before enacting social repair strategies, a transgressor must be aware of others and feel a need to express remorse for their behavior. Although moral emotions do not develop until toddlerhood, from birth, newborns show interest in and concern for others by reacting to other infants' cries and their own parents' emotions and behaviors (Bukatko & Daehler, 1998). This continues into later infancy, as EEG imaging and simple approach behaviors of children as young as 8 months old suggest that there is a motivational dimension to helping distressed peers from very early on that could be early indications of empathy and pro-social behavior (Crespo-Llado et al., 2018). In roughly the second half of the second year, the consciousness of self-referential behavior leads toddlers to begin feeling embarrassment, envy, and empathy (Lewis & Haviland-Jones, 2000). From two and a half to three years old, toddlers develop a deeper understanding of rules (i.e., internal and external standards), which facilitate their burgeoning emotions of pride, shame, and guilt (Lewis & Haviland-Jones, 2000). The combination of recognizing and responding to others' distress and developing an understanding of moral emotions and social expectations are the first steps to evaluating the need for social repair.

The development of moral emotions is followed by increased growth in *moral reasoning* in the preschool years which directly influences children's tendencies to apologize and evaluate transgressors. Around age 4, children become more sensitive to the mental state of others (Wellman et al., 2001) and feature those states in the normative judgment of others (Waddington et al., 2023). For example, they use moral reasoning to judge transgressor's actions based on their intentions (Nobes et al., 2017). Also, there is a developmental shift in how heavily children weigh transgression outcomes, like a victim's hurt feelings or damage to an object, and how important intentionality is between 4 and 5 years old. Four-year-olds tend to be more sensitive to the outcome of a transgression and weigh intention less heavily than 5-year-olds (and older children; Nobes et al., 2017). Also, when evaluating the intentions of adult transgressors, intentions were more closely tied to how "good" of a reason was given for the action by the adult transgressor at 5 years of age, but not at 4 years of age. This suggests that there may be a developmental shift in how children evaluate intentionality and explanations in moral reasoning during the preschool years.

Finally, a child's ability to interpret and understand emotion directly influences the types of strategies they use to resolve peer conflict. Children's emotional comprehension, which includes the ability to encode nonverbal cues and label the emotions of others, interpret their meaning, and reason about social problems, increases between 3 and 6 years of age (Cao et al., 2023; Lipton & Nowicki, 2009). This increase in emotional comprehension leads to more positive social interactions and better peer relationships (Mckown et al., 2013), and positively predicts positive conflict resolution strategy tendencies in classroom settings (Cao et al., 2023).

Apologies and the Development of Nonverbal and Linguistic Communication Skills

The ability to communicate apologetic remorse in early childhood is dependent on the development of early communication skills. During infancy and early childhood, the foundation of delivering effective apologies, apologies that express sincere remorse and positively impact social repair, are established through: (a) increased sophistication in nonverbal communication skills and (b) advancements in linguistic processing and emotion labeling. In this section, these foundations will be highlighted in support of understanding nonverbal and verbal communication development occurring in infancy and early childhood as a part of broader developmental considerations necessary for the exploration of apologetic communication use during the preschool years.

From a nonverbal standpoint, social communication begins at birth (Bradshaw et al., 2021) as infants show socially adaptive preferences for caregivers (Shultz et al., 2018) and use crying as a social behavior to communicate basic needs (Lester, 1985). Social communication is supported by an infant's innate ability for imitation, both in vocal mimicry and emotional displays, and by the positive reward systems inherent in nonverbal communication with a caregiver (Knapp et al., 2021; Meltzoff, 1999; Salvadori et al., 2021). Infants experience exponential growth in nonverbal social abilities during the first year. By 7 months infants are already able to differentiate their nonverbal responses to various facial expressions, such as responding differently to smiles versus frowns (Whitbourne, 2012). This shows an increasing sophistication in the ability to recognize positive versus negative emotion displays in others and to respond accordingly. Between 9 and 12 months, the amount of change in facial expression, eye gaze, gestures, and sounds have been found to have critical implications for the emergence of social and language skills (Bradshaw et al., 2021). Early signs of nonverbal social communication use (i.e., acts of joint attention and gestures) are precursors to prelinguistic skills (i.e., request vocalizations and sharing interactions; Bradshaw et al., 2021) and predict later language competence (Watt et al., 2006).

In addition to nonverbal communication, language production and understanding directly impacts a preschooler's ability to engage in social repair. The development of language cognition and production begins well before children begin to speak fluently. By 7 months old, an infant can discriminate between all sounds relevant to language production (Whitbourne, 2012). Between years 2 and 3, children become capable of symbolic communication (Bates et. al., 1979) and complex language structures (Santrock, 2020). These skills transfer directly to being able to use language to express remorse, as children can use apology terms appropriately during the second year of life and become competent at verbal apologies, shown through their appropriate expression of remorse in apologetic contexts through basic phrases including the word “sorry,” by age 3 (Ely & Gleason, 2006).

Children’s early language development represents a valuable step in their ability to understand emotions and manage social relationships. For example, children’s ability to communicate apologies reflects their capacity to understand and label emotions, relationships, and social norms, reflecting contextually situated, interactionally managed, and socially engaged processes. For both younger and older children, emotional expression is positively correlated with verbal fluency (Carroll & Steward, 1984). This may be in part due to developing cognitive and language development skills that allow them to think through and talk about thoughts, feelings, and wants (Hay, 2006; Korkmaz, 2011). Additionally, increased emotional expression and verbal fluency work in tandem to help children communicate during play. For example, from the time children are toddlers they begin to use both verbal and nonverbal communication strategies in concert with each other to negotiate possession of items while they play together (Hay, 2006).

Ultimately, the rapid development of nonverbal and linguistic communication skills between infancy and age 5 has direct implications for children’s apology use in the preschool age range. Because children between 3 and 5 years old are still developing language skills and learning to recognize, understand, and label their own emotions and the emotions of others, their ability to evaluate peer conflict and respond using positive social repair strategies will vary. Preschool-aged children are uniquely situated in the lifespan in that they are experiencing explosions of communicative, social, emotional, and cognitive growth at the same time that they are experiencing high levels of peer conflict and first learning to operate under the social norms of peer relationships. All these factors directly influence each other and impact a child's engagement with and reactions to apologies. Therefore, in this study, the full age range of preschoolers was included and both quantitative and qualitative measures are used to evaluate verbal and nonverbal apologetic use and understanding.

Apologies and Socio-Affective and Socio-Cognitive Development

The final developmental consideration necessary for examining preschoolers' apologetic communication is how affective and cognitive processes develop dynamically in relation to social experiences. Just as those in the field of communication have shifted their view of interpersonal communication from a linear sender-receiver model to a dynamic model of interaction between communicators, many researchers in developmental psychology are shifting their views of development to be more dynamic. This section examines the dynamic relationship between affective and cognitive systems and their impact on apologetic communication as an adaptive social behavior.

The social behaviors preschoolers exhibit during conflict events and attempts at social repair are influenced by a dynamic relationship between affective and cognitive processes. Socio-affective and socio-cognitive processes have their own neural correlates which interact during the evaluation and experience of complex social situations and need to work together for an individual to display appropriate social behaviors (Preckel et al., 2018). The emerging neurobiological support for interaction between affective and cognitive systems is beginning to shift the models used in studying developmental systems from linear models to dynamic system models which highlight the complexity of development. Instead of viewing development as staged and organized by causal priority, those subscribing to dynamic systems views contend that development "can be envisioned...as a series of evolving and dissolving patterns of varying dynamic stability, rather than an inevitable march toward maturity" (Smith & Thelen, 2003, p. 344). Essentially, influences of environment, behavior, neural activity, and genetic activity are not linear but dynamic and subject to experiential canalization of behavior (Gottlieb, 1991).

This means that the emergence and development of socio-affective and socio-cognitive processes are experience-dependent; experiences influence neural activity (i.e., neural growth, pruning, etc.), and neural activity influences environmental interactions to impact immediate and evolving behavior over time through circular causality (Greenough et al., 1987). Therefore, how we experience and process emotion during transgression events is impacted not just by the event itself, but also by our prior experiences with transgressions and social scripts. This has direct implications for children's apology research because it indicates that the capacity for children to evaluate the need for an apology event cognitively may differ from their propensity to apologize following a transgression based on their feelings about the event. For example, they may be able to determine that an apology script should be used when evaluating a hypothetical scenario;

however, they may emotionally process a lived event in a way that they either do not recognize the need for an apology or are too emotionally overwhelmed to engage in social repair.

Because a preschool child's ability to communicate, negotiate, and accept an apology depends on their cognitive and affective capacity, it is particularly important to explore how they engage in peer conflict and apologetic communication in real time. For example, individuals may adopt different reasoning or social repair strategies depending on their varying degrees of cognitive and affective capacity. Research suggests that children are capable of effortful control, to a fairly stable extent, by 4 years old (Brownwell & Kopp, 2007). However, when a child commits a transgression, even unintentionally, we do not yet have data that suggests whether a transgression/apology event is an instance where individuals (especially children) are capable of the inhibitory control necessary to reliably consider the perspective of the victim soon after the transgression. Their unconscious dysregulation may limit their conscious representations and regulation during the conflict event.

Additionally, young children may have diminished cognitive capacity during "hot cognition events" (i.e., events where real-world settings may lead to higher levels of motivational and emotional significance; Metcalfe & Mischel, 1999; Welsch & Peterson, 2014). For example, a hot cognitive event may involve a child having a toy taken away by a friend, being physically hit by another child, or disagreeing with another child. The child's increased emotional load in such an instance would decrease the available cognitive capacity to evaluate the behaviors of the transgressor. Just as adults rely more heavily on nonverbal cues to evaluate the credibility of transgressors when their cognitive capacities are strained (Reinhard & Sporer, 2008), preschool-aged victims may be more heavily influenced by nonverbal behavior when judging the credibility of a transgressor than by a verbal apology during heated moments of conflict. Another possibility to consider is that a child who had prior experiences where they were prompted to apologize may make a cognitive decision to apologize purely to fulfill an expected social script.

For children to feel connected to a peer conflict partner and motivated to repair a social relationship they need to develop emotional response processes that are related to adaptive social behaviors. Adaptive social behaviors such as empathy and compassion (necessary to evaluate when an apology is needed) are experience-dependent and impacted by the functionally integrated systems of affective and cognitive processes. Empathy is an adaptive social behavior that describes a process in which one recognizes the positive or negative feelings of another and shares those feelings; this is a socio-affective process with neural network activations similar to experiencing the same emotion oneself (Preckel et al., 2018). Compassion is a complementary social emotion that is based on feelings of concern and warmth with neural activation in networks that are associated with reward and affiliation (Preckel et al., 2018). The development of these emotions is implicated in social repair on two fronts: (a) from the transgressor's perspective, in recognizing the hurt of another and the need for positive social repair strategies, and (b) the victim's perspective in accepting the transgressor's remorse and granting forgiveness.

How well children can understand someone else's perspective, or apply ToM, especially when another's perspective differs from their own, is a critical component of socio-cognitive development that directly affects whether a child can understand the hurt of another after committing a transgression. Socio-cognitive processes related to false-belief performance typically grow during the preschool years. By age 5, most children are capable of ToM abilities that extend to an understanding of false belief (that other people can have beliefs that are not true) and an acknowledgment that others might think differently than they do (Mulvey et al. 2022; Wellman et. al., 2001; Wellman & Lui, 2004). ToM has important implications for children's apologies because recognizing that another child is suffering may contribute to feelings of guilt or remorse that could trigger nonverbal remorse expression or a verbal apology.

Finally, increased cognitive empathy on the victim's part after empathizing with the transgressor's remorse may increase the tendency for forgiveness. In fact, recent research has found positive associations between advanced ToM in older children and forgiveness, especially when an apology is given (Mulvey et. al., 2022). However, we do not yet know at what age children can (or do) reliably consider another's (victim's or transgressor's) perspective when experiencing social conflict, or if children's developing understanding of the perspectives of others might impact their apologetic communication and propensity to forgive differently near the beginning versus near the end of preschool.

Current Limitations of Children's Apology Research

To date, there are fewer than two dozen published studies specifically examining children's apology use. The limitations surrounding the current body of work on this subject consist predominantly of three concerns: (a) research design flaws, (b) limited account of nonverbal and emotional display, and (c) contextual-free analysis. In this section, I will examine these three concerns with the literature as they relate to understanding preschool children’s apologies. First, most children's apology research relies on hypothetical scenarios or interactions with adult researchers, failing to capture children’s actual actions and responses during hot cognition events. The most common methodological approaches to the study of children’s apologies thus far have been to study children’s reactions to apologies using imaginary child transgressors (Amir et. al, 2001; Smith & Harris, 2011) and third-person evaluations of character vignettes (Banerjee et al., 2010; McElroy et al., 2023), or interactions with adult researchers (Drell & Jaswal, 2016; Oostenbroek & Vaish, 2019). Few research studies systematically examine naturally occurring child apologies, where children are the transgressors, and only one study has included naturalistic observations of peer apologies within the preschool age range (Spivak, 2016), when children first learn to manage peer conflict. This is a significant concern because, although Spivak’s (2016) research examined peer conflict observationally and included children as young as 4 years old, the occurrence of apology use was only tracked as a part of a long list of observed conflict resolution strategies. To understand how children use apologetic communication in preschool, more consideration needs to be given to specific apologetic behaviors exhibited in peer interactions.

Also, current research makes claims about the effectiveness of children’s peer apologies using data where children did not directly receive an interpersonal apology. In these instances, they were only told that another (hypothetical) peer had apologized, or they were shown a note from someone they had never met. For example, Smith and Harris (2011) examined apologies and Amir et al. (2021) examined remorse using experiments where children thought that a peer had wronged them, but they never directly interacted with an actual peer and the stakes of the experiments were relatively low, such as not receiving stickers from a stranger or receiving coloring sheets that were already used. It is unclear if the child participants' evaluation of the hypothetical transgressor would have been the same if they had directly experienced wrongdoing, especially if the transgressor was someone they knew, or if they received more than a note of explanation or apology.

In situations when hot cognition events were created, they tend to be first-person experiments with adult researchers as transgressors (Drell & Jaswal, 2016; Oostenbroek & Vaish, 2019). For example, in Drell and Jaswal's (2016) study, an adult transgressor accidentally knocked down towers built by children. In Oostenbroek and Vaish's study (2019), two adult transgressors simultaneously tore (slightly) a child participant's drawing. In these cases, the transgressions were "accidental" and were committed by adult authority figures/strangers. These results do show that apologetic communication can be effective for relationship repair (in terms of a more positive evaluation of an adult transgressor) if an adult researcher apologizes to a child, but it does not tell us how effective it is at repairing peer relationships – the very relationships that are directly implicated in children's later well-being (Hawker & Boulton, 2000).

The second concern is that few studies have taken into account the impact of nonverbal communication on children's apologies. Adult apology research shows that the nonverbal delivery of an apology, including remorseful tone and body expression, can be highly influential for the acceptance of the apology for adults (Reinhard & Sporer, 2008). Some recent children's research suggests that remorse displays have an impact on children's forgiveness of adult transgressors (Oostenbroek and Vaish, 2019), yet no research has evaluated the frequency or impact of nonverbal apologetic communication displayed by child transgressors. This is problematic, because one of the overarching goals of examining children's use and evaluations of apologies is to develop conflict intervention strategies that lead to effective social repair in early childhood. Without examining the impact of the nonverbal expressions of remorse within the preschool population we cannot yet say whether children will respond to peer remorse in the same ways that they respond to adults.

The third concern is that current research fails to situate children's apologies in the context of their lived experiences with peers. Often, studies examine children's use and/or evaluations of apologetic communication outside the context in which it most commonly occurs: the preschool classroom. Basing knowledge about children's apologetic behavior on contextual-free analysis is problematic because children's knowledge and behaviors do not always match. Just as there is a knowledge-behavior gap between how children understand and enact fairness. Children understand the concept of fairness by age 3 but often do not distribute resources fairly until about 7-8 years old, even when accounting for immediate self-interest (Blake et al., 2014). Therefore, how children cognitively evaluate apologies, or hypothetical transgressors, may be inconsistent with how they react as actual victims in peer conflicts, under hot cognitive conditions. This concern is shared by other researchers in the field who have also considered the implications of a hot-cool framework in their designs and acknowledged that examining children's responses to apologies under cool cognition conditions (as third-party evaluators) fails to take into consideration the psychological distress of actual conflict (Drell & Jaswal, 2016; Oostenbroek & Vaish, 2019).

Failure to situate children's apology research in appropriate contexts can diminish the reliability and credibility of a study's findings and limit our ability to meaningfully understand children's apologetic communication. For example, because the moral behavior of children is highly situational (Santrock, 1997), it is unclear if children would enact (or evaluate) apologetic communication the same way in the classroom as they do in a lab or at home. In a classroom setting, children's behavior is likely influenced by (a) the rules and expectations presented by adult teachers in the classroom (Spivak & Farran, 2012, 2016) and (b) by how motivated they are to maintain peer friendships and continue in joint play (Wang et al., 2019). The classroom provides a situational context that is new for many early preschoolers where their interactions with adults are not based on previous attachment experiences or parental affection. Children must adapt to the new expectations of these adult authority figures in their lives, and adaptation may need to occur repeatedly as children interact with new peers and teachers as they age into different classrooms. Based on how nimbly children adapt their behavior to fit other changes in context (e.g., behavior at home versus at a grandparents' home) more research needs to be done to examine the influence of teachers' expectations on child behavior in the classroom.

Ultimately, a shift to examining children's apologetic communication behaviors in context, with a richer communication lens including both verbal and nonverbal behaviors, is needed to address these concerns.

Purpose of the Current Study

The broad purpose of this study is to identify naturally occurring apologetic communication behaviors of preschool-age children and examine how those behaviors impact social repair. I have designed measures that highlight the voices and experiences of preschool children to provide clearer insight into how they understand apologetic communication strategies, how they use, or do not use, those strategies, and how their use directly impacts social repair. This is done to help ensure that the research used to develop intervention strategies in classrooms can be informed by preschool children's lived peer experiences.

The study has two objectives: (a) develop effective and appropriate measures that capture children's nonverbal and verbal strategies in apologetic communication and (b) examine the interrelationships between a child's communicative choices, knowledge of social norms and expectations, and relational outcomes.

Study Aim 1: Developing Effective Measures

The first aim of the study was to develop measures that capture the use of both verbal and nonverbal apologetic communication strategies and the extent to which preschool participants in this study display markers of social repair following peer conflicts. To achieve this objective, it is important that the study: (a) is conducted in a naturalistic setting (e.g., preschool classroom), (b) involves actual conflicts among peers (e.g., hot cognition conditions), and (c) is situated in the child's sociocultural, interpersonal, and experiential contexts (e.g., friendship networks and classroom expectations).

In particular, the research questions related to the first aim are:

RQ1: What kinds of verbal and nonverbal apologetic communication behaviors do preschool children use in naturally occurring peer conflicts?

RQ2: What is the ratio of verbal to nonverbal apologetic communication behaviors used by preschool children in naturally occurring peer conflicts?

RQ3: Is the amount of time that it takes for children to return to play related to occurrences of apologetic communication behavior?

RQ4: Does using apologetic communication following peer conflict impact peer likability?

Three hypotheses for the first aim presented here are based on the understanding of communication as a dynamic developmental process that changes over time.

H1: Preschool-aged children at the CDLS will use more nonverbal apologetic communication strategies than verbal apologetic communication strategies following peer conflict.

H2: The amount of time before returning to play following peer conflict is negatively correlated with occurrences of apologetic communication acts.

H3: Children who use apologetic communication following peer conflict will be more likely to be viewed positively by peers.

These hypotheses help answer the first aim by (a) determining the significance of nonverbal apologetic communication use in this age range and whether it warrants inclusion in future research, and (b) whether these strategies impact the time it takes children to return to play as a marker of social repair.

To answer the research questions and hypothesis related to the first aim, I created the IMPACT (Interpersonal Meaning of Preschool Apologetic Communication Tendencies) Apology Coding Frame which allowed me to provide a quantitatively descriptive account of how the observed preschool children used both verbal and nonverbal apologetic communication strategies following naturally occurring peer conflicts in their preschool setting (see Appendix A: IMPACT Apology Coding Frame). Also included in this frame were items that tracked how long it took children to return to play after peer conflicts, conflict types, intentionality, levels of adult and peer intervention, and markers of forgiveness. The purpose of this was to compare apologetic communication behaviors to the conditions of the conflict and indicators that social repair was occurring.

A second quantitative measure was created to measure child participants' evaluations of their peers using a Peer Likability Sorting Task. This task allowed me to compare the apologetic communication strategies used by child participants who had committed transgressions to how much their victim peers liked to play with them both before and after being involved in the peer conflict.

Study Aim 2: Identifying Factors Shaping Children's Communicative Strategies

The second aim of this study was to examine the interrelationships between a child's communicative choices, knowledge of social norms and expectations, and relational outcomes. Specifically, this study explores whether children's prior understanding of apologies and the expectations that adults have for them to apologize impact their choice behaviors in this population sample. Based on the knowledge that preschool children regularly adapt their behaviors to fit the expectations for different environments and different caregivers, I wanted to examine differences in children's understanding of apologies and their apologetic communication behavior. This led to the development of the following research questions:

RQ5: How does children's understanding of apologies compare to how they use apology behaviors?

RQ6: How, often, and to what degree, do teachers intervene in peer conflicts?

RQ7: Are parents' and teachers' attitudes and expectations for their children's or students' apologetic behaviors similar or different?

RQ8: How do the apologetic behaviors of child participants in this study relate to their parents' and teachers' expectations of apologetic behavior?

Children are highly contextual (Bukatko & Daehler, 1989) and likely to be influenced by the authority figures in the room. In fact, Spivak and Farran (2016) found the attitudes of preschool teachers to be directly predictive of their student's classroom behavior in first grade. They found that the teacher's positive emotional tone, and more approving and less disapproving behavior, directly predicted positive gains in social behavior and less problem behavior, even in the absence of social-emotional curriculum.

These findings led to my final hypothesis:

H4: Children's apologetic communication behaviors will be more influenced by the expectations of their teachers in the context of their classroom than by expectations taught by their parents at home.

This hypothesis helps achieve the second aim by determining how influential teachers' expectations are in relation to their student's observed apologetic communication behaviors in the classroom setting.

The second aim of this study was achieved through the development of additional qualitative measures, in which I asked participants about their views and behaviors regarding the use of apologies. I created three qualitative measures: a child participant interview, which asked children what they knew about apologies and what their expectations were after peer conflict; and two surveys, one for parents and one for teachers, which each asked them to discuss their roles in children's peer conflicts and their opinions and expectations of apologies. My findings from these qualitative measures were compared to the observational behavioral data. Due to observing children in their preschool classrooms, instead of under laboratory conditions, I was able to use the findings from this study to compare teacher's expectations of the use of apologetic communication in the preschool setting to the behavior of children in their classrooms. I was also able to use findings to compare children's expectations of apologetic communication following peer conflicts to their actual apologetic choices.

Together, these components created a rich description of how preschool-aged children use verbal and nonverbal apologetic strategies during peer conflicts which furthered my purpose of amplifying the voices and experiences of preschool aged children during peer conflict and repair.

Chapter 3: Methods

Research Design Overview

This research study was conducted at the Child Development Laboratory School (CDLS) associated with the Institute of Child Development at the University of Minnesota. This study used a mixed-method approach with various components, including naturalistic observations, a preschool participant peer sorting task, preschool participant post-study interviews, and parent and staff pre-study surveys. The study was approved by the CDLS and the University of Minnesota IRB (IRB STUDY00016305).

For the qualitative portions of this study, I gathered video observations of preschool children attending the CDLS. These included video observations of all components of their preschool day: arrival, outdoor playtime, snack time, instruction, small group play, and pick-up, including transitional times between activities. I completed individual post-study interviews with the observed child participants to gather information about what they knew and how they felt about apologies and social repair. I also gathered pre-study online surveys from parents and teachers of child participants that inquired as to their practices for helping children through peer conflict and their opinions about children using apologetic communication.

For the quantitative portions of the study, I developed an apology coding frame titled the IMPACT Apology Coding Frame, referring to the full name of this study Evaluating the Interpersonal Meaning of Preschool Apologetic Communication Tendencies, or IMPACT (See Appendix A). Observational video footage was used to identify instances of peer conflict and each conflict was coded using the apology coding frame. The frame includes information regarding background conflict information, adult or peer interventions, conflict types, if and when the child participants returned to play after the conflict, verbal and nonverbal apologetic communication strategies used, and forgiveness markers. Also, on each observational day, child participants were asked to participate in a Peer Likability Sorting Task at the beginning and end of their school day, in which they sorted pictures of the peers from their class based on who they like to play with the most. By combining both qualitative and quantitative analysis, my goals are to: (a) accurately capture which types of verbal and nonverbal apologetic strategies are used by preschool-aged children in a naturalistic setting under hot cognition conditions, (b) evaluate possible associations between apologetic strategies and social repair markers, and (c) explore possible associations between parental or teacher expectations and child participant behavior.

Study Participants

Researcher Description

The development of my quantitative measures and my qualitative analysis was influenced by my identity and experiences as a mother of three children and former preschool teacher. I currently have a child in the preschool age range, which influenced my expectations of behavior and informed my research choices and my interpretation of interview and survey responses. Additionally, I believe that verbal apologies serve a useful social function, but only when they are sincere and that sincerity is evidenced in the nonverbal behaviors (tone, body movements, emotional expressions) present in the interaction. I recognize that there is a significant discrepancy between how parents I know frequently encourage apology language and how teachers I know often exclude it based on concerns that requiring verbal apologies may induce shame. I acknowledge that, for some children, a forced or even prompted apology, may feel embarrassing or shameful, and that for many children nonverbal displays of remorse would be much less of a face threat than a semi-public verbal apology in a preschool setting. I view verbal apologies as useful, but not necessary, and not appropriate for many children in public contexts. These views have impacted the way I wrote my survey questions and the way that I have interpreted the language that parents and teachers used in their survey responses.

Participant Recruitment

Child, parent, and staff participants were all recruited from the CDLS, which predominantly serves families from Minneapolis, Minnesota, and its surrounding communities. Participation in this study was offered to staff and families of CDLS preschool classrooms with children in the study's target preschool age range of 3 to 5 years old. The recruitment for participants included informational postings on a public board in the CDLS lobby, verbal and email invitations from CDLS staff, and a printed information sheet available to parents outlining research being completed at the lab school. In total, 64 parents signed and returned consent forms to the CDLS co-director to participate in the study. Due to how many different classrooms the potential child participants were attending, the sample population for this study was narrowed to two half-day preschool classrooms which had full consent signed by a parental guardian to participate. The AM classroom had 18 children, the PM classroom had 10 children, all of whom had parental consent to participate. This choice eliminated the need to separate child participants during play and activities based on study participation. The remaining children with consent from other classrooms were excluded from participation; however, their parents and teachers were still allowed to complete the adult surveys if they chose to do so, but no data from parents or teachers of non-participating children were analyzed for this study. Table 1 summarizes the different groups of participants.

General Population

Of the 157 students attending the CDLS in the spring of 2023, approximately 61% were male (n = 96) and 39% were female (n = 61). According to the Department of Education Civil Rights Data Collection and Comparison form, the CDLS has a student population which is fairly representative, but slightly more diverse, than the greater population of the Minneapolis area it serves. The following statistics represent the reporting population of children attending the CDLS compared to the greater, general, population of the Minneapolis area. Of the attending students, 17 children were described by parents as Hispanic (11% compared to 7% in the greater Minneapolis area), 102 children were described as White (65% compared to 75%), 25 children were described as Asian American or Asian American/White (16% compared to 8%), seven children were described as Black or African American (4% compared to 14%), and six children were described by parents as American Indian or Alaska Native (4% compared to 1%). In the CDLS child population at least 21% of parents identified their children as having an ethnic background including two or more races compared to 3% of the general Minneapolis area.

English is the prominent language spoken by CDLS children as reported by parents, with 83% (*n* = 130) listing English as only language understood well by their child, but, 10% (*n* = 16) listing a second language after English as spoken by their child (such as Russian (*n* = 4), Spanish (*n* = 5), Korean, Malayalam, Mandarin Chinese, Arabic, Dakhóta, Nepali, or Portuguese). Three percent (*n* = 5) of parents listed their child as speaking only a language other than English (Vietnamese (*n* = 2), Korean (*n* = 2), or Spanish) and 5% (*n* = 8) listed their children as speaking two languages, with English as the second language (after Korean (*n* = 2), Spanish (*n* = 3), or Mandarin (*n* = 3) Chinese).

Child Participants

All child participants in this study came from two CDLS preschool classrooms. One AM class and one PM class that shared the same classroom space and outdoor play areas but had different lead teachers and staff. Child participants in the observational component of the study included all 18 students in the AM classroom (13 boys, 5 girls) and all 10 students (6 boys, 4 girls) in the PM classroom at the CDLS, for a total of 28 child participants (19 boys, 9 girls). When observations began on March 15th, 2023, the age ranges for the child participants in the AM class ranged from 3 years and 6 months to 5 years and 4.5 months of age (*M* = 4 years and 6 months). The age ranges for the child participants in the PM class ranged from 3 years and 8.5 months to 5 years and 6 months of age (*M* = 4 years and 4.5 months). The total child participant age range was 3 years and 6 months to 5 years and 6 months of age (total age *M* = 4 years and 5.5 months).

Each classroom had one child participant whose parent had signed full study consent, but who verbally asked that their child only participate in the observational component of the study. This request was honored; therefore, the child participants for the sorting task component of the study included all but one male student from each classroom for a total of 26 child participants (17 boys, 9 girls total; AM sorting tasks = 12 boys, 5 girls, PM sorting tasks = 5 boys, 4 girls). Out of the 26 child participants eligible for the Child Participant Interviews, all of the AM child participants (12 boys, 5 girls) and five of the PM child participants (2 boys, 3 girls; three child participants were ill the week of interviews) completed interviews. There was also one child participant who had low verbal skills. That child participant was not excluded from this study, as there is a wide developmental range of language skills at this age in the general population, and similarly no children were excluded for having language skills significantly above an average range.

Parents were given the option to disclose additional demographic information about their children. Nine out of 28 child participant guardians participating in the study disclosed racial and ethnic backgrounds for their children, with six parents identifying their child as “White/Caucasian,” two parents identifying their children as “Multiple Ethnicities,” and one parent identifying their child as “Other - Hispanic White.” Eight out of nine parents named English as the primary language spoken in the home, with one parent naming English and Chinese as spoken equally.

Parent and Staff Participants

Survey links were sent to parents of each child who signed the consent form for themselves and their child to participate in the study and staff members of CDLS who had signed the consent form for themselves. There were nine parents who completed the survey and had a child in one of the two preschool classrooms included in this study. There were six staff participants who completed surveys and who worked directly with child participants selected for the study, including the AM and PM lead teachers as well as four student teachers. Any parent or staff survey data completed by parents not associated with a child participant in this study were excluded. The mean length of time that lead teaching staff participants (n = 2) had worked at CDLS at the time of the survey was 13.5 years, with a range of 11 to 16 years. The length of time that student teachers (n = 4) had worked at CDLS was 2-3 months. See Table 1 for the demographic data of parent and staff participants.

Table 1

Parent and Staff Participant Demographics

Demographic		Parent Participants (N = 9) n (%)	Staff Participants (N = 6) n (%)
Gender	Female	7 (77.78)	5 (83.33)
	Male	1 (11.11)	-
	Non-Binary	1 (11.11)	1 (16.67)

Demographic		Parent Participants ($N = 9$) n (%)	Staff Participants ($N = 6$) n (%)
Age	16-24	-	2 (33.33)
	25-34	-	1 (16.67)
	35-44	8 (88.89)	2 (33.33)
	45+	1 (11.11)	1 (16.67)
Ethnicity	White/Caucasian	6 (66.67)	5 (83.33)
	Multiple Ethnicities	2 (22.22)	-
	Asian	-	1 (16.67)
	Other - Hispanic White	1 (11.11)	-
Education Level	High School or Equiv.	-	1 (16.67)
	Associate's Degree	-	1 (16.67)
	Bachelor's Degree	4 (44.44)	2 (33.33)
	Master's Degree or Higher	5 (55.56)	2 (33.33)
Household Income	Less than $25K	-	1 (16.67)
	$25-50K	-	1 (16.67)
	$50-$100K	3 (33.33)	2 (33.33)

Demographic		Parent Participants (*N* = 9) *n* (%)	Staff Participants (*N* = 6) *n* (%)
	$100-$150K	2 (22.22)	-
	More than $150K	4 (44.44)	1 (16.66)
	Prefer not to say	-	1 (16.66)

Setting and Location

The CDLS is located just north of the University of Minnesota's Minneapolis West Bank Campus. Children who attend the full day program are primarily children of staff and students at the University of Minnesota, but students who attend the half-day programs, which included both classrooms selected for this study, include any families from the surrounding Minneapolis/Twin Cities area. The school itself is a newly built facility on its own area of land with no adjoining buildings or facilities, and is surrounded on three sides by large, fenced-in, play areas.

The AM and PM classes involved in this study shared the same classroom at the end of the building, which was a singular large rectangular room with an open, half-walled, bathroom facility, and a storage closet open to faculty only. On two-thirds of the inside wall, above a set of open locker bays, there is a large one-way mirror which adjoins an observation room. The room is tall enough for a two-story play structure which is centered opposite the mirrors and there are large windows on two walls of the classroom letting in an abundance of natural light. The furniture in the room is semifixed, but there are areas set up for art, tables for snacks and crafts, a sand table, a pretend play area, and a reading area with a full-size couch. Classroom activities also occasionally took place in the wide hall area just outside of the classroom, some smaller rooms across the hall, and a large gym area in a different area of the building.

Outside of the classroom, play primarily took place on two of the CDLS's many playground areas. One of the outdoor play areas could be accessed directly from the classroom. This play area is very long, approximately the size of a narrow soccer field and wraps around the corner of the classroom. It is an open grassy area with a small hill and no permanent structures aside from some paved walkways. The other play area, located on the opposite end of the building, is slightly smaller and shaped like more of a large triangle. It is also an open play area, but it does have multiple large trees and a steel bar climbing structure which can be rearranged. Each area had one or two picnic tables, and items were frequently rotated in and out of each play area such as large building blocks, tricycles and wagons, water tables, painting supplies, gardening items, sleds, and sports equipment. In all locations, researchers were allowed to set up stationary cameras or move freely with hand-held cameras to record data, but researchers always attempted to limit interference with the child participants' play.

Data Collection Procedures

Undergraduate research assistants were recruited through the Department of Communication Studies at the University of Minnesota to take part in department research. They received course credit for their participation in this study. Information about the researchers involved in each of the study components, including additional task-based training is listed in the relevant sections below. Myself and seven undergraduate researchers directly involved with child participants attending the CDLS completed the IRB required Collaborative Institutional Training Initiative (CITI) courses and passed background checks before helping at the CDLS or receiving access to the secure network drive created for this project. Two additional undergraduate researchers completed CITI training before having access to the secure network drive but did not need background checks due to having no direct contact with any child participants; they did complete CITI training prior to having access to the secure network drive.

Pilot Study

This study included one pilot study day of observations and practice completing the Peer Likeability Sorting Task, which occurred on December 19th, 2022. Two undergraduate researchers who had completed CITI training and their background checks and I observed the AM class only, due to having full consent to be observed and having consent from all but one child to complete a trial of the sorting task. Before the pilot study day, based on CDLS teacher request, the two undergraduate researchers and I spent a class day with the fall AM child participants so that we would be familiar to them before gathering observational footage. I also trained the undergraduate researchers in how to use the video equipment (three GoPro Hero 9 cameras and one Canon Vixia camera checked out from the University of Minnesota library) and how to interact with the child participants when observing by answering their questions with kind but short answers and preparing them to respond that they could not play because their job that day was to hold the camera.

At the beginning of the pilot day, I set up two stationary cameras outside and assigned one undergraduate researcher to record additional observations outdoors. The second researcher and I conducted a single Peer Likeability Sorting Task with students as they arrived for class. This was done by having the undergraduate researcher stay near the task area (which was located just inside the building in a public hallway) and record the task while I signed students out and back in from the outdoor play area and brought them to the task area to complete the task. For the pilot of the sorting task, child participants were brought to a low table and asked to move the pictures of the classmates "that they like to play with the most" from an open area of the table to a blue box which was a large square taped to the table with painter's tape. After they moved pictures of their friends over, they were thanked for playing the sorting game and brought back to play with the rest of their class. More details about the sorting task are provided in the relevant section below. When the class moved inside about 20-30 minutes after recording had begun, the stationary cameras were also moved inside and children who were still arriving were brought to complete the sorting task from the classroom to the hallway and back.

The pilot study highlighted several necessary changes that needed to be made to the original research plan. First, it became apparent that there was a fairly large amount of time (up to a half hour) in which children arrived or left for the day out of the three hour class and the sorting task took longer than expected when factoring in the amount of time it took to sign children in and out in the order of arrival due to having to find them on the playground, get assent to come play the sorting task game, check them out, bring them into the building, help them take off their winter mittens, etc., and then help them get ready to go back outside and check them back in with a teacher. This was solved by using a clipboard to check children in and out from one access point based on their availability and moving the task to just inside the door instead of down the hallway.

Additionally, the blue box taped on the table was confusing for children, many of them looked around for a physical box and asked for clarification, and it was sometimes difficult to clearly capture the full sorting event in the frame due to how quick the children's movements were and glare from the plastic holders that the photos were in. This was solved later by using a physical box for placement of the photos, using a stationary tripod mounted at a high angle above the task to reduce glare, and manually tracking each child participant's choices on paper in case their arm or dangling mitten obscured the image of the choice (the tracking sheets were later checked against the video footage by both an undergraduate researcher and me).

Finally, some equipment changes were needed, some of the mounting hardware did not work well in colder weather or was difficult to move and some of the audio was difficult to hear outside due to the wind. These problems were solved as much as they could be by using tripods and microphone covers for the cameras.

Child Participant Observational Data

The CDLS is closed for a winter break from mid-December to mid-January. In January, parents of new AM students and any new or remaining students without parental consent in the PM class were approached by their teachers for consent to participate in the study. There were five new spring undergraduate research assistants that replaced the two previous research assistants. These assistants also completed all necessary CITI training, passed background checks, and received two hours of training from me regarding how to use the video equipment and interact with child participants. They also spent one day prior to beginning the study getting to know the children in each class, per CDLS protocol. Once we had full consent, the study began, and observational video data were gathered for four weeks, from March 15^{th}, 2023, through April 12^{th}, 2023. The AM classes were held each week on Monday-Friday, from 8:30-11:30am. The PM classes were held each week on Monday, Wednesday, and Thursday from 12:30-3:30 pm. Observation days were chosen based on which days worked best for classroom teachers, my own teaching schedule, and the availability of undergraduate researchers helping collect data. Per IRB requirements, observational recording days were limited to no more than two days a week, and recording days were nonconsecutive. Observations were gathered in the AM classroom on March 15^{th}, 17^{th}, 22^{nd}, 24^{th}, 29^{th}, 31^{st}, April 5^{th}, 7^{th}, and 12^{th}. Observations were gathered in the PM classroom on March 22^{nd}, 29^{th}, April 5^{th}, and 12^{th}. On each day that observations occurred, video data were gathered from within 15 minutes of the start of each class through the end of the class, except for periods in which child participants were combined with children from non-consenting classes (i.e. when a nature teacher came in to talk with the whole school or when playground use was temporarily combined with another class).

Videos were recorded on three GoPro Hero 9 cameras purchased for this study using research funds provided by the Department of Communication Studies as Research-Creative-Travel Funding and up to three additional cameras on any given day

(Zoom Q8n-4k camcorders or Canon Vixia camcorders) which were borrowed from the University of Minnesota Library system along with adjustable tripods and microphone covers. Recording indoors versus outdoors varied per day and classroom based on weather and planned activities, but outdoor recording generally averaged approximately 45 minutes to an hour and 15 minutes during each three-hour class per day. Due to regular changes in activities, the amount and placement of cameras also varied throughout the day, but a minimum of three cameras were typically recording child behaviors using both stationary cameras on tripods and cameras held by researchers. An additional camera each day was dedicated to recording child participant sorting tasks only. Per CDLS protocols, researchers stood back from children as much as possible and did not initiate any contact with the children. If asked a question by a child, researchers were trained to answer briefly and discontinue the conversation.

Child participants typically had a high degree of freedom in how they played both indoors and outdoors for most of the class time. Each class had a dedicated snack and transition time (about 10-15 minutes) and some structured learning time (about 15-30 minutes) each day. The remaining indoor time was typically split up into small group time and free time. In small group time, about 3-5 children at a time could play at different stations that teachers had prepared throughout the room. All children received chances to play at each play area and there were often multiple choices of things to do in each area, like choosing between crafts, playing at the sand table, or doing puzzles. The number of children in a classroom at a time varied. The AM class had 18 students in full attendance, and the PM class had 10 students in full attendance. On any given day, there were one to five students in each class who were absent or home sick. There were times when all students were in the classroom and times when the class was split into small groups and children were rotated between the classroom, the hallway, outside, or another room or area available at the school.

Additional indoor activities were thoroughly planned out and set up at multiple stations throughout the room and often had direct connections to the lessons of the day. For example, when the focus was on community, children were encouraged build their own city out of giant blocks, pretend role play as different people in a community, glue together small wooden scraps/blocks into houses that they later painted, or design and draw their own neighborhood on a huge (3 foot by approximately 10 foot) piece of paper out in the hallway that they could drive small cars on. In the classroom, there is a sturdy wooden "playhouse," which is about nine feet tall, with a lower level including two partially separated rooms, one with a kitchen area, and an upper open level with a railing that can be accessed by an "L" shaped stairway.

Outside activities varied as well. If snow was on the ground children were provided with sleds and shovels; if the weather was clear, they had access to wagons and tricycles. Children often played in clusters but moved around the play area constantly flitting from one activity or area to another. Researchers were trained to monitor for conflicts, if the children were not in an area that was being recorded by a stationary camera, researchers would attempt to remain with at least one of the children after the conflict (from a distance) if play did not resume right away to capture when and if the same two children returned to play later.

I also recorded observations in the middle of the day, but I ran the sorting task at the beginning and end of each class and helped transition cameras indoors and outdoors during transition times. Not all researchers were available on each observation day, but on most days two to three undergraduate researchers helped record data in addition to stationary cameras. Just over 62 hours of video footage were recorded in total. All data were stored only on the secure network drive created and dedicated to this project of on the original USB drives stored in a safe that is accessible only to me as the primary investigator.

Child Participant Sorting Tasks

All child participants with permission to complete tasks (17 children from the AM class and 9 children from the PM class) were given the opportunity to choose whether they wanted to participate in the Peer Likeability Sorting Task, a.k.a. “The Sorting Game.” The opportunity to participate in the sorting game was offered to each child who was in attendance for the day as close to their arrival at school as possible, typically when they were still playing outside for gathering time. It was then offered again beginning 30 minutes before the end of the day based on who was the most readily available to complete the task. Typically, they were indoors at this time, but sometimes they had moved back outdoors at the end of the day – whenever possible children were asked to participate on their way “out” to the playground area to help reduce transition time and the amount of time that children were taken away from play.

I ran all the sorting tasks and checked child participants in and out for each task so that the research assistants could be available to gather video data. Per IRB conditions, children were not allowed to rank order their peers specifically, nor were we allowed to refer to their peers as “friends.” For the Peer Likeability Sorting Task, child participants were shown two physical boxes approximately 11 inches wide by 14 inches tall and one to three inches deep. The box on the right contained photos of children in their class, and the one on the left was empty. The boxes could easily hold all the photos of the children in each class without the photos overlapping each other. Each photo was laminated and included a small participant number below the image to help track each child’s choices. The assigned numbers were above fifty to limit the tendency for children to “count” or order the photos based on participant number. Child participants who wanted to participate were checked out of their class location by me and brought to the area where the sorting task was being completed just inside the doorway which connected the part of the hallway right outside the classroom and access to the main outdoor play area. Based on traffic in the hallway and room availability, the tasks were occasionally completed in a small room that contained a table and a few chairs just off the main doorway to reduce distractions.

Each time children came in with me to complete the task, I reintroduced myself and asked child participants to move their own picture onto a smaller blue stand within the empty box. This served two purposes, it ensured that the child participant could not choose their own picture and it helped clarify on the video footage which child participant was completing the sorting task since the camera was mounted above the task to reduce glare and could not also fully capture the child participant’s face. Then, each child was directed by me using the following statement(s), “I’m going to ask you to move around some pictures of the people who are in your class. Can you please show me which classmates you like to play with the most by putting their pictures into this box?” If a child seemed unsure about whether they had completed the task, either by shifting back and forth and looking at me expectantly, or directly asking me if they could be done, I told participants, “You can move as many pictures as you want and stop whenever you feel done.”

In addition to the video recording, I tracked by hand when each child participant started the task and what choices they made in order. This fulfilled two purposes, the first was to make sure that an accurate time was recorded for the task since the video was started and stopped frequently and the time on the camera often reset, and the second was to have a record of each child participant’s choices in case something obscured a choice on the video (such as a mitten that was dangling from their sleeve, or their other arm). After child participants indicated that they felt done, I would move the chosen photos back into the original box and shuffle them around so that they were ready for the next child participant. Children were then thanked for playing the game and signed back into their classroom or playground area. The task typically took child participants between 1 and 3 minutes to complete.

Out of 374 possible sorting task event opportunities, 55 sorting events did not occur due to a child participant's absence, and 72 did not occur due to a child participant deciding not to participate when given the opportunity. Overall, 66% (*N* = 247) of the possible sorting opportunities resulted in valid sorts where there was both a first and second sort by the same child, on the same day. After determining the sorting data set pairs that were eligible for analysis, the date and time of each set was compared to the dates and times of observed conflicts using conflict participant numbers. This was done to make sure that each set of sorting data that was used for statistical analysis had a first and second sort completed by the conflict victim before and after the observed conflict occurred. The sorting data for 49 of the 105 conflicts (47%) were determined to have valid sorting data (n = 98 instances of individual sorting data, in 49 sets) based on the conflict occurring between the victim's Sort 1 (S1) and Sort 2 (S2) timestamps and the occurrence of two valid sorts completed by the conflict's victim on that day. In instances where there was more than one conflict between the same transgressor and victim, the victim's sorting data was only included once to eliminate duplicate weighting. This left 38 pairs of valid sorting data (n = 76 total sorts) available for statistical analysis.

For each conflict, a mean difference was calculated between the choice value given to the transgressor in S1 and S2, with 1 representing the highest, or most liked, choice, and an absolute value of the number of choices available plus one used for instances where a peer transgressor was not chosen during the sort. For the AM class, the value for not being chosen was 18; for the PM class, the value for not being chosen was 10 (mean sort averages were normalized into a 1:1 ratio between AM and PM class data in RStudio before running fit models or regression analyses). For example, if a child participant victim chose their transgressor as their 2nd choice in S1 and their 6th choice in S2 the transgressor's sort average was recorded as 4, while the difference between their choice placement for S1 and S2 would be recorded as -4.

Child Participant Post-Study Interviews

At the end of the study, each child participant who was present in class on the interview days, and was eligible to complete tasks, was asked to complete a single interview with me in a separate research room at the CDLS. Interviews were completed in the AM classroom on April 18th and 20th, and in the PM classroom on April 20th. A total of 22 child participants (14 boys, 8 girls) completed an interview. All interviews were filmed and took between 3.5 and 7.5 minutes to complete (M = 5 minutes and 5 seconds, Median = 5 minutes, and SD = 1 minute and 9 seconds).

I began each interview by reintroducing myself and asking each child again if they assented to the interview by asking, "*What you think about things is very important to me and I was wondering if I could ask you a few questions today?"* Once verbal consent was received, child participants were asked two warm-up questions about what their favorite things were to do at school and at home. I then asked seven substantive interview questions. The first questions asked what they thought an apology was, who taught them about apologies, how they respond when they hurt someone, something, or someone's feelings, and what makes them feel better when someone hurts them or their feelings. (See Appendix B for the full script of all Child Participant Interview questions). I then thanked each child participant for talking with me and walked them back to their classroom and checked them back into class.

Parent and Staff Surveys

All parents of children attending the CDLS were given the opportunity to consent to the study and participate in a short Qualtrics survey at the beginning of the study.

Parents who had consented to be a part of the study were asked by the CDLS Co-Director, and by their child's classroom teacher, to participate in the survey via an email with a study description and a Qualtrics link to the survey and via verbal follow-up. Out of 64 consenting parents, there were 20 parent participants from all parents across the lab school who completed a survey, this included nine parent participants (*n* = 8 female, *n* = 1 male, and *n* = 1 non-binary) whose children attended the two focus classrooms, and whose responses were later included in analysis. The parent participant's survey contained six substantive questions about their experiences with their children's conflicts, what they do and say when they are helping their child resolve a conflict, if they ask their child to apologize after transgressing, and how they feel apologies compare in effectiveness to other ways of showing remorse (see Appendix C: Parent Participant Survey Questions for a full script of survey questions, including 6 substantive questions and 13 multiple-choice demographic questions).

Staff Surveys were offered to all staff of the CDLS who worked directly with children via a posted information sheet on the CDLS's research board and by the request of the CDLS co-directors. Signed written consent to participate in the study was collected for 16 staff members. These staff members were sent a link to the staff Qualtrics survey via email, by the CDLS Co-Director. The survey was completed by 12 staff members, including 6 teachers who worked directly with children from the two selected classrooms daily. The staff survey contained six questions that asked staff members about their roles at the CDLS, the types of conflicts they observe, and how they typically direct children to resolve conflict, followed by eight multiple-choice demographic questions (see Appendix

D: Teacher/Staff Participant Survey Questions for the full script of substantive and demographic questions in the staff survey).

Conflict Data Identification Procedures

In the late spring of 2023, four of the same undergraduate research assistants helping collect video data were assigned to comb through the recorded video clips to identify instances of conflict. I trained researchers to access the secure network drive, upload and use software embedded in the drive to view the videos, identify instances of conflict, and record basic information about the conflict on Conflict Interaction Tracking Sheets (see Appendix E: IMPACT Conflict Interaction Tracking Sheet) which included information about the participants, location, time of the conflict, and a brief summary of the conflict itself.

All video footage (62 hours and 18 minutes of footage) was watched a minimum of two times by two different researchers (including myself and the four undergraduate researchers) to identify valid peer conflicts. Peer conflicts were defined as conflicts that occurred between at least two child participants and included provocations, perceived disagreements, or instances of goal interference. An IMPACT Conflict Interaction Tracking Sheet was completed for each day and classroom for which observations were gathered, and all sheets were reviewed by me. Initially, 111 conflicts were identified; but, after my review, five conflicts were excluded due to containing conflicts that were only between a teacher and student (n = 2), no direct child victim for the conflict (n = 2), or video difficulties that made it too difficult to complete an accurate observation (n = 1).

One additional conflict was also excluded due to poor audio quality (*n* = 1), leaving a final total of 105 conflicts used for later coding in this study.

Apology Coding: Frame Development, Training, and Reliability

Frame Development

I developed a coding frame for this study, titled the IMPACT Apology Coding Frame, referencing the study name Evaluating the Interpersonal Meaning of Preschool Communication Tendencies (or Evaluating the I.M.P.A.C.T.; see Appendix A). This framework for observation of preschoolers' peer conflicts, verbal and nonverbal apology strategies, and forgiveness markers was based on relevant research in the field (Cohen et al., 1986; Fernández-Capo et al., 2017; Julle-Daniere et al., 2020; Knapp et al., 2013; Kochanska et al., 2002; Olshtain & Cohen, 1983; Vaish et al., 2011; Verbeek & de Waal, 2001) and my observations of preschool aged children. It was also influenced by my personal experiences as a preschool teacher and mother.

The IMPACT Apology Coding Frame contains 12 sections including: conflict information, times indicating the start and end of each conflict and when, or if, children returned to play, the level of adult intervention, the level of peer intervention, conflict types exhibited by the initial transgressor (including relational, physical, and verbal disputes), conflict types exhibited by the victim (same categories), identification of the initial conflict type, documentation of the initial, post-conflict, and final state of play (not playing, cooperative play, or parallel play), evaluation of the intention behind the conflict, the transgressors use of verbal apology strategies, verbal apology modifiers, and verbal apology elaborations, the transgressors use of nonverbal apology strategies, and the victim's verbal and nonverbal forgiveness markers (see Appendix A).

As this was exploratory research and no previously existing apology frames included verbal and nonverbal preschool apologetic communication behaviors, four of the undergraduate researchers who had helped gather video data and identify conflicts were used to complete a soft pilot of the IMPACT Apology Coding Frame in late April and early May of 2023. Approximately 12-15 hours of training, practice, and feedback about the frame revealed some changes that would be helpful in accurately documenting the apologetic communication behaviors of the preschool population observed.

The most significant changes involved how the timepoints of the conflict itself and the timepoint at which children returned to play were recorded. There was an additional item added to this section which identified when the conflict was resolved. This was done to create a clearer measure between when the conflict was resolved and when play resumed (if it did). Language was also added to clarify that the Post-Conflict State of Play item was to be coded based on the state of play within the first few seconds of the end of the conflict. Also, an additional item was added which identified the Initial Conflict Type, which signified the catalyst for the conflict itself. This information was previously available in the description of the conflict but adding the coding item allowed for the initial conflict type to be easily identified in Excel. Some less significant changes resulting from the pilot of the IMPACT Apology Coding Frame included reformatting the basic conflict information into item tables, so that basic information and codes would be easier to transfer to an Excel sheet and adding additional descriptive examples to the individual coding items to help clarify the meaning and intent of the conflict types and apology strategies.

Frame Training

Two of the five undergraduate research assistants who had worked on the project in the spring continued with the project for additional credit. These two researchers received approximately 12 hours of additional training on the final IMPACT Apology Coding Frame, which included a detailed walk through of the final version of each part and item of the frame, practice coding an observed conflict all together, practice coding four different conflicts and comparing and discussing our code choices. On the IMPACT Apology Coding Frame each section has a table with six columns. The first column across all sections is an abbreviation of the item number which was color coded based on each section. The second column is a description of the item or of code options. The third and fourth columns were either available for marking when items could not be observed or how many times the items occurred, in sections where this was not relevant the third and fourth columns were grayed out with instructions to leave them blank. The fifth column was the column where researchers entered their answers or codes. The final, sixth column, was designated for notes or descriptions. There are a total of 132 items in the IMPACT Apology Coding Frame. All coders were trained in how to transfer the fifth column of their frames into a single Excel document as a long column of entries.

Frame Reliability

At the end of training, 11 conflicts (just over 10% of the total 105 conflicts) were randomly chosen and assigned for reliability testing. Based on Krippendorff's methodology (Hayes & Krippendorff, 2007), the coders independently viewed and coded the same 11 conflicts which were compared for coding discrepancies. There were a total of 1441 units rated by each of the three coders (myself and two undergraduate researchers) in isolation from each other. Krippendorff's alpha coefficient (Krippendorff, 2004) was used to measure inter-coder reliability (ICR) and produced satisfactory reliability ($\alpha = 0.75$).

Although this was not quite as high as I would have liked, there was a high percentage of agreement between coders (*M Agreement* = 0.84) and a few impacting conditions may have influenced results. For example, not all coding entries had an equal probability of being used and there were significant differences in the number of coding entries available for different items ($n = 2$ to $n = 9$) and the types of entries (i.e. IT64UM vs. 00:08:24 vs. 2). Also, there were difficulties with pausing video playback, which needed to be accessed through multiple levels of security with no looping, but coders needed to enter timestamps down to a numeric level of one second which made exact accuracy on this section difficult.

Finally, there was a significant difference between the qualifications of the coders (the PI and one undergraduate researcher had more formal training in linguistics and behavior than the other undergraduate researcher). The reliability for the two more experienced coders was high ($\alpha = 0.84$) and the reliability for the two undergraduate researchers was also satisfactory ($\alpha = 0.76$); therefore, I decided to move forward with coding the remaining conflicts so that coding could be completed within the timeframe that the two undergraduate researchers were available. In line with Krippendorff's (2008) recommendations, I corrected one systematic disagreement, a discrepancy where a coder was misreading instructions on how to code items that could not be observed (an “X” was marked instead of a “0”), before coding the large data set and did not use that coder’s reliability data for the final data set.

Post-reliability, no changes were made to the coding descriptions or codes themselves; however, two clerical changes were made. One change included an addition to the directions for naming each coding file to include AM or PM in the file title. The other change was made to an abbreviation of one of the coding items. A repeat item abbreviation label was detected between the *Total of Victim Conflict Types* (TVC1) and the *Transgressor Verbal Conflict* (TVC1) frame items. The item label for *Total of Victim Conflict Types* was changed to TVCT1.

Quantitative Measurements

IMPACT Apology Coding Frame

As indicated earlier, the IMPACT Apology Coding Frame includes sections documenting conflict information, times indicating the start and end of each conflict and when, or if, children returned to play, the level of adult intervention, the level of peer intervention, conflict types exhibited by the initial transgressor and victim, documentation of the initial, post-conflict, and final state of play (not playing, cooperative play, or parallel play), evaluation of the intention behind the conflict, the transgressors use of verbal apology strategies, modifiers, elaborations, and nonverbal apology strategies, and the victim’s verbal and nonverbal forgiveness markers (see Appendix A). There are 12 sections in the IMPACT Apology Coding Frame which contain a combined total of 132 frame items that are coded based on observations of the peer conflict interaction and repair attempts (if they are made). The first section contains items that are relevant to the basic information about the conflict, such as who the participants are, when and where the conflict occurred, and whether any participants were masked. The subsequent sections are described below, but additional details can be found for all sections in Appendix A, if desired.

Return to Play and State of Play. Two sections on the IMPACT Apology Coding Frame were used to document the state of play before and after the conflict and, if play occurred, how much time elapsed between the end of the conflict and parallel or cooperative play. The State of Play section contained three items evaluating if children were playing or not, and if the play was cooperative or parallel, at three different interaction points (before the conflict began, within a few seconds of the end of the conflict, and if play resumed later). The nature of play between the transgressor and victim before, immediately following, and after returning to play was coded as 0 if not playing, 1 if involved in cooperative play, 2 if involved in parallel play, or 3 if it could not be determined.

In the Return to Play section, coders were asked to enter timestamps, in real-time (the time the event occurred on that day, not the timestamp on the video), of the initiation of the conflict, the conflict end, if/when play resumed, and then calculate and enter the time elapsed between the conflict end and play resumed, if it occurred. The amount of time elapsed between the conflict end and when play resumed was used to select the code for the final return to play frame item. Code options included nine options, with a 0 indicating that the "*Transgressor and Victim did NOT return to play during this play period or activity*," through an 8 indicating that "*More than 15 minutes elapsed before Transgressor and Victim returned to play*," with a 9 entered if the amount of time elapsed could not be determined.

Conflict Types. Observational conflict behavioral items were based initially on work described by Verbeek and de Waal (2001), where conflicts among preschool children were defined by instances of anger, aggression, argument, or distress, but were informed heavily by life experience and direct observations of the preschool children involved in the study. The primary categories of conflict included relational disputes, physical disputes, and verbal disputes. Conflict types were observed and coded for both the transgressor and the victim to evaluate the potential escalations and reactions of the victim after the initial transgression was instigated. The frame included 15 types of conflict strategies including relational disputes (like refusing to share or play together), physical disputes that are intentional or unintentional (including aggression like hitting or pushing, physical contact like blocking or holding, disputes over resources like taking items, or disputes over space like moving items that were being used for something else), and verbal disputes (like aggressive statements, arguments over resources, or how a space is being used).

On the IMPACT Apology Coding Frame, each of the 15 types of conflicts is its own item, and each item has its own description with examples that are relevant for preschool-aged children. Each item could be coded with a "0" if no instances were observed, a "1" if one instance was observed, a "2" if two instances were observed, a "3" if three or more instances were observed, or a “4" if they could not determine if an instance had occurred. For example, the frame item for Verbal Dispute: Dispute Over Resources includes the description: *Disputing who should have what resources, ex. “I want that,” “that’s mine,” “I’m using that,” “you can’t have that.”* If a coder heard language that fits a verbal dispute over resources, they would enter a “1” as code in the coding column to indicate that one instance of verbal dispute over resources had occurred and type the language spoken representing the dispute in the Notes/Description column for that item. If they heard two instances of verbal dispute over resources, they would enter a “2” in the coding column and enter transcriptions of both verbal utterances in the description column, and so forth. The same 15 conflict items were coded in two sections, one section was coded for transgressor conflict types used and one section was coded for victim conflict types used. Each section included one additional frame item that tallied the total of the transgressor’s or victim’s frequency code columns for conflict types used.

Verbal Apology Strategies. On the IMPACT Apology Coding Frame, verbal apologies are evaluated in three sections, verbal apology strategies, verbal apology modifications, and verbal apology elaborations. Verbal apology strategies and modifications were based on Olshtain and Cohen’s (1983) descriptions of apologies as specific speech acts, using components of the variables used by Cohen et al.’s (1986) later work. Unlike Cohen et al. (1986), I did not list the combinations of or the absence of apology strategies as item variables, as the format of this frame already accounts for the presence and absence as options for each item code. While I used their variable descriptions to create frame items, I adapted the descriptions and examples on the

IMPACT Apology Coding Frame to fit the developmental language and behavior of 3-to-5-year-old children. The verbal apology strategy section included 14 possible strategy types, each as their own item, such as types of apology language, explanations, taking responsibility, offers of repair, or "other" strategies, each with descriptions and examples. For example, the item Explanation – Specific included examples such as '*the teacher told me to put it away*,' '*I needed that piece,*' '*I was doing X to help.*' The verbal apology modification section included 18 items, with intensifiers (like really or very), statements that minimized or denied responsibility, emotionals (interjections like "oops"), minimization of the offense, comments about themselves or others, or "Other" modifications not listed, each with descriptions and examples. For example, the item Minimizing Responsibility included examples such as "*I told you I was going to…*," "*I said I wanted to…*," "*the teacher said I could…*," and "*Someone told me to…*"

I also created an additional section with the intent to capture levels of elaboration in apologies. This section included three items to measure the degree of apology elaboration used if the transgressor used a verbal apology. The verbal apology elaboration strategy items included "sorry" plus pronoun use ("*I* am sorry" or "Forgive *Me*"), a combination of an apology word and a label for the transgression but without the use of a personal pronoun ("sorry for taking the shovel"), or a combination of an apology word and a personal pronoun and a label for the transgression ("sorry *I* took your scissors").

Verbal strategy, modification, and elaboration items were coded using the same methods used to code conflict types. Code options ranged from "0" to "4" and were placed in the coding column to indicate how often the behavior occurred. Transcriptions of what child participants said, or descriptions of what behaviors were exhibited, were entered into the Notes/Description column of each item row, when they occurred. Finally, these sections each included one additional item that tallied the total of the transgressor's frequency code columns for verbal apology strategies used, verbal apology modifications used, and verbal apology elaboration strategies used.

Nonverbal Apology Items. Nonverbal apologetic expression and behavior categories were created based on observed behaviors, as well as elements from multiple works examining behavioral and emotional signs of remorse (Vaish et al., 2011), guilt, shame, and embarrassment (Julle-Daniere et al., 2020), and emotional responses (Knapp et al., 2013; Kochanska et al., 2002). Guilt markers such as gaze aversion, bodily tension, and general distress were informed by a study completed by Kochanska et al. (2002) in which children were observed at 22, 33, and 45 months for markers of guilt after being led to believe that they had damaged valuable objects. Nonverbal items in this section were also influenced by Julle-Daniere et al.'s (2020) work on nonverbal guilt signals which found that guilt was consistently associated with frowning and neck-touching; shame was associated with downward head and gaze movements; and embarrassment was associated with a downward gaze with controlled smile, head turns, gaze shifts, face touches, and blushing. Finally, remorse markers were also informed by the guilt and remorse displays that researchers effectively used to communicate remorse to 4- and 5-year-old children in Vaish et al.'s (2011) study of children's responses to guilt displays.

Nonverbal apology strategies were coded for the transgressor only and included 23 items broken down into various nonverbal code types such as proximity cues, haptic cues, gestures, facial cues, gaze behaviors, and vocalics. Each item had its own description or examples, for example the item Vocalics - Tension described the vocal indicators as having a “high pitch” exhibiting “nerves,” and/or “concern.” Nonverbal items were coded using the same methods used to code conflict types and verbal apology items. The nonverbal apology strategy section also included one additional item which tallied the total of the transgressor’s frequency code column of nonverbal apology strategies used.

Intention Behind Conflict. For each conflict, researchers scored two items related to the transgressor’s intention and the victim’s perspective and experience. The first item evaluated the victim’s perspective. Based on the victim’s behaviors and the researcher’s observations following the initial transgression, researchers were asked to code whether they thought the victim behaved as if they thought the initial transgression was intentional (on purpose), or unintentional (an accident). For the second item, researchers coded whether it appeared that the victim directly saw or experienced the transgression or not.

Forgiveness Markers. Markers of forgiveness were determined based on indicators from the victim that negative feelings were reduced and/or positive affect toward the transgressor was shown (indicators of forgiveness referenced in Fernández-Capo et al., 2017) and included verbal, nonverbal, and behavior items as a point of measurement for relational repair following the observed preschool peer conflict interactions. The forgiveness markers section of the IMPACT Apology Coding Frame tracked indicators of forgiveness including verbal forgiveness, verbal reassurance of the situation, transgression, or personal state, acknowledgement of accidental intention or lack of wrongdoing, verbal offers of forgiveness that offered inclusion, nonverbal markers of forgiveness like sharing resources or kind physical touches and playing together. Descriptions and age relevant examples were created for each item, for example, the item Verbal Offers of Forgiveness: Inclusion, included possible statements like the victim "*stating they can 'play together,' verbally offering 'do you want to use this' or stating, 'we can play your way."* As in the sections described above, the Forgiveness Markers section of the IMPACT Observational Coding Frame was coded based on observed frequencies and included one final item that tallied the frequency code column of forgiveness markers used.

Adult or Peer Intervention. Both Adult and Peer Interventions were coded based on their level of influence on the conflict outcome. Adult interventions were coded on a scale that ranged from 0 (No Adult Intervention) to 3 (Significant Adult Intervention) with 1 (Minimal Adult Intervention) described as an adult using a generic suggestion one time that does not include a solution that is specific to the conflict (such as asking children to "share" or "use their words") and 2 (Moderate Adult Intervention) described as using two generic suggestions which do not include conflict specific solutions. A 3 (Significant Adult Intervention) was given when the adult's words or actions directly influenced the outcome of the conflict because they suggested or insisted on a specific solution. The adult intervention item was coded a 4 if the coder could not determine the level of intervention. Peer interventions were coded 0 if there was no peer intervention, 1 if the peer's words or actions did not resolve the conflict, 2 if the peer's words or actions did resolve the conflict, or 3 if the level of peer intervention could not be determined.

Sorting Task Completed by Child Participants

Child participants were offered the Peer Likeability Sorting Task, which involved moving wallet sized photos of the classmates they "liked to play with the most" from one shallow box to another, twice each observational day, as described in the procedure section for the Child Participant Sorting Tasks. Per IRB request, child participants could not rank their selections using a number system or system which could easily lead children to discuss with their peers whether they were chosen "first, second, etc.," due to this constraint child participants were given an open space (a large, shallow, empty box) in which to place their choices. Choice preferences were recorded in the order in which child participants chose the laminated photos of their peers. If a child participant chose a photo which they later moved back to the first box and then chose again, their first, instinctive, choice was recorded. Also, if a child picked up one photo and then another photo but placed both photos in the choice box at the same time then the order was recorded based on which photo was picked up first. All hand-recorded data were later checked against video footage of the sorting tasks and found to be highly accurate, except for a few instances where a child participant had moved a photo back and forth between the selection box and the choice box more than once and the selection was inadvertently recorded twice on the hand-recorded data.

Qualitative Measurements

Child Participant Interviews

The interviews with the child participants examined the child participants' understanding of and feelings about apologies. As mentioned above, interviews with 22 child participants were video recorded and later transcribed by research assistants who were unaware of the participants' identities. I reviewed all transcriptions for accuracy and compared them to transcription notes I had taken during the interviews, especially in instances when responses were spoken quietly and may have been difficult to transcribe accurately.

Due to the age of the participants and the possibly sensitive content that needed to be discussed (possible recall of how others made them feel after transgression events), the development of the interview protocols and question scripts were influenced by the National Institute of Child Health and Human Development (NICHD) investigative interview protocol (Bourg et al., 1999; Erens et al., 2022; Ruiter et al., 2016; Lamb & La Rooy, 2021). Although NICHD investigative interview protocols were developed for forensic interviews regarding more serious recall events, its phases (such as an introduction, rapport building, open or cued invitation questioning instead of posed prompts, and neutral closing questions) are important for establishing trust and rapport in such a young interview population and reducing anxiety over discussing potentially stressful topics like hurting or being hurt by someone else. Before beginning each interview, I reintroduced myself and reminded child participants of the times we played the sorting task together, and that I wanted to ask them questions (NICHD protocol introductory phase). I also made sure to ask them again for verbal consent before beginning the interview. Next, I let them know that what they thought about things was very important to me and asked them about some of their favorite things while giving excited responses to establish rapport and help them feel comfortable (NICHD protocol rapport building phase). No episodic memory training phase was needed as no specific event recall was needed for the interview and substantive questions were begun after the rapport phase. Because of their vulnerability as minors, I used a structured protocol and interview script, pre-approved by the IRB, which included prompts available for clarification ("It's okay if you don't know! What is your best guess?") and explanation ("An apology is when we let someone else know that we feel bad about something that we did or said.").

The prominent structure used for the substantive interview questions was cued invitations, which have been found to elicit more relevant information in child interviews (Brown et al., 2013). No option-posing questions were used (e.g. yes or no questions). The child participant interviews included two questions regarding their understanding of apologies, one question that clarified whether they thought that apologies extended beyond the word sorry, one question about what they think they do when they are a transgressor, and one question about what makes them feel better as a victim (see Appendix B). Per the last NICHD recommended neutral topic phase, the interview concluded with neutral attempts to reduce feelings of anxiety that might have occurred during the interview by thanking the child for participating and reminding them that their thoughts and feelings are important to me followed by questions about what they thought they were going to do next in the classroom.

Parent Surveys

The surveys created for parent completion contained six substantive questions and 13 demographic questions and were accessed as online surveys using Qualtrics. All surveys were completed via a link sent through email to parents who had signed consents to participate in the study. Most questions were cued and open-ended and all option-posing questions had follow-up questions that asked for further elaboration. The six substantive questions on the parent survey began with two questions which asked parents to describe their roles in helping their child repair relationships, resolve conflicts when they were the transgressor, and how they intervene directly, if they do. The next question asked parents what behaviors they observe of their child during conflicts. The final three questions asked parents if they have ever prompted their child to give a verbal apology, how they prompt the apology (or if they do not ask them to apologize, why not), if they think that there are other ways to show remorse, and whether they think that other ways of showing remorse are less, equally, or more effective than verbal apologies (see Appendix C).

The 13 demographic questions for the parent survey were either multiple-choice or fill-in-the-blank. Multiple choice options were given for questions categorizing their gender and their participating child's gender, their age, their ethnic background and ethnic background of their participating child, their highest level of education, their marital status, employment status, a range for their annual household income, and whether English was the primary language spoken in the home. Fill-in-the-blank options were given for whether any other children lived in the household, the ages of other children, what city they reside in, and what other language was spoken as the primary language in the home if English was not selected. Options were given to select "Other" and self-describe or select "Prefer not to answer/say" whenever appropriate.

Staff Surveys

The staff surveys contained six substantive questions and eight demographic questions and were created using Qualtrics. Most questions were cued, and open-ended, questions and all option-posing questions had follow-up questions that asked for further elaboration. Staff members were first asked about how long they have worked at the CDLS and with their current group of children. The next three questions asked for examples of conflicts that they see among children they work with, how they intervene if they do, and what they might say if they intervene. The fifth question asked more specifically about apologies, how they prompt apologies and how often (or what alternative language they use if they do not prompt apologies) and whether they think children should verbally apologize (and why or why not). The final question asked if they thought children should verbally apologize, if there are other ways to show remorse, and whether they think other ways are less, equally, or more effective than apologies at repairing relationships (for full question phrasing, see Appendix D).

The eight demographic questions for the staff surveys were either multiple-choice or fill-in-the-blank. Multiple choice options were given for questions categorizing their gender, age, ethnic background, highest level of education, employment status, annual household income, and whether English was their primary spoken language. Fill-in-the-blank options were given for their city of residence and other languages spoken as their primary language. Options were given to select “Other” and then self-describe or select “Prefer not to answer/say” whenever appropriate.

Data Analysis

Quantitative Measures

Multiple means of analysis were used to interpret the data coded for the IMPACT Apology Coding Frame. Descriptive statistics were used to identify and describe frequencies for the different types of conflicts that occurred, how often different levels of adult and peer interventions occurred, the duration of time between the end of conflicts and a return to play (if it occurred), verbal or nonverbal apologetic communication strategy use, and which forgiveness markers were observed. Where appropriate, ANOVA analysis was completed to assess the significance among IMPACT Apology Coding Frame variables. Fisher’s exact test was used to evaluate apology strategy use and the time it took to return to play for H2 due to expected small counts. Pearson’s product-moment correlation was used to compare apology strategy use to peer likability results from the sorting task. Regression modeling was completed to test for associative relationships between frame variables, child participant sex, child participant age, and classroom belonging. Additional associations were explored ad hoc between verbal apology strategy use and forgiveness markers using Fisher’s test (due to expected small count size) and nonverbal apology strategy use and forgiveness markers using Pearson’s chi-squared test. Also ad hoc, an exploratory factor analysis was attempted between multiple frame variables to assess possible relationships between variables.

Qualitative Measures

For qualitative measures, I analyzed participant responses for themes that were emerging from the analysis using a thematic analysis approach (Braun & Clark, 2006). For the Child Participant Interviews (*n* = 22), I analyzed responses for patterns within answers and grouped responses based on question content and relevance. For the parent and staff Qualtrics surveys, completed by nine parents and six classroom teachers of child participants, I analyzed responses for patterns and compared parent and teacher responses for similarities and differences between the two groups by completing a thematic analysis of survey responses. I used quantitative description to evaluate and present responses for closed-ended questions and for open-ended responses that fell into clear patterns and were relevant to testing hypotheses. I used Qualtrics, NVivo, and manual close analysis techniques to evaluate all open-ended question responses. I clustered themes into three areas of contention related to (a) parents' and teachers' views about their roles in children's conflicts, (b) their attitudes and expectations for apologetic communication, and (c) their expectations for socialization and behavior during social repair.

Mixed-Methods

Descriptive statistics from both quantitative and qualitative measures were compared to determine results for research question five, comparing children's understanding of apologies to how they use apology behaviors, and research question eight, examining whether observed child participant behavior aligned more closely with expectations outlined in survey responses by parents and teachers. Observations of apology behavior were first quantified using the IMPACT Apology Coding Frame, then those counts were compared to counts of thematic responses and written descriptions from child participant interviews and survey responses. The units of analysis used to determine themes in responses for child participant interviews, parent surveys, and staff surveys, were responses for each question.

Validity, Reliability, and Methodological Integrity

Quantitative Measures

The IMPACT Apology Coding Frame was developed for the purposes of exploratory observation to determine naturally occurring apologetic behaviors used by preschool-aged children in their classroom context. Because the purpose of this study and coding frame was exploratory and access to the child population was limited, individual frame items were not validated. Frame items were determined based on previously observed conflict types and verbal and nonverbal indicators of remorse used in prior studies. However, it should be noted that verbal and nonverbal apologetic strategies used by children in this population sample revealed many inconsistencies between apologetic strategies identified in older child and adult populations and this population. Due to these differences and also due to data counts that were relatively small, more data should be collected to test frame validity and reliability, especially now that items relevant to a preschool population have been discovered.

Additionally, specific behaviors were coded on the frame based on two columns, one column was used to track the frequency of observed instances using an “x” for each observation. The next column was used to mark a code for the amount of "x"s based on whether no observations of the item were made, or if one, two, or three or more observations were made (see Appendix A). Reliability tests were satisfied between coders by using the column that contained codes; however, the columns which contained "x"s for each observation were later re-coded into a numeric value so that raw frequencies could also be represented and discussed. Recoding was only completed for codes that represented "3 or more" instances of an observed behavior and was done by converting the corresponding amount of "x"s for that behavior into a raw numeric frequency value. A total of 154 codes (out of 735 codes which were determined based on "x"s) were re-coded due to previously representing "3 or more" observed instances.

The Peer Likeability Sorting Task was limited by IRB restrictions which prohibited labeling peers as "friends" or using any numbered rank system. This led to data limitations which prohibited true rank analysis. Child participant responses had a high rate of variability, sometimes choosing only one peer, sometimes choosing all peers. While the sorting task was likely a valid measure of the presence or absence of likeability because it did allow children to identify who they liked to play with, the methodology behind the task and the variability in child responses made the reliability of the task less robust.

Qualitative Measures

The child interviews revealed concerns with children's understanding of the term "apology" used in questions. For example, children in this age range may understand the word "sorry" as an apology but may need more context than was provided in the interview questions used to place the term "apology" itself if used near the beginning of an interview. Overall, although the interview questions can be reliably reproduced due to using a specific interview script with all participants, there were possible concerns with validity due to inconsistent child participant responses. It is unknown how much of the response inconsistencies were due to developmental or language factors and how much were due to the internal validity of the questions themselves.

The primary concerns with parent and staff surveys were related to low sample sizes. While the teacher responses are likely a reliable indication of expectations in the classroom due to having responses from both primary teachers and most student teachers, only nine out of 28 parents of child participants responded. Due to low participation, it is unlikely that the subsample of the parent population who took the survey is descriptive of the full parent population.

Chapter 4: Results

This chapter begins with a description of participant flow and recruitment. The results for this study are then discussed in the same order as the method section, beginning with the quantitative results from measures developed for the first study aim, followed by results from the qualitative measures developed for the second study aim.

Participant Flow and Recruitment

There were 28 child participants enrolled in this study. The child participants were all recruited from the Child Development Laboratory School, at the University of Minnesota, Twin Cities, between December of 2022 and February of 2023 via emails, posters, and verbal invitations by CDLS staff. Recruitment of child participants was based on age eligibility of children 3 years to 5 years of age, which was necessary to ensure that the sample focused on preschool-aged children. Two preschool classrooms were chosen to be included in the study, one AM (n = 18) and one PM (n = 10) preschool class. The classrooms were chosen based on the level of consent achieved in the classroom - both classes had full parental consent for all child participants in the room. This decision was made in consideration of the children participating in the study as it allowed for all children to play and learn naturally in their classroom environments without the need for separating any children based on consent for participation. Of the 28 child participants whose parents signed consent for them to participate in the study, 68% were boys (n = 19) and 32% were girls (n = 9), with ages ranging from 3 years and 6 months to 5 years and 6 months and a combined mean age of 4 years and 6 months in March 2023. Before beginning the study, all parents and staff who signed consents to participate in the study were sent a link via email (from CDLS teachers and co-directors) encouraging them to participate in the parent or staff surveys. Nine of the twenty parents who completed the surveys were included as parent participants in the interview portion of the study due to having children in one of the two participating classrooms; the remaining survey responses were excluded. Six out of twelve CDLS staff members who completed the staff survey were included in the study as teacher participants due to being teachers in one of the two participating classrooms; the remaining staff member responses were excluded. Both lead teachers and four support teachers from the two classrooms participated in the survey.

From the second week of March 2023, through the second week of April 2023, all 28 child participants were observed and recorded using both mounted and hand-held video cameras for up to two non-consecutive days each week. During this same period, child participants were given the opportunity on each observation day to participate in a "Sorting Game," which was the Peer Likeability Sorting Task, at the beginning and end of each day. Two parents, one from each classroom, verbally requested that their child only be videotaped for research purposes but were not asked to participate in any activities. These children were excluded from both the daily sorting tasks and the child participant interviews that occurred during the third week of April 2023. No child participant data was excluded from the study; however, sorting data and interview data could not be completed for all children due to child participants' absences or decisions not to participate for the day. Also, a portion of two different days of observations were purposely not recorded due to the class temporarily participating in an activity with another class not included in the study.

Quantitative Results Relating to Study Aim 1

For the first study aim, research questions (1-4) focused on identifying behavioral patterns of naturally occurring verbal and nonverbal apologetic behavior and whether those behavioral choices were associated with two social repair outcomes, the tendency to return to play, and peer likeability. The hypotheses for Study Aim 1 are:

H1: Preschool-aged children at the CDLS will use more nonverbal apologetic communication strategies than verbal apologetic communication strategies following peer conflict due to age and development.

H2: The amount of time before returning to play following peer conflict is negatively correlated with occurrences of apologetic communication acts.

H3: Children who use apologetic communication following peer conflict will be more likely to be viewed positively by peers.

In this section, quantitative descriptions will be provided for both the IMPACT Apology Coding Frame measure and the Peer Likeability Sorting Task measure, followed by results for the related research questions and hypotheses.

IMPACT Apology Coding Frame

This quantitative results subsection includes descriptive statistics for each of the components of the IMPACT Apology Coding Frame relevant to this study. The following results are based on coding completed for 105 child participant peer conflicts that fit the parameters of the study and could be observed clearly on recorded video. Of the 28 child participants observed, 86% (n = 24) were involved in peer conflict and 14% (n = 4) were not involved in peer conflict. Demographics relating to sex, age range, and age mean remained the same for the 24 child participants observed in peer conflicts, with the same percentage split for sex but fewer overall male (*n* = 16) and female (*n* = 8) participants. All narrative percentages have been rounded to whole numbers. Please reference Appendix A for additional descriptions of any items or sub-items referred to in this section.

General Information

Background information was coded for each of the 105 conflicts. Details about the conflict name and location, which child participant was the initial transgressor or victim, whether child participants wore masks or not, and if any other adults or peers were involved were recorded. The most common conflict location was outside on the playground, which accounted for the location of 61% (*n* = 64) of the conflicts. Approximately 31% (*n* = 32) of the conflicts occurred in the classroom, 5% (*n* = 5) occurred in the hallway, 3% (*n* = 3) occurred in the gym, and one conflict occurred in an unlabeled location.

There were 21 child participants coded as initial transgressors (e.g. the child participant who enacted the initial action or statement that triggered the conflict). Most child participants were labeled as the initial transgressor for seven or fewer conflicts out of the total 105 coded conflicts (*n* = 19 child participants, which accounted for 62 of the 105 conflicts). There were two child participants who were labeled as the initial transgressors in more than 20 different conflicts each. One child was the initial transgressor in 21 conflicts and the other child was the initial transgressor in 22 conflicts, for a total of *n* = 43 conflicts, or 41% of the conflicts.

There were 24 child participants coded as primary victims (e.g. the child participant who was on the receiving end of the initial action or statement that triggered the action). Of those participants, 23 of them were the primary victim(s) for eight or fewer conflicts (89% of the conflicts). The remaining child participant had a slightly higher percentage of victimization at a total of 11 conflicts where they were the primary victim (11% of the conflicts).

In 65% (*n* = 68) of the 105 conflicts, no child participants were masked. In 18% (*n* = 19) of the conflicts both the transgressor and victim were masked. In 11% (*n* = 12) of the conflicts, only the transgressor wore a mask, and in 6% (*n* = 6) of the conflicts, only the victim was masked.

In 70% of the conflicts (*n* = 74), one adult intervened in the conflict. In 10% of the conflicts, two adults intervened (*n* = 10). In 20% of the conflicts, there was no adult intervention (*n* = 21). Peers intervened in only 4% of the conflicts (*n* = 4). Additional details regarding the extent of intervention are listed in the intervention sections appearing later in this section.

Return to Play

For each of the 105 conflicts, times were recorded for when the conflict started, ended, and when play resumed (if that occurred). All times were recorded in hour, minute, and second (HH:MM:SS) format. The amount of time that elapsed between when the conflict ended and play resumed was calculated and used to determine a code for the IMPACT Apology Coding Frame item described as Return to Play and was based on whether play resumed and how much time had elapsed between the end of the conflict and returning to play for each of the 105 conflicts (See Table 2).

Table 2

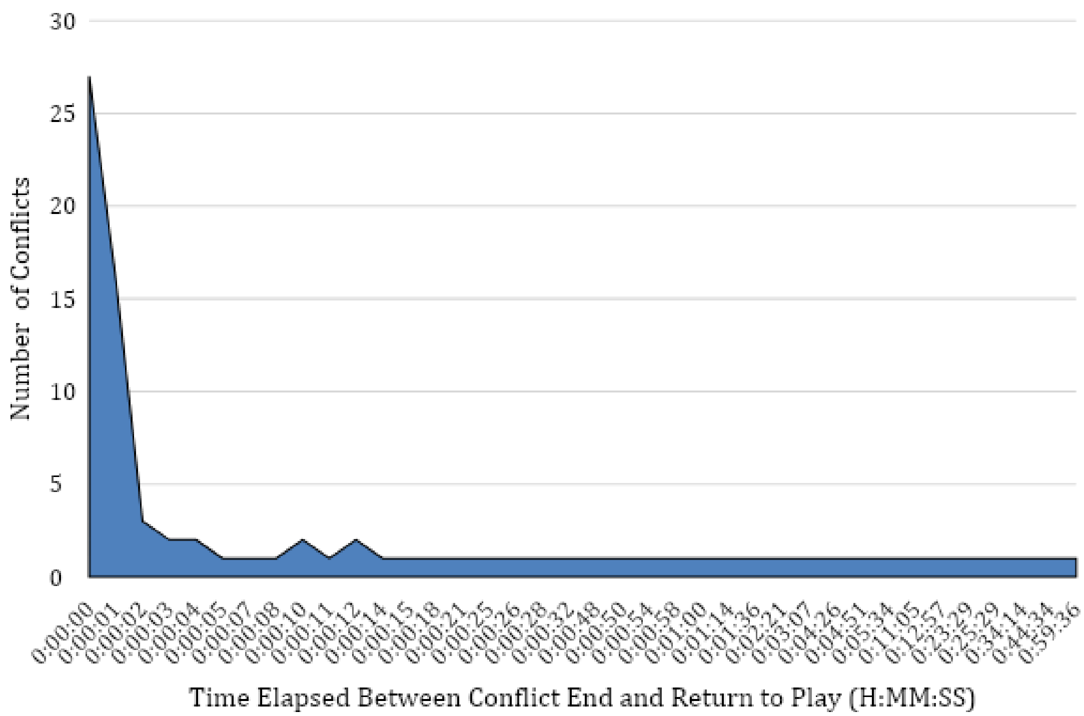
Return to Play

Item Subcategory	Number of Occurrences (%)
Transgressor and Victim did NOT return to play during this play period or activity	17 (16.19)
Play did not stop for more than a very brief pause following conflict	51 (48.57)
Play stopped following conflict but for less than one minute before Transgressor and Victim returned to play	19 (18.09)
1-2 minutes elapsed before Transgressor and Victim returned to play	3 (2.85)
2-3 minutes elapsed before Transgressor and Victim returned to play	1 (0.95)
3-5 minutes elapsed before Transgressor and Victim returned to play	3 (2.85)
5-10 minutes elapsed before Transgressor and Victim returned to play	1 (0.95)
10-15 minutes elapsed before Transgressor and Victim returned to play	2 (1.90)
More than 15 minutes elapsed before Transgressor and Victim returned to play	5 (4.76)
Could not be determined	3 (2.85)

In 81% (N = 85) of the 105 conflicts, the transgressor and victim returned to play within the timeframe of their activity (outdoor play, indoor play, or learning time) or their day. Of the 85 conflicts in which the transgressor and victim returned to play, more than half (60%) returned to play within the first few seconds of the conflict ending (See Figure 1).

Figure 1

Time Elapsed Between Conflict End and Return to Play



The average time that it took the transgressor and victim to return to play was 2 minutes and 52 seconds (*SD* = 9 minutes 51 seconds). However, in 92% (*n* = 78) of the 85 conflicts in which the transgressor and victim returned to play the child participants returned to play in under 6 minutes (*M* = 25 seconds, *SD* = 14.8 seconds) and in 71% (*n* = 60) they returned to play in under 15 seconds (*M* = 2 seconds, *SD* = 3.9). In almost half of the total conflicts (49%, *n* = 51 out of 105 conflicts) play did not stop for more than a very brief pause before the transgressor and victim returned to play. This indicates that, overall, children had very little time between the end of conflicts and returning to play.

State of Play

The nature of play that was occurring between the victim and transgressor of each conflict was measured at three points in the interaction, before the initial transgression occurred, within the first few seconds of the conflict resolving (if that occurred), and their state of play if they engaged in play with each other post-conflict. In the data, there was one instance when the initial state of play could not be determined, one instance when the post-conflict state of play could not be determined, and two instances when the return-to-play state could not be determined. For the remaining conflicts, at the initial state of play interaction point, 25% (*n* = 26) of peer dyads were not playing with each other, 26% (*n* = 27) were engaged in cooperative play together, and 49% (*n* = 51) were engaged in parallel play next to or near each other. At the post-conflict state of play interaction point, 46% (*n* = 48) of peer dyads were not playing with each other, 16% (*n* = 17) were engaged in cooperative play, and 37% (*n* = 39) were engaged in parallel play. At the final interaction point evaluating the state of play after they settled back into play following peer conflict, 18% (*n* = 19) of peer dyads were not playing with each other, 23% (*n* = 24) were engaged in cooperative play, and 57% (*n* = 60) were engaged in parallel play.

Conflict Types

The IMPACT Apology Coding Frame included two sections that identified types of conflict behaviors. One section tracked transgressor conflict behaviors and one section that tracked victim conflict behaviors. Each section included the same 15 different types of conflicts (each as their own frame item). The conflict types were divided into three categories: physical disputes (intentional or unintentional), relational disputes, and verbal disputes. The frequency codes and total frequencies for each conflict type exhibited by the transgressor are listed in Table 3.

Table 3

Transgressor Conflict Types Used

		Number of Each Code Across All Conflicts (% out of 105 conflicts)			Total Frequency Across All Conflicts	Total Subcategory Frequency
Item Subcategory	Subcategory Item Description	1	2	3 or more		
Physical Dispute (Intentional)	Aggression	12 (11.43)	2 (1.90)	8 (7.62)	62	
	Physical Contact	13 (12.38)	7 (6.67)	8 (7.62)	71	
	Dispute Over Resources	19 (18.1)	4 (3.81)	3 (2.86)	43	
	Dispute Over Use of Space	16 (15.24)	0 (0.00)	3 (2.86)	28	
Physical Dispute (Unintentional)	Physical Contact	8 (7.62)	0 (0.00)	0 (0.00)	8	
	Dispute Over Resources	4 (3.81)	1 (0.95)	0 (0.00)	6	

		Number of Each Code Across All Conflicts (% out of 105 conflicts)			Total Frequency Across All Conflicts	Total Subcategory Frequency
	Dispute Over Use of Space	18 (17.14)	1 (0.95)	2 (1.90)	28	
	Other Physical Dispute	0 (0.00)	0 (0.00)	0 (0.00)	0	238 Physical Disputes
Relational Dispute	Participant Refuses to Share Items	8 (7.62)	1 (0.95)	0 (0.00)	10	
	Participant Refuses to Play Together	1 (0.95)	0 (0.00)	2 (1.90)	9	
	Relational Dispute: Other	0 (0.00)	0 (0.00)	0 (0.00)	0	19 Relational Disputes
Verbal Dispute	Aggression	1 (0.95)	0 (0.00)	0 (0.00)	1	
	Dispute Over Resources	2 (1.90)	2 (1.90)	7 (6.67)	37	
	Dispute Over Use of Space	9 (8.57)	2 (1.90)	10 (9.52)	65	
	Verbal Dispute: Other	4 (3.81)	3 (2.86)	13 (12.38)	78	181 Verbal Disputes

Cohen's *f* was used to calculate minimum sample sizes needed to achieve 80%

power and at least an effect size (ES) of 0.2 at 95% significance for each subsection of transgressor conflict types. All subsections satisfied the required minimum sample size needed (transgressor physical dispute sample size: actual $N = 840$, 105 per item type, required $N = 368$, 46 per item type; transgressor relational dispute sample size: actual $N = 315$, 105 per item type, required $N = 246$, 82 per item type; transgressor verbal dispute sample size: actual $N = 420$, 105 per item type, required $N = 280$, or 70 per item type).

A one-way ANOVA, statistical analysis of variance, comparing transgressor's physical conflict types used revealed that there was a statistically significant difference in mean frequencies of physical conflict types between at least two groups ($F(7, 832) = [6.223]$, $p < .001$). A post hoc Tukey test for multiple comparisons was used to find significant differences between variables. The mean value of frequencies was significantly different between physical dispute (intentional): aggression and physical dispute (unintentional): physical conflict ($p = .007$, 95% CI = [0.08, 0.95]), between physical dispute (intentional): aggression and physical dispute (unintentional): dispute over resources ($p = .005$, 95% CI = [0.10, 0.96]), and between physical dispute (intentional): aggression and physical dispute: other ($p < .001$, 95% CI = [0.16, 1.02]). The frequency of conflict types for physical dispute (intentional): physical contact was significantly different from the same three variables: physical dispute (unintentional): physical conflict ($p < .001$, 95% CI = [0.17, 1.03]), physical dispute (unintentional): dispute over resources ($p < .001$, 95% CI = [0.19, 1.05]), and physical dispute: other ($p < .001$, 95% CI = [0.24, 1.11]). There were no significant differences in frequencies between physical dispute (intentional): dispute over resources, physical dispute (intentional): dispute over use of space, or physical dispute (unintentional): dispute over use of space, and any other conflict types used.

A one-way ANOVA of relational conflict types revealed no statistically significant difference in the mean frequencies of transgressor relational conflict types between at least two item groups ($F(2, 312) = [1.991]$, $p = .138$).

A one-way ANOVA of transgressor verbal conflict types revealed that there was a statistically significant difference in mean frequencies between at least two groups ($F(3, 416) = [5.371]$, $p = .001$). A post hoc Tukey test for multiple comparisons was used to find significant differences between variables. The mean value of frequencies was significantly different between verbal dispute: aggression and verbal dispute: dispute over use of space ($p = .012$, 95% CI = [-1.12, -0.10]) and between verbal dispute: aggression and verbal dispute: other ($p = .001$, 95% CI = [-1.24, -0.22]). There were no significant frequency differences between verbal dispute: dispute over resources and any other variables.

Finally, physical, relational, and verbal transgressor conflict items were collapsed. Descriptives were calculated for each subtype and were as follows: physical ($N = 840$, $M = 0.29$, $SD = 1.051$), relational ($N = 315$, $M = 0.06$, $SD = 0.382$), verbal ($N = 420$, $M = .43$, $SD = 1.458$). A one-way ANOVA comparing the three transgressor conflict sub-types revealed that there was a statistically significant difference in mean frequencies between at least two groups ($F(2, 1572) = [10.504]$, $p = <.001$). However, because the ANOVA revealed nonhomogeneous relationships between the subgroups due to different amounts of subtype categories, a Welch test was run on transgressor conflict subcategory frequencies with a resulting significance of $p < .001$. A Games-Howell post hoc test was completed and revealed that the mean value of frequencies was significantly different between physical conflicts and relational conflicts ($p < .001$, 95% CI = [0.13, 0.33]) and between verbal and relational conflicts ($p < .001$, 95% CI = [0.20, 0.55]).

The frequency codes and total frequencies for conflict types exhibited by the victim are listed in Table 4.

Table 4

Conflict Types Used by Victim

		Number of Each Code Across All Conflicts (% out of 105 conflicts)			Total Frequency Across All Conflicts	Total Subcategory Frequency
Item Subcategory	Subcategory Item Descriptions	1	2	3 or more		
Physical Dispute (Intentional)	Aggression	6 (5.71)	4 (3.81)	8 (7.62)	44	
	Physical Contact	10 (9.52)	9 (8.57)	13 (12.38)	101	
	Dispute Over Resources	4 (3.81)	0 (0.00)	3 (2.86)	15	
	Dispute Over Use of Space	2 (1.9)	1 (0.95)	0 (0.00)	4	
Physical Dispute (Unintentional)	Physical Contact	2 (1.90)	0 (0.00)	0 (0.00)	2	

		Number of Each Code Across All Conflicts (% out of 105 conflicts)			Total Frequency Across All Conflicts	Total Subcategory Frequency
	Dispute Over Resources	5 (4.76)	0 (0.00)	0 (0.00)	5	
	Dispute Over Use of Space	0 (0.00)	1 (0.95)	0 (0.00)	2	
Physical Dispute (Other)	Other Physical Dispute	1 (0.95)	0 (0.00)	1 (0.95)	7	180 Physical Disputes
Relational Dispute	Participant Refuses to Share Items	22 (20.95)	3 (2.86)	1 (0.95)	32	
	Relational Dispute: Participant Refuses to Play Together	7 (6.67)	0 (0.00)	3 (2.86)	25	
	Relational Dispute: Other	1 (0.95)	0 (0.00)	0 (0.00)	1	58 Relational Disputes
Verbal Dispute	Aggression	0 (0.00)	0 (0.00)	3 (2.86)	14	
	Dispute Over Resources	5 (4.76)	5 (4.76)	10 (9.52)	49	
	Dispute Over Use of Space	14 (13.33)	8 (7.62)	27 (25.71)	179	
	Verbal Dispute: Other	7 (6.67)	5 (4.76)	11 (10.48)	86	328 Verbal Disputes

Cohen's *f* was used to calculate minimum sample sizes needed to achieve 80% power and an ES of 0.2 at 95% significance for each sub-section of victim conflict types. As the sample sizes and number of frame items were the same for transgressor and victim conflict items, all subsections satisfied the required minimum sample sizes.

A one-way ANOVA comparing the physical conflict types used by victims revealed that there was a statistically significant difference in mean frequencies of physical conflict types between at least two groups ($F(7, 832) = [14.055]$, $p < .001$). A post hoc Tukey test for multiple comparisons was used to find significant differences between variables. The mean value of frequencies between physical dispute (intentional): physical conflict and all other variables was highly significant (physical dispute (intentional): aggression ($p < .001$, 95% CI = [0.16, 0.92]), physical dispute (intentional): dispute over resources ($p < .001$, 95% CI = [0.44, 1.20]), physical dispute (intentional): dispute over use of space ($p < .001$, 95% CI = [0.55, 1.30]), physical dispute (unintentional): physical contact ($p < .001$, 95% CI = [0.56, 1.32]), physical dispute (unintentional): dispute over resources ($p < .001$, 95% CI = [0.54, 1.29]), physical dispute (unintentional): dispute over use of space ($p < .001$, 95% CI = [0.56, 1.32]), and physical dispute: other ($p < .001$, 95% CI = [0.52, 1.27]). There was also a significant difference in mean value of frequencies between physical dispute (intentional): aggression and three other variables: physical dispute (intentional): dispute over use of space ($p = .047$, 95% CI = [0.00, 0.76]), physical dispute (unintentional): physical contact ($p = .030$, 95% CI = [0.02, 0.78]), and physical dispute (unintentional): dispute over use of space ($p = .030$, 95% CI = [0.02, 0.78]). There were no other significant differences in mean frequencies.

A one-way ANOVA of relational conflict types revealed that there was a statistically significant difference in the mean frequencies of victim relational conflict types between at least two item groups ($F(2, 312) = [4.781]$, $p = .009$). The mean value of frequencies was significantly different between relational dispute: participant refuses to share items and relational dispute: other ($p = .010$, 95% CI = [0.06, 0.53]). There were no other significant differences in mean value frequencies.

A one-way ANOVA of victim verbal conflict types revealed that there was a statistically significant difference in mean frequencies between at least two groups ($F(3, 416) = [12.968]$, $p < .001$). A post hoc Tukey test for multiple comparisons was used to find significant differences between variables. The mean value of frequencies was significantly different between verbal dispute: dispute over use of space and all three other variables: verbal dispute: aggression ($p < 0.001$, 95% CI = [0.89, 2.26]), verbal dispute: dispute over resources ($p < 0.001$, 95% CI = [0.55, 1.92]), and verbal dispute: other ($p = .005$, 95% CI = [0.20, 1.57]). There was also a significant difference in mean value frequencies between verbal dispute: aggression and verbal dispute: other ($p = .050$, 95% CI = [-1.37, 0.00]). There were no significant differences in mean frequencies between any other variables.

Finally, physical, relational, and verbal victim conflict items were collapsed. Descriptives were calculated for each sub-category and were as follows: physical (N = 840, M = 0.21, SD = 0.950), relational (N = 315, M = 0.18, SD = 0.734), verbal (N = 420, M = .78, SD = 2.006). A one-way ANOVA comparing the three victim conflict sub-types revealed that there was a statistically significant difference in mean frequencies between at least two groups ($F(2, 1572) = [30.687]$, $p = <.001$). However, the ANOVA also revealed nonhomogeneous relationships between the subgroups. A Welch test was run on the victim conflict sub-type frequencies with a resulting significance of $p < .001$. A Games-Howell post hoc test was completed and revealed that the mean value of frequencies was significantly different between the mean value of frequencies for verbal conflicts and the two other variables: physical conflicts ($p < .001$, 95% CI = [0.32, 0.81) and relational conflicts ($p < .001$, 95% CI = [0.35, 0.85]). The difference in frequencies between physical and relational subtypes was nonsignificant.

Verbal Apology Strategies

There were three categories for verbal apologies: strategies, modifiers, and elaborations, all items were coded based on transgressor behavior. Out of 105 conflicts, 11% ($n = 12$) contained verbal apology strategies, 10% ($n = 10$) contained verbal apology modifiers, and 2% ($n = 2$) contained verbal apology elaborations.

The verbal apology strategies section of the IMPACT Apology Coding Frame consisted of verbal apology expressions, explanations, taking responsibility, offering repair, promises of forbearance, and “other” apology strategies, separated into 14 subtype items (See Table 5).

Table 5

Verbal Apology Strategies

		Number of Each Code Across All Conflicts (% out of 105 conflicts)			Total Frequency Across All Conflicts	Total Subcategory Frequency
Item Subcategory	Subcategory Item Descriptions	1	2	3 or more		
Verbal Apology Term Use	Apology - Sorry	2 (1.9)	0 (0.00)	0 (0.00)	2	
	Apology - Excuse	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Apology - Forgive	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Apology - Apologize	0 (0.00)	0 (0.00)	0 (0.00)	0	2 Apology Terms
Explanation	Explanation – Specific	6 (5.71)	2 (1.9)	0 (0.00)	10	
	Explanation – Nonspecific	1 (0.95)	0 (0.00)	0 (0.00)	1	11 Explanations
Responsibility	Statement of Implicit Responsibility	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Statement of Lack of Intent	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Statement of Self-Deficiency	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Self-Blame	0 (0.00)	0 (0.00)	0 (0.00)	0	0 Responsibility Statements

		Number of Each Code Across All Conflicts (% out of 105 conflicts)			Total Frequency Across All Conflicts	Total Subcategory Frequency
Repair	Repair – Specific	1 (0.95)	0 (0.00)	0 (0.00)	1	
	Repair – Nonspecific	2 (1.9)	0 (0.00)	0 (0.00)	2	3 Offers of Repair
Forbearance	Promise of Forbearance	0 (0.00)	0 (0.00)	0 (0.00)	0	0 Forbearance
Strategies (Other)	Other Apology Strategy	0 (0.00)	0 (0.00)	0 (0.00)	0	0 Other

There were 16 instances of verbal apology strategies used within the 12 identified conflicts. There were two instances of verbal apology term use, one instance where the transgressor verbalized "Sorry" and another when a transgressor verbalized "I'm sorry." The frame item totaling the verbal apology strategies coding column for each transgressor was used in inferential statistical analysis for H1, H2.

Cohen's *f* was used to calculate minimum sample sizes needed to achieve 80% power and an ES of 0.2 at 95% significance for verbal apology items. The required minimum sample size needed was N = 462 (33 per item) and the actual sample size was N = 1470 (105 per item) which satisfied the minimum sample size requirements.

Due to differences in sample group size for verbal apology sub-categories and low instances overall of verbal apology strategy use, verbal apology items were not tested by sub-category. Instead, they were tested individually to determine if any individual verbal apology strategy types were statistically significant. A one-way ANOVA for verbal apology strategy items revealed that there was a statistically significant difference in mean frequencies between at least two variables (*F*(13, 1456) = [5.162], p <.001). A post hoc Tukey test for multiple comparisons was used to find significant differences between each of the 14 verbal apology strategy variables. The difference between the mean value of frequencies between the verbal apology strategy explanation: specific and all other variables was highly significant ($p < .001$). The 95% confidence intervals for the differences in mean value frequencies between explanation: specific and the other variables were: apology: sorry [0.02, 0.13], apology: excuse me [0.04, 0.15], apology: forgive [0.04, 0.15], apology: apologize [0.04, 0.15], explanation: nonspecific [0.03, 0.14], responsibility: implicit [0.04, 0.15], responsibility: lack of intent [0.04, 0.15], responsibility: self-deficiency [0.04, 0.15], responsibility: self-blame [0.04, 0.15], repair: specified [0.03, 0.14], repair: unspecified [0.02, 0.13], promise of forbearance [0.04, 0.15], and apology: other [0.04, 0.15]. The differences in frequencies between all other combinations of verbal apology strategy variables were nonsignificant.

Verbal apology modifiers consisted of verbal intensifiers, minimizing or denying responsibility, emotionals, minimizing offenses, comments about self, others, or the situation, and “other” modifications, separated into 18 subtypes (See Table 6).

Table 6

Verbal Apology Modifiers

Item Subcategory	Subcategory Item Descriptions	Number of Each Code Across All Conflicts (% out of 105 conflicts) 1	2	3 or more	Total Frequency Across All Conflicts	Total Subcategory Frequency
Intensifier	Really	0 (0.00)	1 (0.95)	0 (0.00)	2	
	Very	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Sorry	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Please	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Terribly	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Awful	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Truly	0 (0.00)	0 (0.00)	0 (0.00)	0	2 Intensifiers
Minimizing	Minimizing Offense - Ex. It's not a big deal	1 (0.95)	0 (0.00)	0 (0.00)	1	
	Minimizing Responsibility - Ex. The teacher said I could…	1 (0.95)	0 (0.00)	0 (0.00)	1	2 Minimizing
Denial of Responsibility	Blaming Hearer	0 (0.00)	0 (0.00)	0 (0.00)	0	

		Number of Each Code Across All Conflicts (% out of 105 conflicts)			Total Frequency Across All Conflicts	Total Subcategory Frequency
	Denial of Fault	3 (2.86)	0 (0.00)	0 (0.00)	3	3 Denial
Emotionals	Interjection	1 (0.95)	0 (0.00)	0 (0.00)	1	
	Invocation	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Cursing	0 (0.00)	0 (0.00)	0 (0.00)	0	1 Emotional
Comments	About Self	2 (1.9)	0 (0.00)	0 (0.00)	2	
	About Others	1 (0.95)	0 (0.00)	0 (0.00)	1	
	About Situation	1 (0.95)	0 (0.00)	0 (0.00)	1	4 Comments
Modifications (Other)	Other Modifications	0 (0.00)	0 (0.00)	0 (0.00)	0	0 Other

Verbal apology modifiers were used in 10 out of the 105 conflicts (10%). There were 12 modifiers used in total across the 10 conflicts. Cohen's *f* was used to calculate minimum sample sizes needed to achieve 80% power and an ES size of 0.2 at 95% significance for verbal apology items. The required minimum sample size needed was $N = 522$ (29 per item) and the actual sample size was $N = 1890$ (105 per item) which satisfied the minimum sample size requirements.

Due to low overall counts and little variance between sub-categories, verbal apology modifiers were not tested for statistical differences between the mean frequencies of sub-categories, only individual variables. A one-way ANOVA for verbal apology modifiers revealed that the differences between mean frequencies of all variables were nonsignificant ($F(17, 1872) = [1.065]$, $p = .384$).

Verbal apology elaboration strategies were categorized into three levels (See Table 7).

Table 7

Verbal Apology Elaboration

		Number of Each Code Across All Conflicts (% out of 105 conflicts)		
Item Subcategory	Subcategory Item Descriptions	1	2	3 or more
Verbal Apology Elaboration	Apology Word and First-Person Pronoun	1 (0.95)	0 (0.00)	0 (0.00)
	Apology Word and Labeled the Transgression	1 (0.95)	0 (0.00)	0 (0.00)
	Apology Word and First-Person Pronoun and Labeled the Transgression	0 (0.00)	0 (0.00)	0 (0).00

There was one instance of verbal apology elaboration with a personal pronoun ($n = 1$, “I’m sorry”) and one instance of an apology word with a label for the transgression ($n = 1$, “sorry…was trying to get the sled off…”). Verbal apology elaborations occurred in a total of 2% ($n = 2$) of the 105 conflicts. Due to only two data points for verbal apology elaboration events, no tests for statistical significance were run.

Nonverbal Apology Strategies

Out of 105 conflicts, 77% (n = 81) contained nonverbal apology strategies. There were six nonverbal code categories for nonverbal apologies. Proximity, haptics, gestures, facial cues, gaze, and vocalics were subdivided into 23 nonverbal apology items and coded based on transgressor behavior (See Table 8).

Table 8

Nonverbal Apology Strategies

		Number of Each Code Across All Conflicts (% out of 105 conflicts)			Total Frequency Across All Conflicts	Total Subcategory Frequency
Item Subcategory	Subcategory Item Descriptions	1	2	3 or more		
Facial Cues	Blushing	3 (2.86)	0 (0.00)	0 (0.00)	3	
	Frowning	3 (2.86)	1 (0.95)	2 (1.90)	12	
	Controlled Smile	3 (2.86)	0 (0.00)	0 (0.00)	3	
	Furrowed Brow	3 (2.86)	1 (0.95)	0 (0.00)	5	
	Eyes Well Up	0 (0.00)	0 (0.00)	0 (0.00)	0	23 Facial Cues
Gaze	Eyes Look Away	12 (11.43)	8 (7.62)	14 (13.33)	96	
	Eyes Look Down	16 (15.24)	9 (8.57)	27 (25.71)	160	

		Number of Each Code Across All Conflicts (% out of 105 conflicts)			Total Frequency Across All Conflicts	Total Subcategory Frequency
	Eyes Try to Meet Victim's Gaze	5 (4.76)	1 (0.95)	1 (0.95)	12	
	Eyes Holds Victim's Gaze	1 (0.95)	0 (0.00)	0 (0.00)	1	269 Gaze
Gesture	Head Tilts Toward Victim	4 (3.81)	1 (0.95)	1 (0.95)	20	
	Fidgeting	3 (2.86)	0 (0.00)	6 (5.71)	39	
	Touches Neck	1 (0.95)	0 (0.00)	0 (0.00)	1	
	Stiffens Body	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Head Turns Away	28 (26.67)	14 (13.33)	8 (7.61)	100	
	Head Shifts Down	23 (21.9)	18 (17.14)	25 (23.81)	182	342 Gestures
Haptics/Touch	Caring Touch	0 (0.00)	1 (0.95)	0 (0.00)	2	
	Hug	1 (0.95)	0 (0.00)	0 (0.00)	1	3 Haptics
Proximity	Leans Toward Victim	13 (12.38)	3 (2.86)	0 (0.00)	20	
	Moves Closer to Victim	24 (22.86)	8 (7.62)	5 (4.76)	58	78 Proxemics
Vocalics	Tension (High pitch, nerves, concern)	9 (8.57)	9 (8.57)	12 (11.43)	86	

		Number of Each Code Across All Conflicts (% out of 105 conflicts)			Total Frequency Across All Conflicts	Total Subcategory Frequency
	Remorse (Low pitch, quiet or pitch drops)	9 (8.57)	1 (0.95)	6 (5.71)	41	
	Sarcasm	0 (0.00)	0 (0.00)	0 (0.00)	0	
	Crying	1 (0.95)	0 (0.00)	0 (0.00)	1	128 Vocalics

Cohen's *f* was used to calculate minimum sample sizes needed to achieve 80% power and an ES of 0.2 at 95% significance for each nonverbal apology strategy item and for the nonverbal sub-category comparisons. The required sample size for the individual item comparisons was N = 522 (29 per item), and the actual sample size was N = 2415 (105 per item). The required sample size for the sub-categories was N = 330 (55 per item), and the actual sample size was N = 2415 (210 was the smallest item group). Both sample sets satisfied the required minimum sample size requirements.

A one-way ANOVA for the six nonverbal sub-categories, proxemics (N = 210, M = 0.37, SD = 0.754), haptics (N = 210, M = 0.01, SD = 0.154), gestures (N = 630, M = 0.54, SD = 1.537), facial cues (N = 525, M = 0.04, SD = 0.290), gaze (N = 420, M = 0.64, SD = 1.638), and vocalics (N = 420, M = 0.30, SD = 1.184), revealed that there was a statistically significant difference in mean frequencies between at least two groups (F(5, 2409) = [18.992], p = <.001). A post hoc Tukey test for multiple comparisons was used to find significant differences between sub-category groups, the mean value of frequencies was significantly different between proximity and haptics (p = .028, 95% CI = [0.02, 0.68]), between proximity and facial cues (p = .011, 95% CI = [0.05, 0.60]), between haptics and gestures (p < .001, 95% CI = [-0.80, -0.26]), haptics and gaze (p < .001, 95% CI = [-0.91, -0.34]), between haptics and vocalics (p = .043, 95% CI = [-0.58, -0.01]), between facial cues and gestures (p < .001, 95% CI = [-0.70, -0.30]), facial cues and gaze (p < .001, 95% CI = [-0.82, -0.38]), facial cues and vocalics (p = .010, 95% CI = [-0.48, -0.04]), gaze and vocalics (p < .001, 95% CI = [0.10, 0.57]), and vocalics and gestures (p = .018, 95% CI = [-0.45, -0.03]). There were no significant differences in frequencies between the remaining sub-category combinations (See Appendix F).

Due to the number of nonverbal strategy items the descriptive statistics for each item type are provided in Table 9.

Table 9

Descriptive Statistics of Nonverbal Apology Strategies

Nonverbal Apology Strategy Item		Mean	*N*	Std. Deviation
Proximity	Leans Toward Victim	.18	105	.455
	Moves Closer to Victim	.55	105	.930
Haptics/Touch	Caring Touch	.02	105	.195
	Hug	.01	105	.098
Gesture	Head Tilts Toward Victim	.37	105	1.476
	Fidgeting	.01	105	.098

Nonverbal Apology Strategy Item		Mean	N	Std. Deviation
	Touches Neck	.00	105	.000
	Stiffens Body	.95	105	1.583
	Head Turns Away	1.73	105	2.309
	Head Shifts Down	.19	105	1.387
Facial Cues	Blushing	.03	105	.167
	Frowning	.11	105	.543
	Controlled Smile	.03	105	.167
	Furrowed Brow	.05	105	.255
	Eyes Well Up	.00	105	.000
Gaze	Eyes Look Away	.91	105	1.819
	Eyes Look Down	1.52	105	2.374
	Eyes Try to Meet Victim's Gaze	.11	105	.560
	Eyes Holds Victim’s Gaze	.01	105	.098
Vocalics	Tension (High pitch, nerves, concern)	.82	105	1.736
	Remorse (Low pitch, quiet or pitch drops)	.39	105	1.471
	Sarcasm	.00	105	.000

Nonverbal Apology Strategy Item	Mean	*N*	Std. Deviation
Crying	.01	105	.098
Total	.35	2415	1.204

A post hoc Tukey test for multiple comparisons was used to find significant differences between each of the 23 nonverbal apology strategy variables. The Tukey test revealed 91 statistically significant differences between the mean value of frequencies between nonverbal apology sub-strategy items; therefore, the differences in mean value frequencies for the nonverbal apology strategy combinations are listed in Appendix F. The frame item totaling the nonverbal apology strategies coding column for each conflict was used in statistical analysis for H1, H2.

Intention Behind Conflict

Based on the coder's evaluation of the victim's behaviors and their observations of the initial transgression, coders were asked to code whether they thought the victim's behavior indicated that they thought the transgression was intentional or unintentional (*Victim's Perspective*). In 85% (n = 89) of the conflicts, coders indicated that victim behavior suggested they believed the initial transgression to be intentional and in 6% (n = 6) of the conflicts coders indicated that victim behavior suggested that they believed the initial transgression to be unintentional. In 10% (n = 10) of conflicts, coders could not determine whether behavior indicated intentional or unintentional belief. A second item, *Victim's Experience*, was coded based on whether the victim appeared to see or directly experience the initial transgression. In 92% (n = 97) of the conflicts, coders indicated that it appeared the victim did see or directly experience the initial transgression, and in 2% (*n* = 2) coders indicated that it appeared the victim did not see or directly experience the initial transgression. In 6% (*n* = 6) of the conflicts, coders could not determine the victim's experience with the initial transgression.

Forgiveness Markers

There were five types of verbal forgiveness markers and three types of nonverbal forgiveness markers on the IMPACT Apology Coding Frame. All forgiveness markers were coded based on victim behaviors. There were 105 instances of forgiveness markers and at least one measure of forgiveness occurred in 77% (*n* = 81) of all conflicts (See Table 10).

Table 10

Forgiveness Markers

		Number of Each Code Across All Conflicts (% out of 105 conflicts)			Total Frequency Across All Conflicts	Total Subcategory Frequency
Item Subcategory	Subcategory Item Descriptions	1	2	3 or more		
Verbal Forgiveness	Verbal Statement of Forgiveness: Ex. Forgive you	0 (0.00)	0 (0.00)	0 (0.00)	0	
Verbal Reassurance	Reassurance of Situation or Transgression - Ex. That's okay	2 (1.90)	0 (0.00)	0 (0.00)	2	

		Number of Each Code Across All Conflicts (% out of 105 conflicts)			Total Frequency Across All Conflicts	Total Subcategory Frequency
Item Subcategory	Subcategory Item Descriptions	1	2	3 or more		
	Reassurance of Personal State - Ex. I'm okay	1 (0.95)	0 (0.00)	0 (0.00)	1	
Verbal Acknowledge-ment	Acknowledge-ment of Accidental Intention	1 (0.95)	0 (0.00)	0 (0.00)	1	
Verbal Offers of Forgiveness	Offers of Forgiveness: Inclusion	4 (3.81)	1 (0.95)	0 (0.00)	6	10 Verbal Forgiveness
Nonverbal Forgiveness	Sharing Resources	12 (11.43)	0 (0.00)	0 (0.00)	12	
	Physical Sign of Forgiveness - Ex. Hug	3 (2.86)	0 (0.00)	0 (0.00)	3	
	Playing Together	81 (77.14)	0 (0.00)	0 (0.00)	81	96 Nonverbal Forgiveness

Verbal forgiveness markers were not common, nor were most nonverbal markers of forgiveness other than playing together. Cohen's *f* was used to calculate minimum sample sizes needed to achieve 80% power and an ES of 0.2 at 95% significance for verbal apology items. The required minimum sample size needed was $N = 522$ (29 per item) and the actual sample size was $N = 1890$ (105 per item) which satisfied the minimum sample size requirements.

A one-way ANOVA for forgiveness markers revealed that there was a statistically significant difference in mean frequencies between at least two groups ($F(7,832) = [138.757]$, $p = <.001$). A post hoc Tukey test for multiple comparisons was used to find significant differences between variables, the mean value of frequencies was significantly different between playing together and all other variables at $p < .001$. Nonverbal forgiveness, sharing resources, also had a positive significant difference with verbal forgiveness ($p = .008$, 95% CI = [0.02, 0.21]), verbal reassurance of personal state ($p = .021$, 95% CI = [0.01, 0.20]), and verbal acknowledgement of accidental intention or lack of wrongdoing ($p = .021$, 95% CI = [0.01, 0.20]). There were no significant differences in frequencies between any other variables.

Adult and Peer Intervention

At least one adult intervened in 70% of the conflicts ($n = 73$). In 50% ($n = 53$) of the conflicts, there was significant adult intervention. In 10% ($n = 10$) of the conflicts, there was moderate adult intervention. In 10% ($n = 10$) of the conflicts, there was minimal adult intervention. In 30% ($n = 31$) of the conflicts, there was no adult intervention. There was one conflict where the level of intervention could not be determined.

The degree of peer intervention was coded based on whether a peer intervened and whether their words or actions helped resolve the conflict. In 96% ($n = 101$) of the conflicts, there was no peer intervention. Peers intervened in 4% ($n = 4$) of the 105 conflicts. In three of the four conflicts where peer interventions occurred, the peer did not intervene in a way that resolved the conflict. There was one instance where the actions or words of a peer did resolve the conflict.

Child Participant Peer Likeability Sorting Task

As mentioned in the methods section, there were 49 conflicts in which the victim in a conflict had completed a valid sort both before and after the conflict. Of these 49 conflicts, 11 conflicts were the second (or third) conflict occurring between the same victim and transgressor on the same day, the repeat Sort 1 (S1) and Sort 2 (S2) data for these conflicts was removed, leaving 38 data sets available for analysis.

Within the AM class data, there were 25 sets of valid sorting data completed by child participant victims. In the AM data all transgressor sort averages were calculated based on a scale of 1-18 due to the number of children in the class, with a high preference to be played with documented as 1 (chosen first) to 18 (not chosen at all). Transgressors in the 25 sets of valid data for the AM class had a mean sort average of 12.4 (SD = 7.1), with a range of 1-18. Overall, there was little variability in the sort changes that occurred for transgressors. Out of 25 sets of valid data, the difference between S1 and S2 choice placement did not change for 19 of the transgressors. Four transgressors were ranked higher (closer to the victim's first choice) in S2 than in S1 (rank changes were -5, -3, -2, and -1), and only two transgressors were ranked lower (chosen later in the sorting task) in S2 than S1 (rank changes were 6 and 14).

Within the PM class data, there were 13 sets of valid sorting data completed by child participant victims. In the PM data all transgressor sort averages were calculated based on a range of 1-10 due to the number of children in the class, with a high preference to be played with documented as 1 (chosen first) to 10 (not chosen at all). Transgressors in the 13 sets of valid data for the PM class had a mean sort average of 7.4 (*SD* = 3.1), with a range of 2-10. There was also little variability in the sort changes that occurred for transgressors in the PM class. Out of 13 sets of valid data, the difference between S1 and S2 choice placement did not change for 8 of the transgressors. Three transgressors were ranked higher (closer to the victim's first choice) in S2 than in S1 (rank changes were -8, -4, and -2), and only one transgressor was ranked lower (chosen later in the sorting task) in S2 than S1 (rank change was 1).

Normalizing these AM and PM sort ranges by converting them into percentages shows that transgressors in the AM class and PM class had similar sort averages at 69% (AM) and 74% (PM).

The transgressors' individual sort averages for both AM and PM class data were used as a peer likability outcome for hypothesis 3.

Research Questions and Hypothesis Testing for Aim 1

The first research question asked what types of verbal and nonverbal apologetic communication behaviors preschool children use in naturally occurring peer conflicts. Tables 4-7 outline these results. The most common type of verbal apology strategy was a specific explanation (occurring 10 out of the 16 times that verbal apology strategies were used); all other types of verbal apology strategies occurred two or fewer times. Verbal apology modifiers occurred 12 times and verbal apology elaborations occurred twice. The most common types of nonverbal apology strategies used were gestures related to guilt and shame and gaze behaviors relating to guilt and shame. These four nonverbal strategy types were used significantly more than all other strategies, with *gestures: head shifts down* and *gaze: eye look down* being used more than any other variables based on statistical significance. *Gestures: head turns away* was used more than 17 other variables (with two additional negative significant associations with the two strategies above) while gaze: eyes look away was used more than 14 other items (with negative associations with the two strategies above). The most infrequent nonverbal cues were haptic cues, such as hugging or nice touches, which only occurred three times and only had negative statistical associations with other variables.

The second research question asked what the ratio of verbal to nonverbal apologetic communication behaviors used by preschool children is in naturally occurring peer conflicts. In this sample, the ratio of observed verbal to nonverbal apologetic communication behavior frequencies was 16:823, or approximately 1:51.

The first hypothesis predicted that preschool-aged children in this sample would use more nonverbal apologetic communication strategies than verbal apologetic communication strategies following peer conflict. A t-test revealed a significant difference between verbal (M = 0.01, SD = 0.116) and nonverbal (M = 0.35, SD = 1.204) apology use, $t(3883) = -10.727$, $p < .001$. The effect size, measured by Cohen's d, was d = 0.952, which indicates a large effect. In this sample, nonverbal apology use occurrences were statistically significantly higher than verbal apology use occurrences. This hypothesis was confirmed.

The third research question asked whether the amount of time it takes for children to return to play was related to occurrences of apologetic communication behavior.

Whether child participants returned to play following peer conflict was tested against whether they used verbal or nonverbal apologetic communication strategies. A Pearson's Chi-squared test with Yates' continuity correction was not a good fit due to small expected counts; therefore, Fisher's test was used to determine whether the return to play was independent of verbal apology use (p = .417) and nonverbal apology use (p = .540). Using a significant p value level of .05, no tests were significant. This research question was more specifically answered in the following test for hypothesis two. The amount of time it took children to return to play was not related to occurrences of apologetic communication behavior.

Hypothesis two predicted that the amount of time before returning to play following peer conflict would be negatively correlated with occurrences of positive apologetic communication acts. A subset of the data was created to include only conflicts in which children returned to play (n = 86 out of 105 conflicts). Timestamps indicating the amount of time in seconds that it took child participants to return to play following peer conflict were compared to apologetic communication use using code totals for each conflict. Pearson's correlation was calculated and resulted in no significant associations. Return to play in seconds with nonverbal apology use code totals showed no statistically significant linear relationship (r = .009, p = .936). Return to play in seconds with verbal apology use code totals showed no statistically significant linear relationship (r = -.063, p = .562). The required sample size for a power of .7 is 153. The required sample for a power of .8 is 193, and the required sample for a power of .9 is 258. As a result, it is reasonable to argue that the non-significant findings may be a result of the underpower design due to the lack of sufficient data.

It should be noted that in 49% (*n* = 51) of the total 105 found conflicts, or 60% of the 85 conflicts where children returned to play, play did not stop for more than a very brief pause. In 67% (*n* = 70) of the total 105 found conflicts, or 82% of the 85 conflicts where children returned to play, children returned to play within 60 seconds of the conflict ending. Possible concerns with low count levels and little variance in the outcome measure should be considered. Additionally, a logistic regression model with covariates including the presence of verbal apology use, the presence of nonverbal apology use, age, sex, and classroom belonging showed no significant interaction effects with whether children returned to play.

The fourth research question asked if using apologetic communication following peer conflict impacts peer likability. The following tests for hypothesis three indicate that using nonverbal apologetic communication following peer conflict does not impact peer likeability. However, using verbal apologetic strategies does impact peer likeability.

The third hypothesis indicated that children who use apologetic communication following peer conflict will be more likely to be viewed positively by peers. This was measured by frequency observations of the transgressor's apologetic communication use and the victim's choices on the Peer Likeability Sorting Task. In the sorting game, I asked child participants to choose photos of their peers based on "who they like playing with the most" at the beginning and end of each observation day. Totals of the transgressors' verbal and nonverbal apology strategy columns were compared to the mean averages between victim's S1 and S2 sort choices for their transgressor. Pearson's product-moment correlation was used to test verbal, nonverbal, and verbal/nonverbal combined apology use with peer likeability sorting averages. Verbal apology use and peer likeability sorting averages were negatively correlated, $r(103) = -0.32$, $p = .047$, which met the set significance level of 0.05. This means that there is a statistically significant association between verbal apology use and being ranked low numerically (which is a sign of being chosen closer to first and higher average peer likeability); however, these results should be interpreted with caution due to the small count size of occurring verbal apologies. The p values for nonverbal apology use and peer likeability (.897) and combined apology use and peer likeability (.958) were nonsignificant. Regression modeling (lm) showed no significant relationships between peer likeability mean sort averages and sex, age, or classroom. The third hypothesis was supported for verbal apology use, but not nonverbal or combined apology use.

It should be noted that the rate of nonverbal apology strategy use was identical for the subset of transgressor nonverbal apology use in the Peer Likeability Sorting data as it was in the full population sample (78%). However, transgressors that were included in the peer likeability outcome measure had different rates of verbal apology use compared to the population sample. In the full population sample, there were 12 conflicts in which transgressors used verbal apology strategies, eight of those conflicts were included in the subset of conflicts where there happened to be valid victim Peer Likeability Sorting Data for S1 and S2 for that conflict. While the difference in percentage is not very high (21%, $n = 8$ of 38 in the subset sample, 11%, $n = 12$ out of 105 in the full population sample) two-thirds of the conflicts containing verbal apology strategies were present in the subset of less than half of the data (49 of 105 conflicts). This indicates that the results from the analysis of the verbal apology strategies used by transgressors in this subset may not be representative of the population sample.

In addition to the inferential statistical tests completed for the quantitative measures, associations were explored ad hoc between forgiveness markers and verbal and nonverbal apology use. Specifically, an additional exploratory hypothesis was added to test whether apology use was positively related to forgiveness markers as an additional outcome measure of relationship repair. Fisher's test was used (due to small count size) to compare forgiveness as a binary measure to verbal apology use. No significant association was found (p = .289). Pearson's Chi-squared test was the best fit for comparing forgiveness as a binary measure to nonverbal apology use. No significant association was found (p = .265). This hypothesis is not supported.

Also, an exploratory factor analysis was attempted to assess whether there were significant associations between seven variables (return to play time in seconds, total conflict types, verbal apology strategies, modifiers, or elaboration, nonverbal strategies, or forgiveness markers) based on no a priori assumptions about variable relationships. The Eigenvalue was rated as miserable, which was expected due to a Kaiser-Meyer-Olkin test Overall MSA value of 0.51, which showed that the data is not suitable for factor analysis. Although there was not enough power for reliable EFA, the EFA was run to see if there were any indicators that specific pairs of variables should be examined more closely. No complex interrelationships were discovered between any of the variables.

Qualitative and Mixed Method Results Relating to Study Aim 2

For the second study aim, research questions were exploratory and focused on how relationships and context influence preschool children's apologetic behavior. Research question five asked how children's understanding of apologies compares to how they use apologies. Research questions six and seven explored parents' and teachers' attitudes and expectations regarding apologies and examined how often, and to what degree, teachers intervene in peer conflict in this population. Research question eight questioned how child participant apology behavior related to parent and teacher expectations. Finally, the fourth, and last, hypothesis of the study indicated that children's apologetic communication behaviors will be more influenced by the expectations of their teachers in the classroom context than the expectations of their parents. This section begins with a case study presenting a narrative description of peer conflict interaction, followed by findings from the child participant interviews and a thematic analysis of parent and staff surveys. Finally, results for the research questions and final hypothesis related to study aim 2 are reported.

Peer Conflict Interaction Case Study

Over 105 peer conflicts, a wide range of nonverbal apology types were used, but only two instances of verbal utterance of the word "sorry" occurred. In this subsection, I present a case study which highlights one of these two instances and provides qualitative support for the potential impact that the desire to maintain friendships may have had on how quickly children return to play. This example also provides a narrative description that highlights the use of verbal apology strategies combined with complementing nonverbal remorse displays.

Before describing the conflict, there are a few things to note about the conflict itself. Most conflicts were relatively short and were resolved in under one minute. In this case, the conflict continues a bit longer (3 minutes and 45 seconds) which is influenced in part by a high level of teacher intervention. This example was rated at Adult Intervention level 3, in which the teacher plays a pivotal role in helping the children resolve the conflict. This level of intervention and guidance is appropriate for the early years of scaffolding socio-emotional skill building.

In this conflict, which I will call "The Best Friend" conflict, Peer A, who we will call Cole, (age 5 years) and Peer B, who we will call Cooper, (age 4 years and 4 months), both males, are playing cooperatively together outside in the snow, talking about items being pretend vegetables, when Cole, the initial transgressor, states that they play their game differently by changing the items from vegetables to candy. Cooper gets very upset and a verbal dispute over how they are playing in the space breaks out where they are yelling "yes" and "no" back and forth. Cole yells, "They're candy!" While Cooper screams, "No! They're vegetables" and "We aren't going to play your way!" The teacher intervenes and tries to help the children work through their conflict by offering specific advice like "Sometimes best friends fight and it's okay to move on to different ideas/friends." Cooper screams and repeatedly says to Cole, "We're not best friends!" and "Go away!" They follow each other around the playground with the teacher continuing to try to help until Cole runs off, which is the end of the conflict.

Cooper continues to cry, and acts upset. Just over 4 minutes later, they meet up again to line up and go inside. Cole displays a wide range of nonverbal apology strategies, including moving closer and gently putting their hand on Cooper’s back. They display nonverbal apology cues that indicate shame and guilt such as fidgeting, shuffling their feet, shifting their head downward as the victim is talking, and lowering their pitch when speaking to Cooper once they meet up again. Cole also verbally apologizes to Cooper, saying, “I’m sorry,” and offers a specific verbal apology in the form of a repair by saying, “We need a new game.” Cooper offers a verbal acknowledgement of the apology by saying “Okay” and says, “Let’s move on to a different game” and “We’re still best friends, right?” Although the victim chose not to complete the sorting game on this day, this description illustrates that preschool children are strongly impacted by limitations on their emotion regulation but that they can utilize fairly sophisticated apology strategies once they have had the opportunity to regulate their emotions.

Child Participant Interviews

The child participant interview questions were primarily cued invitations and focused on children’s understanding of apologies, what they have been taught about apologies, as well as their behaviors as a transgressor and feelings as a victim. The child participants knew me from participating in the sorting tasks and seemed comfortable about sharing their thoughts and feelings in the interviews. There was a 100% participation rate in the AM class for those who had permission to complete an interview (as noted earlier, one parent signed written consent but verbally requested that their child not participate in activities, which was honored). Due to illness, absence, or request, there were only five (out of nine) eligible children available to complete interviews from the

PM class during the interview week. All five children chose to complete an interview with me. A total of 22 child participants completed interviews. The following descriptions of interview responses have been categorized based on the following topics: (a) what is an apology, (b) what does an apology mean, (c) communicating after a transgression, (d) actions by a transgressor, (e) socialization of apologetic communication, and (f) repairs after a transgression. As in the example above, all names used to represent child participant responses have been replaced with pseudonyms beginning with the letter "C" to represent "child" participants.

Interview Responses

(a) What is an Apology?

Questions one and two asked about the child participants' understanding of apologies. Question one asked, "What do you think an apology is?" If they were unsure, possible prompts and explanations offered were, "It's okay if you don't know! What is your best guess?" or "An apology is when we let someone else know that we feel badly about something that we did or said." Half of the child participants (n = 11) answered with some form of "I don't know," but three of those children followed up their response with something relevant like "um, when you say sorry?" (Chase, age 5), "it's I can help" (Caleb, age 3), or "Apologies, apology and and it's playing with [name of a child]" (Clark, age 4). Eight participant responses included some form of "sorry" or "apology," some of which were elaborate, such as, "An apology is when you say sorry to someone for ruining their day" (Carrie, age 5), and "like saying sorry to something that you've done to make someone cry" (Christine, age 5), or "sorry and are you okay?" (Cassie, age

4). Some responses were contextual, like “it’s about not pushing maybe?” (Cole, age 5) and some were literal, like “It’s talking” (Callie, age 3). One answer was incoherent, and one answer was only partially relevant “I don’t wanna guess. I like popsicles” (Cal, age 4). A closer analysis suggests that 14 of the 22 children (64%) had at least some understanding and ability to define an apology.

(b) What Does an Apology Mean?

Question two was “What do you think an apology means?” answers were similar despite having defined an apology for those who said they did not know what it meant. Two children who had previously answered that they did not know or did not fully answer added words related to saying sorry or apologizing. Three children suggested that it had something to do with feelings like “being angry” (Cate, age 3) or “you’re sad” (Cruz, age 3). Cassie, age 4, replied, “it means…when someone says something mean they try to unmake you sad so they can play again.” Also, Clara, age 4, said, “It means that you’re really sorry for, for doing the thing that you really wanted to do and you and you destroyed it and you say ‘sorry’ and they say ‘it’s okay.’” Overall, 64% of the children (*n* = 14) could verbalize what they thought apologies were with an answer somewhat resembling a verbal apology or an effort to make amends.

(c) Communicating After a Transgression

Next, if their response to question two included the word sorry, or if they did not really know how to answer, I asked children question three, “Do you think that there are other ways to let someone know that you feel bad or that you are sorry?” If their response to question two did not include the word sorry I asked them question four, “Do you think that there are other ways to let someone know that [blank filled in with their definition of apology if it did not include the word sorry]?" Fourteen children answered "yes," two of whom gave relevant examples such as, "I try to help him up and say 'are you okay?' and then he gets up and we have fun again" (Cassie, age 4) or "Maybe when we say I love you" (Carrie, age 5). Of the remaining eight child participants, three children responded "no," one child said "sometimes," two children said a form of "I do not know," and three made irrelevant comments like "I just be silly" (Cooper, age 5). More than half of the children (*n* = 13, 59%) felt that there were other ways to let someone know they felt bad or sorry.

(d) Actions by a Transgressor

Question five asked children about what they do as transgressors. It was "What do you do when you hurt someone, their things, or their feelings?" Eleven children responded that they say that they are sorry or apologize. Some of the children also gave examples of elaborative apologies where they labeled a transgression (i.e. Clara, age 4, said, "Sorry for hitting you, sorry for knocking your um stuff into the sand") or added a declaration of positive feelings (i.e. Carrie, age 5, said, "Hmm, I'm say I'm sorry for that. I love you still…I hope you can have a play date…") or offers to make amends (i.e. Clint, age 5, said, "I'm sorry and what can I do for you. Or you could say what can I do to make it right."). Other children mentioned making someone else happy, not hurting someone, feeling sad, or crying. Carol, age 5, verbalized an avoidance response, "I just walk off, I don't say anything." Overall, these answers displayed a wide range of responses to a cued question that did not include a specific situation or event. Just over half of the children (*n*

= 12, 55%) could come up with a response including an apology, an attempt at fixing the situation or making someone else feel better. Another three children provided alternative reasonable responses based on feeling states or avoidance of the situation.

(e) Socialization of Apologetic Communication

Question number five asked how they learned about apologies in a two-part format which asked, "Who taught you about apologies?" and "What did they teach you?" Seven children said that their mother, or a combination of their mother and other caregivers, taught them about apologies. Two children said that their teachers taught them, two children said that their friends taught them, and two children said that I taught them what apologies meant. Five children said that nobody taught them, two children did not know, and two children had responses that were not relevant or were unintelligible (but may have been spoken in Mandarin). Most of their responses to what they were taught about apologies were vague or did not make much sense. Three children generally said that they were taught about apologies without further detail. Two children mentioned specific things that they were taught, like to be nice to their sibling (n = 1), or that "hurting is not okay" (Cooper, age 5; n = 1). Quite a few answers were not relevant. One child said they were taught that they would be a superhero when they grew up, and one child said "They teach me mostly everything, but they are old, so they know a lot of things that I'm young so I don't know a lot of things. But I do know that I am small, and I can fit under tables." (Christine, age 5). Overall, there was very little relevant content beyond the single response of being nice or not hurting others.

(f) Repairs After a Transgression

The final question was designed to ask what might help child participants feel better as victims in a conflict. It read, “When someone hurts you, hurts something you are working on, or hurts your feelings, what kinds of things help make you feel better?” There were a few commonalities among these responses. The highest frequency of response had to do with hugging or cuddling or being comforted by their stuffed animal “stuffies” (*n* = 9) including three crossover responses where they felt better by “hugging their stuffies” and one multi-element response including Caleb’s (age 3) response mentioning, “Just having a little alone time, playing with my friends, having a hug and a kiss.” Other responses included getting to buy something or having presents (*n* = 2), jokes or laughing (*n* = 2), time with their mom or dad (*n* = 2), feeling better themselves (n = 1). Within these responses, there were also mentions of having alone time, resting, and lying down with the lights off. There were also three responses that were unclear or indicated that they did not know something that would help them feel better. Two children responded with something related to them apologizing, but one of them stated, “telling them that they’re mad and apologizing” (Callie, age 3); therefore, it was unclear if this respondent understood the question and wanted someone else to apologize or if they were talking about another child’s feelings and that they should apologize. Finally, one child gave a practical answer for what would make them feel better, which was, “Well…if they don’t do it” (Cole, age 5). Overall, the most frequent responses included seeking positive physical touch as comfort, quality time with parents or stuffed animals, or time alone resting.

Parent and Staff Surveys

I created two surveys to help answer the research questions that focused on parent and staff attitudes and expectations surrounding children's apologies (RQ7) and the influence adults might have on children's apologetic communication behavior (RQ8). This section uses a grounded approach to examine parent and staff attitudes and expectations as foundational work related to research question seven: "Are parents' and teachers' attitudes and expectations for their children's or students' apologetic behaviors similar or different?" The open-ended parent and staff survey responses were closely analyzed using a thematic analysis approach (Braun & Clark, 2006). Given that only the surveys completed by parents (N = 9) and staff (N = 6) of child participants were included in the analysis, responses from the staff surveys will hereto be referred to as teacher responses.

Using a grounded approach, I applied open, in vivo, and axial coding processes to determine relevant broader themes present in the survey responses. In the first level of coding, I conducted a comprehensive review of all open-ended question responses submitted by parents and teachers via Qualtrics, summarizing responses based on their relationship to research question seven. In the next level of coding, I imported parent and teacher responses into NVivo. I generated code themes, sentiments, and word maps for verbatim responses from each set of surveys. To increase qualitative rigor, I cross-referenced my original summary notes with in vivo codes (Maher et al., 2018). I reviewed the data for overlapping themes found to be related to research question seven. I found three points of contention related to parent and teacher attitudes and expectations for apologetic communication. Broadly, the themes were related to parents' and teachers' views about their roles in children's conflicts, their attitudes and expectations for apologetic communication, and their expectations for socialization and behavior during social repair and are further discussed in the next portion of this section.

Of note is that the thematic analysis of these surveys also included the analysis of closed-ended question responses, including quantitative descriptions of responses, if relevant to examining similarities or differences in parent and teacher attitudes and expectations for apologies. Additionally, later in this chapter, these survey results are revisited again to complete a mixed method analysis of the relationships between survey data and child participant behaviors for research question eight and hypothesis four.

Finally, pseudonyms used in this section were chosen based on the child participants' relationships to the adult, with all parent names beginning with the letter "P" and all teacher names beginning with the letter "T." Age ranges and disclosed genders were similar for parents, with all but one parent, Paige (age 45+), disclosing their age as between 35 and 44, and all parents except Philip (male) and Parker (non-binary) disclosing their gender as female. Age ranges were more varied for teachers than for parents, with two participants, Tessa and Tori, in the age range of 16 to 24, one participant, Teagan, in the age range of 25 to 34, two participants, Taylor and Talia, in the age range of 35 to 44, and one participant, Treana, aged 45 or over. Out of the six teacher participants, all but one, Teagan (non-binary), disclosed their gender as female. Responses from the lead teachers from each classroom and four student teachers are included in the survey analysis. Lead teachers reported having worked at the CDLS for between 11 years and 16 years and with the child participants for approximately six months at the time of the survey. Student teachers had worked at the CDLS, and with the child participants, for between 2 and 3 months. It should be noted that the CDLS has excellent teacher-to-child ratios and highly trained lead staff who regularly put the needs of the children in the class at the forefront of each interaction.

Thematic Analysis of Survey Responses

As mentioned, themes found in this analysis were broadly related to parents' and teachers' views about their roles in children's conflicts, attitudes and expectations for apologetic communication, and expectations for socialization and behavior during social repair. To closely examine the similarities and differences between these attitudes and expectations for apologetic behaviors, the thematic analysis of survey responses was completed by exploring three areas of contention related to these themes that surfaced from the data collected: (a) instructing vs. guiding as an attitude toward their parental or teacher role, (b) performativity vs. sincerity as an attitude toward apologies and apologetic expectations, and (c) organic socialization vs. structured socialization as an expectation for social skills development. This section will examine each of these three areas using parent and teacher survey responses.

(a) Attitudes Regarding Role: Instructing vs. Guiding

The first area of contention, instructing vs. guiding, is an attitudinal juxtaposition focused on how parents or teachers view their roles in helping children navigate peer conflict. Taking an *instructing* role represents parents or teachers using language that describes themselves as specifically telling or instructing children how to resolve conflict and show remorse. Taking a *guiding* role represents parents or teachers using language that describes themselves as helping or guiding children through the processes of resolving conflict and showing remorse. For parents, there was tension between these two views on roles, with parents sometimes describing themselves as both needing to explain and redirect (instructing) their child through the conflict and needing to facilitate and help (guiding), as evidenced by Parker's response, "[I] try to talk with them together as a facilitator and a helper to explain and redirect their motions and solve the issues together."

Parenting is a heavy responsibility. Positive and supportive interactions with caregivers are directly related to positive child outcomes deemed fundamental to children's well-being as determined by the Committee on Supporting the Parents of Young Children's report for the National Academies of Sciences. The four outcomes are (a) strong physical health and safety, (b) emotional and behavioral competence, (c) social competence, and (d) cognitive competence (Gadsen et al., 2016). For parents, this means that they must fulfill many different roles, often at once. For example, taking these four fundamental outcomes into account while helping preschool-aged children navigate conflict means that parents must simultaneously consider (a) their child's physical safety and mental health, (b) how to help their child regulate their emotions, (c) what social skills and competencies their child needs to use or learn, and (d) whether they are cognitively prepared to understand the dynamics of the situation. Not surprisingly, parents' responses to questions asking them about their role in helping their child repair hurt relationships focused on many different components.

The most common themes related to parental roles during social repair centered around roles as teachers (instructing) and helpers (guiding), and responses often included terms that combined both roles. For example, one parent stated that they saw their role during social repair as “helping to teach [their child] to both follow social norms and to feel bad/try to repair the relationship” (Pam), indicating that they saw themselves as a helper, but also as someone who needed to direct their child in specific social norms and also in how to “feel.” In this instance, Pam is speaking of their role as directly influencing (instructing) their child in regulating emotions (outcome b), social skills and competencies (outcome c), and cognitive ability as it relates to labeling feelings and understanding relational dynamics (outcome d). Simultaneously, Pam uses the term “helping” as a qualifier for how they view their role as an instructor as ‘*helping* to teach.’ This suggests that they view helping and teaching as separate concepts and that they view the process of learning social repair as being influenced by many factors, of which they are one. Overall, parents used many words throughout their responses that indicated an instructing role, such as “assess” (Pearl), “learn” (Philip), “offering a script” (Paola), and “explain and direct” (Parker), and also used a form of the word “help,” “model” or “guide” in seven out of nine responses to questions about role.

An intriguing finding is that teacher responses to questions asking them about how they viewed their role in helping their students navigate social repair were more often focused on being helpers (guiding) than teachers (instructing). In fact, the vast majority (five out of six) of teachers responded by describing their actions/roles during peer conflict as focused on components like listening, waiting, and helping while only stepping in to engage in the conflict if it is necessary for safety or if the children say that they want help solving the problem. Even in these instances, teachers seem focused on giving children agency in resolving conflicts. For example, in response to what they do when children are working through conflicts in the classroom, Tegan mentioned that they focus on “acknowledging student’s feelings and frustration during conflict; thinking of a few solutions to problems with children and finding something that feels comfortable to them; reminding all children that the classroom and toys are for everyone in the room.” In this example, the teacher said they would be the one to think of solutions; however, it is important to note that the focus was on finding a suitable solution from the children’s perspective, not telling or instructing the children to use the solution they thought was best. Also, using the word “reminding,” or, in other entries, phrases such as “I encourage them to come up with ideas” (Treana), suggests a focus on guiding children through the process of repair as opposed to instructing them on the ‘best’ way to solve a conflict or repair a relationship.

Another commonality among teacher survey responses that supported a guiding role view was a focus on listening, waiting, and asking. One teacher specifically stated that they “listen to see if [the children] can reach a solution. I wait to see if I need to assist” (Talia). This suggests restraint and a desire to observe and listen, which is in opposition to seeing their role as telling (instructing) children what should be done. It prioritizes giving children space to figure out what to do while still being available to help or guide them if needed. Additionally, if they decide that guidance may be needed, multiple teachers mentioned beginning by “acknowledging student’s feelings and frustration" (Tegan) or making sure children "are communicating" before offering to help. Taylor's response summed up this approach well; they stated, "I enter into the conversation, sharing what I am observing, naming emotions, and asking if I can help solve the problem."

Finally, the teachers also echoed feelings related to the four National Academies of Sciences outcomes: (a) strong physical health and safety, (b) emotional and behavioral competence, (c) social competence, and (d) cognitive competence (Gadsen et al., 2016). Teachers stated that they "help make sure all children feel safe and heard" (health and safety outcome a; Tessa), they label emotions (Taylor), and "stay close to make sure [the children] are communicating and staying somewhat regulated" (emotional and behavioral competence outcome b, emotion regulation, and social competence outcome c, communication; Treana), and make sure that children are "understanding one another" and generating their own "ideas about how to fix things" (cognitive competence outcome d; Treana). Overall, teachers' views of their role in children's social repair were less focused on knowing and telling children what to do (instructing) and more focused on being available to help if needed (guiding).

In summary, for the dimension instructing vs. guiding, parents and teachers had similar positive attitudes toward guiding children through social repair but differed somewhat in their stances on instructing. Parents offered more responses that spoke of their role in directly telling their children what to do when involved in a conflict with peers than teachers. Teachers offered more responses that spoke of their role as being available to guide children through the process of repair and only helping if needed.

(b) Attitudes and Expectations for Apologies: Performativity vs. Sincerity

The second area of contention, performativity vs. sincerity, centers around whether apologies are viewed as a performative social script that carries little weight or as a sincere show of remorse that is generally conducive to social repair. In the context of these survey responses, apologies are generally understood and defined by parents and teachers as verbal apologetic behavior. Nonverbal apologetic behaviors tracked in the IMPACT Apologetic Coding Frame used for this study would generally be considered by this participant set as referring to "other" ways of expressing remorse. Therefore, in the remainder of this section, the term *apology/ies* will refer to verbal apologetic expression and *other ways of expressing remorse* will refer predominantly to nonverbal apologetic communication strategies. In this thematic analysis, *Performativity* is represented by parent and teacher attitudes toward apologies that describe apologies as a socially performative script. This view considers apologies to be predominantly perfunctory in nature and is generally associated with a negative stance toward requiring apologies. *Sincerity* is represented by parent and teacher language that describes apologies as a sincere representation of remorse. In this view, apologies may also be recognized as enacting a social norm, but that enactment is a representational choice reflecting sincere remorse and a genuine offering of amends. A stance that considers apologies sincere is generally associated with behavioral expectations for apologies following a transgression.

It has been argued that we are in an age of increased apology use and that this overexposure to apologies as an expected norm could be devaluing how sincerely apologies are viewed (Okimoto et al., 2015). While it is yet unclear whether this broader societal shift in how sincerely apologies are viewed is, in fact, occurring, there was a clear division among both parents and teachers between whether they viewed apologies as performative and, therefore, a poor strategy for social repair or sincere and a useful tool for helping repair relationships.

Parents who viewed apologies from a lens of performativity expressed that they felt that apologies were a poor choice for social repair. One parent thought that “Other ways [of apologizing or showing remorse] require more thought and interaction” and that “apologies can be rote and superficial” (Philip). Another parent expressed that they “don’t think apologies at all are the way to handle [social repair]” (Paige).

Some parents additionally expressed that they did not think their child’s apologies could be sincere because they did not think their child could really understand the meaning of a verbal apology yet (Payton; Parker). One parent expressed that they did not think children are intentionally mean at this age and, therefore, could not be expected to feel remorse (Paige).

Of these parents, Paige, Philip, and Parker expressed that they felt that other ways are more effective than a verbal apology at showing remorse. The remaining six parents all selected that they thought apologies and other ways of showing remorse were equally effective. This stance that apologies are equally effective at expressing remorse was supported by comments conceptualizing apologies as sincere, but also best used in combination with other ways of showing remorse. For example, one parent remarked, “A verbal apology CAN be an effective repair if do[ne] in tandem with other ways of showing remorse, such as addressing impact, sharing feelings about what happened, and asking or saying what would complete the repair for the impacted party" (Paola).

Others suggested that effectiveness is dependent on context and that either method may or may not help. Pearl wrote that the effectiveness "seems very situational to child, conflict, etc. Not sure one is better than the other." A comment that was echoed by Paisley, who said, "I think that if both parties agree that a sincere apology has been made, whether verbal or non-verbal, both are equally effective" and Paula, who explained:

> I think it is dependent on the situation. Sometimes a verbal apology is [all] that you can really do, and is better than nothing. Sometimes a verbal apology does nothing and only doing something else will help resolve the problem (at least in the short term). Probably doing both is the best solution in most cases. Both expressing the feeling and acting on it.

Paula, Paisley, and Pearl, all seem to view verbal apologies as effective or potentially effective ways to show remorse sincerely, but they also acknowledge that a verbal apology is not the only path to social repair.

Unlike their attitudes toward apologies, more parents had high expectations of apology use than not, suggesting with their actions that they believe apologies to be sincere and effective ways to show remorse and repair relationships. In this sample, six out of nine parents disclosed that they have asked (or told) their child to apologize. In five out of the six responses parents reported having asked their child to apologize, using phrases such as "would you like to tell (your brother) that you're sorry?" (Pearl), or, "Can you say sorry, that wasn't acting kind/nice, please say sorry, they look sad, should you say sorry?" (Philip). Others prompt apologies or tell their child that an apology is needed. For example, they might say, "What should you say if you hurt someone? or That wasn't nice, you need to apologize to your brother" (Paula). Some parents recognize that prompting an apology may be better than demanding one. Pam wrote: "My reflex is often to say, "Tell them you're sorry!," but if I keep my cool I will try to help develop some empathy, like, "He looks really upset that you took that. What do you think you could do to make him feel better?"

Of the three parents who responded that they have not asked their child to apologize, one parent responded that they had not experienced a situation where they have needed to prompt an apology because most of their child's play happens with other children at preschool (Paisley). One of the parents said that they did not believe that "children act with the intention to harm or wrong [an]other child" (Paige), and the last parent stated that they model apologies but that, at age 3, their child does not yet understand what a sincere apology is and they want it to "come organically from [them] when [they are] ready" (Paola). Overall, these responses suggest a worldview in which most parents have some level of expectation for apologies or that their children will eventually learn to apologize and that most of the parents in this sample prompt apologies in conflict situations. Overall, these responses suggest that parents have mixed views on whether apologies are performative or sincere, but many parents prompt or command their children to apologize as an expectation of behavior when enacting social repair.

In contention with parents, teachers' attitudes and expectations for apologies were predominantly centered around viewing apologies as performative and ineffective.

Five out of six of the teachers participating in this survey said that they do not think that children should verbally apologize to each other. Some of the teachers had very strong views on the idea of apologies as insincere and performative. One teacher wrote, “I like to do deeper than an I'm sorry. I feel that the children should be encouraged to build empathy through asking, "are you okay?" So I facilitate interaction and processing together rather than an "I'm sorry" then walk away response” (Treana). Another felt that an apology that is forced is not sincere (Talia).

Three of the teachers raised concerns that preschool-aged children cannot fully understand the remorseful meaning of apologies and that this lack of understanding is what makes apologies perfunctory, more so than because they are inherently insincere. For example, Taylor noted:

> I don’t think that children have a concrete understanding of what "I'm sorry" means and I think that we as a society socialize children to say the words without understanding what they mean or what feelings or emotions they're connected to.

Tegan echoed these feelings, stating:

> verbal apologies (from my experience) amount to "I'm sorry" and nothing more. I have seen children do something that hurts another child and say "I'm sorry" then run away. When approached by a teacher about it they always say "I said I'm sorry" with no real understanding of what that means.

Tessa expressed that they felt that verbal apologies can be helpful and serve a social function in helping children try to repair relationships, but that this may still be too complex for children this age. She explained:

> I think that verbal apologies are sometimes helpful because it teaches children that when you do something wrong, you should try to repair the relationship with whoever they hurt or "wronged". However I think at the preschool age children may have a hard time understanding such a complex thing as an apology and it may feel like a forced thing that they don't fully wrap their head around (Tessa).

In contrast, one teacher argued for apologies as having social value, both in terms of helping a child develop social skills and as a way to show respect. In reference to whether or not they felt children should verbally apologize to each other, Tori argued that:

> This is an opportunity for children for good learning and development of their emotional and social skills. When conflict occurs, both sides need to think about their own behavior and the intentions of the other side. When things are explained and apologized for, children can both feel respect as well as understanding of the cause of the conflict.

Three out of six teachers expressed that they thought other ways of communicating remorse were more effective than verbal apologies, compared to the other three teachers who considered these strategies to be equally effective.

Teachers' behavioral expectations for apologies in the classroom aligned pretty closely with their views on apologetic effectiveness. Overall, two teachers responded that they never ask children to apologize to each other in their class (Taylor; Talia), two teachers responded that they rarely ask children to apologize (Tori; Tessa), and two teachers responded that they sometimes ask children to apologize in class (Treana; Tegan) but then elaborated on this response by verbally indicating that they do not ask or prompt children to apologize in the classroom. The elaborations refuting their report of sometimes asking children to apologize included: "I don't ask children to apologize. If something goes awry I encourage children to check on the other to see if they are okay. If there was an injury caused I might have the child help get an ice pack." (Treana) and "I do not prompt children to apologize to one another, but I do ask students to check in with one another" (Tegan). Overall, behavioral expectations for apologies were closely aligned with performative themes and teachers seemed to view apologies as having low practical effectiveness.

Overall, in the area of attitudes and expectations for apologies, classified within themes of performativity or sincerity, more parent responses aligned with views of apologies as sincere and at least equally effective as other strategies at expressing remorse and often reported prompting or requiring apologies of their children than did not. In contrast, more teachers viewed apologies as performative and insincere, or at least too cognitively complex, to be effective and had almost no behavioral expectations for verbal apologies in the classroom.

(c) Expectations for Behavior: Structured Socialization vs. Organic Socialization

Finally, the last area of contention that emerged from thematic analysis of parent and teacher responses revealed that parents and teachers had differing ideas about whether social repair should be enacted organically out of a focus on the 'other' or whether it should be enacted based on learned social norms and expectations. Parent and teacher expectations for socialization and behavioral processes during social repair were based on themes of organic socialization vs. structured socialization. *Organic socialization* represents parent and teacher comments that highlight expectations for children to learn how to repair relationships on their own by using perspective-taking and empathy. *Structured socialization* represents parent and teacher comments that highlight expectations for children to learn how to repair relationships based on following specific social norms and expectations taught by adults.

The theme of organic vs. structured socialization was rooted in a tension observed between parents and teachers wanting to both instruct and guide children (contention *a*) in the steps of social repair vs. wanting children to learn to use empathy and perspective-taking independently to determine which steps are actually needed to repair a relationship. As discussed in chapter two of this dissertation, the preschool age range is a developmental period recognized as coinciding with large shifts in perspective-taking and ToM (Wellman et al., 2001). Emotionally, children in this age range are also refining emotion regulation skills and are becoming better at using prosocial skills, like empathy, when navigating relationships and social repair (Chen et al., 2003; Lewis & Haviland-Jones, 2000). The roles parents and teachers take on in scaffolding social repair skills, discussed in contention a, instructing vs. guiding, directly influence the extent to which parents and teachers expect socialization of repair following transgressions to be centered around the agency of the child (by using empathy and perspective-taking; organic socialization of social repair) or based on the child's ability to apply specific social rules and expectations related to apology use and social repair (structured socialization of social repair) at this age.

Parent responses reflected a similar struggle between these two themes as was seen in the evaluation of their views on their roles. Parents whose responses aligned with a need for children to have structured socialization often also used language that defined their role as instructing behavior. For example, some of the parents who used words like "assess" (Paula), "offered a script" (Paola), or focused on teaching their child to feel bad and understand social norms after a transgression (Pam) when self-describing their (instructing) roles also used language which focuses on "pointing out" (Paola; Pam) things that they want to teach their child about social interaction when discussing their child's behaviors (structured socialization). Parents who used role language that was focused on "helping" (Paula; Philip, Paisley, Parker) or "guiding" (Pearl; Parker) children through conflict had socialization responses that more frequently mentioned identifying the needs and emotions of the other child involved in the conflict and prompting children to think about the event from the other child's perspective (organic socialization).

However, just as parent role language sometimes encompassed both views in a single statement, every single parent response or example given for how children should try to resolve a conflict when they have wronged another child included some type of organic socialization focused on empathy or taking the perspective of the other. Of the nine parent responses, five parents mentioned encouraging perspective-taking, such as "understanding the other's position" (Paige) and the need to understand "both perspectives" (Philip). All nine respondents included an emotion word (such as hurt or angry; Philip; Parker) or some form of the word “feel.” Six of the parents specifically said that they would ask their child to put themselves in the place of the other child or to consider their feelings in order to decide what to do.

It needs to be noted that, just as children verbally championed verbal apologies in their interviews, yet rarely used them in actual conflicts, there was a similar disconnect between how almost all parents said they have prompted their children to apologize, but when asked open-ended questions about what their children should do as the transgressor in a conflict to mend a relationship, only one out of the nine parents mentioned that their child should “apologize” (Payton). Instead, they focused on nonverbal shows of affection (hugging, Paula; Pam; Paige; and Payton) or perspective taking and empathy (all). This suggests there may be a disconnect between how children and their parents understand verbal apologies as social norms and their lived behaviors, or expectations for lived behaviors, when enacting social repair. Overall, parents' responses in these surveys exhibited some structured language choices for telling their children what norms are important and when they need to do something (i.e., tell someone they are sorry) which supported an idea of structured socialization; however, overall, their responses were heavily focused on encouraging children to empathize and take the perspective of the other child involved in the conflict.

Teachers' views on organic vs. structured socialization reflected both their self-subscribed roles and their expectations for apologies vs. other types of displaying remorse (outlined in the discussion of contention *b*). Teachers in this sample rarely prompt social expectations, such as apologies, or insist that a child follows their plan regarding resolutions and repair (structured socialization) but they do encourage the organic evolution of each solution based on the wants, needs, and ideas of the children themselves. Many teachers self-described as waiting, listening, or actually avoiding intervening in children's conflicts unless they asked for help or there was danger of someone being hurt. When prompted to describe how they help resolve conflict if they need to intervene, teacher responses once again focused on listening and asking questions or asking if the children want help. For example, Taylor expressed that they would say, "It looks like you are both having some big feelings, can I help you solve this problem?" Talia mentioned that she intervenes "if facial expressions appear to get more frustrated, if there is yelling, or if it starts to get physical." In these instances, the teachers observe, question, and listen before guiding or directing behavior.

Teachers' responses also supported scaffolding independence in social repair by prompting children to share perspectives, acknowledge both child's feelings, and asking if they want or need help before offering solutions to children's problems. For example, Talia also stated, "I describe what I am seeing, and then each child takes a turn sharing their perspective." And Tegan, using child A and B as sample students, outlines how they use questions as an organic method to help children recognize each other's perspectives, their own and each other's feelings, and how they prompt the children for ideas regarding what would help. Their process is that they ask "[Child A] what happened?" Child A answers," then they ask, "[Child B] What happened?" They "compare stories, find discrepancies, figure out what happened." Then they ask, "How did that make you feel?" "Do you hear that ____ is feeling ____? How could we help?" In this example of Tegan's method, using questions as a scaffolding technique places value on the children's agency in developing their own social repair processes, and is indicative of organic socialization.

Overall, parents and teachers have expressed a desire to both help children learn how to enact social norms (structured socialization) and enact social repair organically based on the conditions of the situation and the other's feelings and perspectives (organic socialization). Their responses revealed both similarities and differences toward social behavior when navigating social conflict and repair. Across all points of contention considered in this thematic analysis, parents and teachers, in their own ways, are both trying to help children develop stronger prosocial skills and become more independent in how they handle both conflict and relationship repair.

Research Questions and Hypothesis Testing for Aim 2

The research questions for Aim 2 examined how a child's prior understanding of apologies, and the expectations that adults have for them to apologize, impact their apologetic communication behavior in peer interaction.

Research question five asked, "How does children's understanding of apologies compare to how they use apology behaviors?" More of the child participants in this sample were able to verbalize an understanding of apologies (n = 14, 64%) than were not able to verbalize an understanding of apologies (n = 8, 36%). Although verbal responses varied, more than half of the children expressed that they thought they should verbally apologize or say they were sorry if they hurt someone, their things, or their feelings. This self-expectation for behavior did not match their behavior in live peer conflict interactions, where only 2% used the word "sorry" and another 11% used some other form of apologetic language when they transgressed against a peer. Children's verbalized understanding of apologies does not match how they used apologetic behaviors in peer conflicts in this study.

Research questions six through eight are all related to how parents' and teachers' expectations and behaviors influence children's apologetic behaviors. Question six asked, "How often, and to what degree, do teachers intervene in peer conflicts?" was answered using the observational data coded in the IMPACT Apology Coding Frame. Teachers in this sample intervened quite frequently, in 70% of the conflicts (n = 73). Out of these 73 instances, 73% (n = 53) included significant adult intervention where the words or behaviors of the teachers directly influenced the resolution of the peer conflict.

Research question seven was, "Are parents' and teachers' attitudes and expectations for their children's or students' apologetic behaviors similar or different?" Overall, and as predicted by personal experience, there were distinct differences between parent and teacher responses. Compared to the teacher's responses, parents more frequently said that they directly walk children through what they think the child should do in a conflict and have a greater expectation for the use of verbal apologies. Whereas teachers more frequently said that they observe first, try to help children through conflict only if needed, ask questions instead of providing solutions, and rarely or never ask children to apologize verbally.

These differences are supported by written survey responses and closed survey questions. For example, in answering the research question, "What are the attitudes and expectations that parents and teachers have for their children's or student's apologetic behaviors?" parents and teachers had very different responses regarding their behaviors and attitudes regarding verbal apologies. Two-thirds of the parents who responded said that they have asked their child to verbally apologize to another child, yet all the teachers either responded that they have never or rarely asked a child in their class to apologize or if they responded "sometimes" their follow-up response explicitly stated that they do not ask children to apologize. These self-ratings for behavior were consistent with teachers' attitudinal responses to apologies, with five out of six teachers responding that they do not think children should verbally apologize to each other.

The parent and teacher responses for prompting apologies cannot be compared due to differences in how the questions were asked. However, I reduced teacher and parent answers to binary responses, with five out of six teachers responding that they do not think that children should verbally apologize to each other (n = 5 against apology, n = 1 for apology) and three out of nine parents responding that they have not asked their children to apologize (n = 3 against apology, n = 6 for apology), as a measure of whether they are generally for or against asking a child to apologize. I ran an independent T-test to compare the differences between two samples. Laverne's test for significance showed that the mean differences between groups are not statistically significant (p = .063) based on these sample sizes. There was a large ES, with Cohen's d = 1.071, CI = [-0.057, 2.164] indicating that the group means differ by approximately 1 standard deviation.

In terms of the effectiveness of verbal apologies, no respondents from either group said that they thought verbal apologies were more effective than other forms of showing remorse. However, 50% of teachers felt that other ways of showing remorse are more effective than verbal apologies compared to only 22% of parents. More parents considered apologies to be equally effective compared to other forms of showing remorse, with 78% of parents responding that both are equally effective compared to only 50% of teachers. There is some internal validity to these percentages as they align with the written differences that parents and teachers expressed in their narratives of how they work with children to resolve conflicts.

The final, eighth, research question and fourth hypothesis results were determined by comparing child participant data from the IMPACT Apology Coding Frame to the findings of the parent and staff surveys. Research question eight was, “How do the apologetic behaviors of child participants in this study relate to their parents’ and teachers’ expectations of apologetic behavior?” The behaviors of child participants aligned more closely with teacher expectations than parent expectations. Child participants only verbally apologized in 11% of conflicts (and only specifically used the word “sorry” in 2% of conflicts). This aligns more closely with teacher responses than parent responses. In the surveys, 83% of teachers responded that they do not think that children should verbally apologize to each other and, on average, rarely ask children to apologize. Whereas 66% of parents said that they have asked their child to apologize to another child which has set a precedent for that expectation. Child participants also displayed nonverbal remorse in 77% of observed conflicts, which aligns more closely with teachers’ evaluations. As mentioned above, 50% of teachers responded that other ways of showing remorse are more effective than or equally as effective as verbal apologies compared to only 22% of parents.

Hypothesis four predicted that children's apologetic communication behaviors would be more influenced by the expectations of their teachers in the context of their classroom than by their parents' expectations. Predictions that children would more frequently make contextually based behavioral choices based on the expectations specific to the environment that they are operating in than how frequently they would make behavioral choices based on parental expectations were accurate. In the classroom environment, only one out of six teachers (17%) reported that they think that children should apologize to each other and all teachers either reported that they never or rarely ask children to apologize, or that they sometimes ask children to apologize but that they have not asked these children to apologize. At home, six out of nine parents (66%) reported that they have asked their children to apologize to another child and qualitatively responded that they either ask or tell their child to say "sorry" or to verbally apologize. Proportionally, the majority of teachers reported that they do not think that children should apologize to each other and do not ask children to do so, while two-thirds of parents expect children to apologize at home. In the observational data, low numbers of child participants verbally apologized, similar to the expectations of their teachers, but contrary to the expectations of most of their parents. Out of 105 conflicts, only 2% of child participant transgressors ($n = 2$) used the word "sorry," and another 11% ($n = 2$) used some other form of apologetic language when they transgressed against a peer. This low percentage of apology use suggests that child participant behavior more closely aligns with self-described teacher expectations for behavior than expectations that parents have in the home environment.

Chapter 5: Discussion

The work for this dissertation focused on two aims: to (a) develop effective and appropriate measures that capture children's nonverbal and verbal strategies in apologetic communication and (b) examine the interrelationships between a child's communicative choices, knowledge of social norms and expectations, and relational outcomes. For this final chapter, I will begin by summarizing the central contributions of each study aim, including similarities between this study's findings and previous research, as well as alternative explanations for these findings. Then, I will discuss the limitations and strengths of this study. Finally, I will outline the theoretical and methodological implications of this study, propose future directions, and conclude with final thoughts regarding the broader implications of the findings of this research.

Summary of Central Contributions

The first study aim was to develop effective and appropriate measures that capture children's nonverbal and verbal strategies used in apologetic communication and their possible impact on relational outcomes. The work for this aim provided three central contributions to children's apologetic research: it (a) included a new measure in the form of the IMPACT Apology Frame, which led to findings that suggest significant differences in types of conflicts, apologetic behaviors, and forgiveness markers used by preschoolers during conflict events, (b) it provided a baseline of both verbal and nonverbal apology behavior types that preschool children are using as social repair strategies in direct peer interactions that can be referenced in future research, and (c) it provided additional observational data regarding relational outcomes and how quickly preschool children return to play, as well as information regarding the frequency of teacher and peer interventions.

Additionally, due to its design, this study significantly contributes to knowledge in the field by conducting research under three contextual conditions that have not previously been investigated jointly with participants as young as three years old; this study was (a) conducted in a naturalistic peer setting (e.g., a preschool classroom, including the full preschool age range of 3 to 5 years old), (b) involves actual conflicts among peers (e.g., hot cognition conditions), and (c) is situated in the child's sociocultural, interpersonal, and experiential contexts (e.g., friendship networks and classroom expectations). As a result, this study provides insights into preschool children's actual apologetic behaviors, not just their opinions about apologies, or impressions of transgressors that are not their daily peers.

Study Aim 2 examined the interrelationships between a child's communicative choices, knowledge of social norms and expectations, and the influence of parents' and teachers' attitudes and expectations for children's apologetic behavior. The quantitative results and qualitative findings related to the second study aim provided four central contributions to the knowledge of children's apology use, including (a) information about children's understanding of apologies, (b) how frequently teachers intervene in classroom conflicts, (c) similarities and differences in parent versus teacher attitudes and expectations of apologetic behavior, and (d) relationships between adult expectations for apologies and children behaviors in a classroom setting.

Interpretations of Significance for Study Aim 1

The study's first aim focused on developing measures to evaluate preschool apologetic communication tendencies and document children’s verbal and nonverbal strategies in apologetic communication tendencies in direct peer interactions. The IMPACT Apology Coding Frame as a new measure provided a deeper understanding of the full range of preschool children’s repair behaviors, including (a) previously undocumented differences between naturally occurring verbal and nonverbal apologetic communication tendencies which can be used as baselines in future research, (b) new information about forgiveness indicators and the timing and frequency of children indicating relational repair through a return to (or engaging in new) play, and (c) findings that add to current knowledge in the field regarding transgressor intentionality in naturally occurring preschool conflicts.

Naturally Occurring Apologetic Behaviors Among Children

The current study provides evidence of the kinds of verbal and nonverbal apologetic communication behaviors preschool children use in naturally occurring peer conflicts. The IMPACT Apology Coding Frame data suggested that children have a wider repertoire of nonverbal than verbal strategies in apologetic communication. In other words, children adopted a limited variety of verbal apologetic communication strategies while employing a wide variety of nonverbal apologetic strategies (see Tables 5-9). Significant differences were found among verbal and nonverbal apologetic communication strategies which further inform understanding of how preschool children enact apologetic communication strategies when making amends with peers.

Preschooler's Verbal Apologetic Communication Tendencies. Data on verbal apology use supported previous findings in two ways, (a) verbal apologetic communication was positively associated with peer likeability, and (b) results showed that verbal apology use during early childhood is infrequent and does not typically include high levels of elaboration (Chen & Ren, 2020; Schleien et al., 2010; Spivak, 2016).

The methodology of this study was unique in that it measured both transgressor and victim behaviors and perspectives during naturally occurring children's peer conflicts. This approach was therefore able to validate previous findings in the field in which children judged transgressors who apologized favorably but the methodology of the previous studies were not valid measures of peer interaction as they either used vignettes to identify children's opinions of a transgression that happened to someone else (Darby & Schlenker, 1982; 1989), used verbal apologies that were given by a peer the child victim never meets (Smith & Harris, 2011), or used apologies given by an adult researcher to the child victim (Drell & Jaswal, 2016). Despite relatively low observed instances of verbal apologies (n = 16, n = 2 uses of "sorry") there was a statistically significant association ($r(103) = -0.32$, $p = .047$) between verbal apology use and being ranked low numerically (low numeric rank represented higher average peer likeability based on being chosen as a peer that the victim likes playing with early in the sorting task). These results not only support previous research associating verbal apologies with favorable transgressor judgements, they extend previous research by providing statistically significant results associating transgressor verbal apologetic tendencies with victim likeability judgements under hot cognition conditions naturally occurring between preschool peers.

This study's findings also elaborated on known information about the types of verbal apologetic communication used by children. ANOVA and post hoc Tukey test results revealed that there was a highly significant probability of mean difference between the verbal apology strategy defined as giving a specific explanation for the transgression and all other verbal apology strategies ($p < .001$, with a range of all 95% CI data of less than 0.11 between interval values). In other words, child participants used specific explanations more frequently than all other verbal apology strategies.

The statistical significance of child participants using specific explanations more frequently than all other types of verbal apologies, and that they were used by children in each age group, 3, 4, and 5-year-olds, is valuable from a developmental perspective. Developmentally, this finding signifies that, in the full preschool age range, transgressors (a) are sensitive to the context of the transgression, (b) have the cognitive and linguistic capability of providing a specific explanation rather than a nonspecific explanation (i.e., "I need water to make seeds," Colton, age 4, instead of just "I need that;" or "I win 'cause I jumped right now," Cate, age 3.5 years, instead of simply "I win"), and (c) they actively choose to provide specific explanations over other strategies such as using simple apology terms (i.e. "sorry;" $n = 2$) or taking responsibility for the transgression ($n = 0$). Also, when combined with the finding that the use of verbal apology strategies was positively associated with peer likeability, the significant use of specific explanations in this age range suggests that preschool children may value specific explanations more than the use of verbal apology terms. If confirmed, this preference would be valuable in developing effective social repair strategy interventions for preschoolers.

Having a deeper understanding of verbal apologetic preferences in this age range also helps extend current knowledge in the field about how young children view reasons for transgressions. While no other current research details a range of specific types of verbal apology use among early preschool-aged children, these findings may be related to those from Waddington et al. (2023) that suggest 5-year-olds (more than 4-year-olds) value good reasons over bad reasons for transgressions when evaluating conflict situations. In this study, specific explanations were used by transgressors across all age groups; however, no children offered "bad" reasons as specific explanations (i.e., they did not state that the victim was wrong, or the victim's idea was bad, instead they gave explanatory reasons that justified their own needs or decisions, i.e., "I need water to make [x]" or "I was trying to [x]"). The specific explanations given by preschool children in this study suggest that "bad" reasons may be uncommon in this age group and that differences found in Waddington et al. (2023) between ages 4 and 5 may be related to differences in cool cognitive evaluations of transgressors with "bad" reasons more than based on direct experience.

While older preschoolers may have had more direct experiences with bad explanations due to age and exposure, it is possible that young children, or any children, may more readily accept any specific explanation in person when they are direct victims and want a reason to forgive a peer they want to play with. In other words, the context of the transgression influences the transgressor evaluation. Children may prefer playing again following actual conflicts but evaluate transgressors more harshly when they are evaluating slide images of a conflict narrated by adults (used by Waddington et al., 2023) because they are not relationally invested in reframing their view of the transgressor. Finally, children may have different standards for valuing or expecting a “good” explanation from a peer vs. from an adult transgressor, i.e., any specific explanation may be sufficient from a peer, whereas a “good” explanation may be expected from an adult.

Interestingly, although there was not a statistically significant difference between the means for offering repair and other strategies, the next most common verbal apology strategy was verbal offers of repair (specific, $n = 1$; nonspecific, $n = 2$). Although these numbers are small, their occurrence compared to no verbal offers to take responsibility (either by taking responsibility implicitly, expressing a lack of intent, or self-deficiency) supports previous observational work completed by Spivak (2016) showing that children ages 4 to 7 may prefer amend-making to apologies or a combination of both.

Additionally, although data from the IMPACT Apology Coding Frame suggested no significant differences between sub-categories of verbal apology modifiers, which were used infrequently ($n = 12$) and revealed minimal ($n = 2$) use of verbal apology elaborations, the lack of observed instances in this data may be informative of possible trends for verbal apology use in this age range. Possible explanations for the low occurrences of verbal apology modifications and elaboration may be that such extensions are cognitively challenging at this age due to linguistic or cognitive development. It could also be that preschool children are competent at understanding or using verbal apology modifications and elaborations under cool conditions but not under hot cognition conditions. Finally, an alternative explanation could be that children in this age range simply do not attribute as much importance or weight to additional words beyond "sorry" in the same ways adults do and, therefore, focus on communicating remorse in other ways.

Preschooler's Nonverbal Apologetic Communication Tendencies. Data on nonverbal apology use revealed a wide variety of significant differences among 91 different pairs of individual nonverbal apologetic communication behaviors as well as sub-category mean differences (see Appendix F for nonverbal significance findings and Table 9). Overall, out of 105 conflicts, 77% (n = 81) contained observed nonverbal apology strategies, with 843 total observed instances of nonverbal apology strategy use. While nonverbal indicators of guilt and shame have been previously studied in young children (Barrett et al., 1993; Berti et al., 2000; Kochanska et al., 2002) and children's reactions to nonverbal remorse cues delivered by adult researchers or shown in vignettes have been investigated (Darby & Schlenker, 1989; Vaish et al., 2011), this study provides the first evidence of support for nonverbal apologetic use by preschoolers aged 3-to-5 as displayed toward their peers following naturally occurring transgressions. The sheer number of observed instances of nonverbal apology use, combined with the statistical significance of using more nonverbal strategies than verbal strategies, indicates that nonverbal apology strategy use is an important factor in preschoolers' behavior during social repair and an important area for future study.

More specifically, results from this study indicate four specific nonverbal strategies that had a high frequency of significant statistical positive mean difference with the majority of all other items. These four items were all related to gestures and gaze, specifically head and eye movements focused down or away, indicating guilt or shame. These relationships align with frequency findings, showing that the most common nonverbal apology strategies used were gestures and gaze markers related to guilt and shame. The findings on the frequency and significance of nonverbal cues related to guilt and shame support previous children's research suggesting that toddlers display guilt through gaze aversion (Kochanska et al., 2002) and adult research suggesting that shame and embarrassment are associated with downward head and gaze movements (Julle-Daniere et al., 2020). More specifically, this study's findings elaborate on previous findings by placing these same behaviors in the center of preschool children's interactions following transgressions within the age range of 3 to 5.

The impact of these nonverbal cues for guilt and shame needs to be further examined from both the victim and transgressor perspectives to understand their implications for social repair among preschoolers. In the adult population, transgressors who are perceived to express genuine nonverbal remorse displays are viewed as less likely to reoffend and are also less likely to be punished with social exclusion (Baker, 2018). Additionally, interpersonal guilt, as displayed in this study's observational data, is very impactful for adults; interpersonal guilt leads to gaze aversion as a form of social avoidance and display of submission and eye contact with victims leads to higher emotional arousal for transgressors (Yu et al., 2017). It is unclear whether the gaze behaviors observed in this study are also related to social avoidance or are used in order to reduce emotional arousal, however, they may also be communicating responsibility and submission to their peer victims which may be influencing how peers interpret behavior. Regardless, the high levels of guilt and shame behaviors observed in this study suggest that preschool children may have a difficult time engaging in verbal apology acts due to low approach motivations associated with interpersonal guilt (Yu et al., 2017) or they may be displaying high levels of nonverbal remorse markers of guilt and shame due to unregulated internal emotional states.

The Relationship Between Verbal and Nonverbal Apologetic Tendencies. Finally, this study's data also provided a deeper understanding of the relationship between verbal and nonverbal apologetic communication strategy tendencies. Data from the IMPACT Apology Coding Frame revealed that, in this sample of preschool children, only one verbal apologetic communication strategy was used for every 51 nonverbal apologetic communication strategies (Verbal:Nonverbal = 16:823 = approximately 1:51) in the 105 documented peer conflicts. The related hypothesis test examining whether preschool children at the CDLS would use more nonverbal than verbal apologetic communication strategies following peer conflict showed a highly significant statistical difference with a large effect size ($p < .001$, $d = 0.952$) which confirmed that there was a statistically higher rate of nonverbal apology use among preschoolers in this population than verbal apology use.

This data, outlining the high use of nonverbal apology strategies by preschoolers, adds to the current understanding of apologetic communication strategy tendencies by suggesting that children as young as three years old consistently use nonverbal apologetic communication strategies significantly more frequently than verbal apologies in the context of their own social repair attempts. Additionally, the data shows low verbal apology elaboration use in this age range (*n* = 3) and also low verbal apology modification use (*n* = 12 instances across only ten conflicts out of 105), which supports recent research suggesting that children use more apology elaboration strategies, with more detail, as they age (from 1st to 8th grade; Chen & Ren, 2020) and is supportive of changes in apology use strategies over the life-span.

Forgiveness and Return to Play Behaviors

One component of the first aim of this study was to measure relational repair in a way that was salient to preschool-aged children. Although some research has examined social repair among young children on multiple dimensions (Spivak, 2016), much of children's apology work which is used to determine how children feel about transgressors is done under cool conditions, where the victim, or child evaluator, has no personal relationship with the hypothetical peer or adult transgressor and involves relatively low-stake offenses, such as missing stickers or coloring sheets that have already been colored (Smith & Harris, 2011; Amir et al., 2021). Comparatively, in this study, hot cognitive conditions frequently occurred wherein high levels of physical and verbal aggression were observed between familiar peers and occurred at statistically significantly higher rates than relational conflict types. Additionally, previous children's apology research has commonly used resource distribution to determine how well the transgressor was liked (Amir et al., 2012; McElroy et al., 2023; Oostenbroek & Vaish, 2019); however, just as the offenses themselves were relatively mild, the resources used, paper flowers (McElroy et al., 2023; Oostenbroek & Vaish, 2019) or used coloring sheets (Amir et al., 2021) may not have been deemed very important to the victim in the first place. Due to the hot cognition conditions, potentially high-stakes offenses, and prior relationships between peers present in this study, it was important that the relational outcome measures indicated forgiveness and relationship repair in a way that was relevant to the child participants.

The IMPACT Apology Coding Frame included eight items indicating potential types of forgiveness displays. Of these forgiveness items, forgiveness indicated by the victim's nonverbal display of playing together with the transgressor following the conflict was the most statistically significant forgiveness item, occurring more frequently than all other variables (n = 81). While sharing resources also occurred more than (and had highly significant relationships with) verbal forgiveness, verbal reassurance of personal state, and verbal acknowledgment of accidental intention or lack of wrongdoing, their use was more infrequent (sharing resources, n = 12) and less statistically significant than playing together. Indicating that overall, nonverbal signs of playing together following conflict were the most significant type of forgiveness displayed by preschoolers in this data set.

As a measurement of forgiveness and relational repair, returning to play was an indicator that was also measured in this study by calculating the time in seconds between the end of a conflict and the children's return to play (or the start of play if the children were not playing together prior to the initial conflict moment). The average time that it took children to return to playing following a conflict was very low. The average time that it took the transgressor and victim to return to play was 2 minutes and 52 seconds (SD = 9 minutes 51 seconds), and in 71% (n = 60) they returned to play in under 15 seconds (M = 2 seconds, SD = 3.9). This data indicates that child participants in this study took very little time following conflicts to display forgiveness through play and that preschool-aged children may not only use play as a sign of relational repair but that they do so very quickly.

Additionally, apologetic strategy variables were compared to the time it took child participants to return to play using binary measures of occurrence/no occurrence and totals of individual strategy item codes for the whole set of conflicts and for just a subset of 86 conflicts in which children returned to play. While all statistical results were nonsignificant, and the second hypothesis was not supported, two considerations may have impacted these findings: (a) this sample did not meet the minimum required sample needed for even a low power of .7 (n = 153 samples needed, only 105 and 86 samples available); therefore, we may be falsely accepting the null hypothesis due to low power instead of due to a lack of relationship between variables, and (b) there was low variance in the return to play time data. In 49% (n = 51) of 105 total conflicts and 60% (n = 51) of 85 conflicts where peers returned to play), play did not stop for more than a very brief pause of less than three seconds. In 70 instances where children returned to play, play resumed in under one minute, with multiple outliers over twenty minutes and one outlier over an hour. These trends created highly skewed data with high range variance and highly clustered data near the zero time point. This skew may have limited statistical differentiation within the return to play time variable data and possibly resulted in a Type II error where significance was underestimated.

Transgressor Intentionality in Naturally Occurring Preschool Conflicts

Data from the IMPACT Apology Coding Frame also adds to current knowledge in the field regarding transgressor intentionality in naturally occurring preschool conflicts. Based on conflict types, intentional types of conflict were displayed by transgressors at rates that were statistically more frequent than unintentional types of conflict. Victim behavior in this study indicated that child participants recognized the intentionality of these transgressions, with victim behavior indicating that they believed the initial transgression to be intentional 85% (n = 89) of the time based on directly seeing or experiencing the transgression 92% (n = 97 of the conflicts) percent of the time. Despite these high rates of perceived intentionality, victims indicated markers of forgiveness following peer conflict in 83 of 105 observed conflicts (79%). This data suggests that preschool-aged children may have different stances on forgiveness in the face of intentional versus unintentional transgressions than has been recently shown in the literature examining the impact of intentionality on children's forgiveness. Recent literature concludes that children are more forgiving of harms that are accidental across development than those that are intentional (Amir et al., 2021; McElroy et al, 2023). It is possible that these conflicting findings are due to the differences in relational context between the victims and transgressors in this study compared to previous works. In work done by McElroy et al. (2023), children were evaluating transgressors as third-party observers of a transgression presented via video. In work done by Amir et al. (2021), children were direct victims, but they never met their transgressor, they were simply told that the transgressor was another child who left a note indicating accidental or intentional and remorseful or unremorseful conditions for drawing on sheets meant for the victim. Therefore, the high rates of forgiveness, despite high rates of intention, found in this study may be due to emotional instead of cognitive evaluations of transgressors that are based on feeling highly motivated to return to play or maintain existing friendships.

Interpretations of Significance for Study Aim 2

The study's second aim was to examine how children's understanding of apologies and contextual influences, such as parent and teacher expectations for apologies, may have influenced observed apologetic behavior in this sample. The mixed methodology used to evaluate the second aim in this study adds to the current literature by providing (a) a deeper understanding of the relationships between children's knowledge of apologies and their apology use under hot conditions, (b) a new perspective on teacher's intentions behind interventions, (c) new knowledge about how teachers and parents may view and be socializing apologetic communication differently, and (d) new considerations for how apologetic socialization may be impacting children's behavior in the classroom.

Tensions in Children's Understanding and Practice of Apologetic Communication Under Hot Conditions

Using a mixed method approach which incorporated child participant interviews and observational data from the IMPACT Apology Coding Frame resulted in findings from this study that provide a deeper understanding of the differences between children's knowledge of apologies and their apology use under hot conditions. Prior apology research in the field suggests that young children have a fairly good understanding of apologies by early elementary school (Banerjee et al., 2010; Drell & Jaswal, 2016); however, I questioned whether or not children would apply their understanding of apologies to actual peer conflict situations due to differences in cool and hot cognition conditions as previous research in related fields suggests that children's understanding of relational concepts do not necessarily predict their behavioral choices (Amir et al., 2021; Blake et al., 2014). Child participant interview responses did not align closely with their apologetic behaviors during peer conflict in two domains: (a) understanding and expectations of verbal apologies vs. use of verbal apologies, and (b) responses about what made them feel better after a transgression and nonverbal behavioral choices they offered to others after committing a transgression.

Child participant interview responses suggested that more than half of the interviewed participants (64%, n = 14, out of N = 22 child interview participants) could articulate at least a basic understanding of verbal apologies. However, data from the IMPACT Apology Coding Frame shows that children’s understanding of apologetic practices does not match their actual practices. For example, children predominantly described apologies as “*saying* sorry,” [italics added] but only two children used the word “sorry” following a transgression in 105 conflicts.

There are a few explanations that may be contributing to this discrepancy. First, children may verbalize that they feel apologies are an appropriate social script but later cannot retrieve that strategy due to feeling emotionally, physically, or cognitively overwhelmed. Another explanation could be that preschool children do not have a strong awareness of, or ability to judge, when an apology is necessary. More than half of the child participants expressed that they thought they should verbally apologize if they hurt someone, their things, or their feelings; however, children may not have developed, or may not be accessing, empathy skills following a transgression, or they may be underestimating the hurt of the other child. It may also be that children offer verbal apology scripts because it may be easier for them to repeat a social script that has been taught at home than provide verbal descriptions of nonverbal behaviors that they think would be appropriate following a transgression. Finally, children may feel that they had a good reason for what they did that hurt another child and may be upset that the victim is upset with them, therefore not realizing that they are the ones who should be apologizing.

There were also discrepancies between responses about what made child participants feel better after a transgression and which nonverbal behavioral choices they offered others after committing a transgression. Being physically comforted by a hug or a snuggle was the most frequent response given by child participants regarding what helps them feel better after a transgression (n = 9); however, haptic cues, such as hugging or comforting touches, occurred the least frequently in terms of child participant behavior (n = 3, out of the total 823 total observed nonverbal apologetic cues).

These discrepant results are significant because they suggest that children's understanding and use of verbal and nonverbal behavioral strategies may differ. Additionally, preschool children may have different tendencies and expectations for verbal and nonverbal apologetic communication when interacting with peers than when evaluating adults. At the very least, the study's data suggests very low use of verbal apology strategies among preschoolers. In fact, the frequency of verbal apology use is low compared to children's reported expectations of verbal apology use within this study and is also low compared to naturally occurring rates of apology use previously reported in studies with slightly older child participants (Fujisawa et al., 2006; Sell & Rice, 1988).

Perspectives on Teacher Interventions and Intentions

Teacher interventions are quite common in classrooms with young children (Roseth et al., 2008). Data from the IMPACT Apology Coding Frame showed that teachers in the two focus classrooms at the CDLS intervened in the majority of observed peer conflicts (n = 73, 70%). Additionally, most of the time that an adult intervention occurred (53 out of 73 interventions, 73%), the intervention was significant, and the teacher's actions or words directly influenced the outcome of the conflict. This is consistent with previous findings by Spivak (2016) in which children complied with directions given by a teacher when intervening in 87% of conflicts; however, in their study, teacher interventions were only documented as occurring 14% of the time. The lower intervention rates observed by Spivak (2016) could be due to the observation of older children (primarily 5 to 7 years old) in elementary school settings with lower teacher-to-student ratios and less supervision during outdoor play.

This high level of teacher involvement in resolving peer conflicts in the classroom has direct implications for children's behaviors in the classroom. For example, when overwhelmed, children may find it easier to follow along with prompts or directions given by a teacher than to make their own decisions about social repair strategies or simply default to a teacher's authority. Alternatively, the high frequency and degree of adult intervention in these classrooms may also indicate robust teaching methodology, such as using an intervention to scaffold student's metacognitive processes (Lovett et al., 2013). Teachers use complex decision-making processes during conflict interventions (Myrtil et al., 2021). In fact, teacher survey responses from this study suggest that they view their role as helping children navigate the social repair process themselves and frequently try to wait and attempt to mediate conflict more than they attempt to direct behavior. Based on teacher responses regarding how they like to intervene when observing conflict, teacher participants specifically state that they "encourage [students] to come up with ideas" (Treana) and "listen to see if [the children] are able to reach a solution" (Talia) before intervening. The high degree of influence that IMPACT Apology Coding Frame data suggests teachers have when intervening speaks to the authoritative power that adults have as "experts" or "authorities" in the room; however, the survey findings from this study suggest that teachers are engaging in interventions with the intention of guiding children through social repair as opposed to directly requiring specific methods of resolution, a method which has been shown to have positive effects on peer interactions (Girolametto & Weitzman, 2007). This is an important distinction because while previous studies have suggested that intervention disrupts social repair (Roseth et al., 2008), this study's findings provide a depth of understanding behind the intentionality influencing teachers' intervention strategies while helping children resolve conflicts. These findings are supportive of more recent research suggesting that teacher intervention strategies that focus on mediation over cessation during conflict interventions have better outcomes than conflicts where there is no teacher intervention (Myrtil et al., 2021).

Implications of Parent and Teacher Apology Views on Apologetic Socialization

The thematic analysis of parent and teacher survey responses indicated that parents' and teachers' attitudes and expectations regarding apologies primarily differ based on how they view their roles in children’s conflicts, attitudes and expectations for apologetic communication, and expectations for socialization and behavior during social repair. These differences have direct implications for how apologies are socialized differently at home than in the classroom. In the thematic analysis of parent and teacher responses, three dimensions of contention were identified: viewing roles as instructing vs. guiding, viewing apologies as performative vs. sincere expressions of remorse, and having expectations for the socialization of social repair as occurring organically vs. through structured socialization. Findings from all three of these dimensions have implications for how preschool children enact, or choose not to enact, specific apologetic communications in the classroom.

The first juxtaposition was related to how parents and teachers view their role in helping children navigate peer conflict and social repair, particularly if they view their role as primarily teaching through direct instruction (instructing) versus helping children navigate the conflict on their own (guiding). Parent and teacher responses were both generally favorable toward the idea of guiding children through social repair; however, teachers’ descriptions of what they say and do when they are intervening in a conflict were highly focused on guiding behaviors, whereas parents’ descriptions either combined instructing and guiding words or favored words and actions that focused on instructing. Overall, parents more frequently included added dimensions in their responses that were related to direct instruction and fulfilling social norms. Further interviews or surveys are needed to understand why these tendencies occurred. Still, one explanation could be that parents feel more responsible for their children's public behavior and may be more conscious of teaching social norms than teachers are of their students. Parents may internalize their child's behavior as a reflection of themselves, leading to more explicit direction in expected social norms and behavior. Conversely, teachers may be conscious of not teaching specific moral agendas or favoring one child's feelings or perspectives over another, which potentially impacts how they approach peer conflict mediation in the classroom.

The second area of contention explored in the thematic analysis of parent and teacher surveys focused on prevailing attitudes toward apologies as being predominantly performative or sincere. Overall, most parents, 6 out of 9, felt that verbal apologies were at least equally effective at expressing remorse as other methods and have asked their children to apologize. In contrast, teachers either felt that other ways were more effective (n = 3) or equally effective (n = 3) at expressing remorse, and only one out of six teachers felt that children should apologize to each other. These responses suggest that more children have experienced a parent prompting them to apologize as an expression of remorse than a teacher prompting them to apologize. As of the time of this study, no teachers in the study classrooms had reported asking a child to apologize. These findings suggest that children may not perceive the same need or expectation for a verbal apology in their classroom as at home due to teachers purposely avoiding prompts for a verbal apology in the classroom.

The third contention compared parents' and teachers' expectations for the socialization of social repair as occurring organically versus through structured socialization. Although parents' responses regarding prompting apologies were more direct and structured, many of their responses about how they intervene also supported a more organically developing process of social repair where they at least encourage their children to consider the other child's perspective and only sometimes specifically tell children what to do. Teachers, on the other hand, consistently responded in ways that predominantly featured organic approaches to social repair, often suggesting that they try to stay out of the process entirely if possible. In this population, children may bring knowledge of specific strategies and phrases offered as a structured response to social repair from home into the classroom but are instead prompted in the classroom to evaluate each situation from both perspectives. This scaffolding of cognitive and affective perspective-taking through language modeling is beneficial to preschoolers as it has been linked to advanced perspective-taking and emotion comprehension required to understand that emotions are both complex and that others may have mental and emotional states that differ from their own (Macheta et al., 2023).

In addition to these three areas of contention, I would like to point out a difference between the type of empathy promoted by parents vs. teachers, which surfaced when evaluating the differences in how roles were viewed. More parents than teachers promoted self-oriented, emotional perspective-taking, where you imagine yourself in another's shoes (i.e., four parents specifically stated that they ask their child some version of "How would you feel if that was you?" compared to no teachers). Emotional and cognitive empathy are neurobiologically considered a dual process system in which emotional empathy occurs quickly and automatically, while cognitive empathy is a higher-level cognitive route that is a more complex and iterative evaluation of another's perspective (Yu & Chou, 2018). Self-oriented, emotional empathy can be very personally distressing and may increase anxiety and interfere with prosocial behaviors (Abramson, 2021). In contrast, other-oriented perspective-taking promotes a type of cognitive empathy that is based on cognitive perspective-taking, where the focus is on reading someone else's emotions and imagining their perspective, resulting in empathic concern or compassion (Abramson, 2021; Martingano et al., 2021; Yu & Chou, 2018). In other-oriented perspective-taking, the goal is not to immediately feel what you think the other person is feeling but to try to understand their feelings, which leads to an emotional response to your understanding of their perspective.

Compared to parent survey responses, teacher survey responses more frequently focused on cognitive empathy, including five out of six teachers emphasizing that they ensure the victim can speak about their emotions before making decisions about what to do next. Preschool children are still developing emotional regulation and perspective-taking skills (Astington & Gopnik, 1991; Sabbagh et al., 2006; Sabbagh & Bowman, 2018; Zelazo et al., 2003). Guiding children through the process of cognitive, other-focused empathy, as the teachers observed in this study stated that they try to do, is vital for reducing the distress children feel during peer conflict and freeing up sociocognitive resources that help children engage in prosocial repair.

Considering the Implications of Apologetic Socialization on Classroom Behavior

As findings from this study allow for comparisons between the qualitative understanding of adult expectations of apologies and quantitative observations of actual apologetic communication behaviors in the classroom, I wanted to explore how the apologetic behaviors of child participants in this study related to their parents' and teachers' expectations of apologetic behavior. I began this analysis from the premise that children are highly contextual (Bukatko & Daehler, 1989) and likely to be influenced by the authority figures in the room. Spivak and Farran (2016) found that preschool teachers' attitudes directly predict their student's classroom behavior in first grade. They found that the teacher's positive emotional tone and more approving and less disapproving behavior directly predicted positive gains in social behavior and less problem behavior, even in the absence of a social-emotional curriculum. These findings led to my final hypothesis that the expectations of their teachers will be more influential on children's apologetic communication behaviors in the context of their classroom than the expectations taught by their parents at home. Two-thirds of parents (n = 6) reported asking their children to verbally apologize, suggesting they have a higher-than-chance behavioral expectation for their children to do so. Only 17% of teachers (n = 1) thought that children should verbally apologize to each other. All teachers either reported that they do not ask children to apologize or that they had not asked any of these children to apologize at the time of the study, suggesting that teachers have demonstrated a lower-than-chance expectation for children in the classroom to apologize verbally. Based on data from the IMPACT Apology Coding Frame, child participants' behavior showed similarly low rates of verbal apology use as child participants only used verbal apology language in 11% of observed conflicts (*n* = 12).

Additionally, 50% (*n* = 3) of teachers versus 22% (*n* = 2) of parents reported that they felt other ways were either more important or equally effective at showing remorse. Although children used statistically more nonverbal apology strategies than verbal apology strategies, comparisons of child participant behavior to teacher and parent expectations were not fully confirmed statistically due to not quite meeting statistical significance between parent and teacher expectations ($p = .063$, Cohen's d = 1.071, CI = [-0.057, 2.164]). These results may have been different if I had counted the teacher who reported that they do think that children should apologize to each other as not expecting apologies instead of being in favor of apologies since that same respondent later added that they had not asked anyone in the class to apologize; however, the response was left as first reported to maintain consistency between how responses were reported on the initial question regarding expectations. Additionally, this comparison was made between two different, but both small, group sizes of six teacher respondents and nine parent responses so it is possible that a larger sample size could show a significant difference in relationship.

Ultimately, this study's findings did show that more teachers than parents favored nonverbal apologetic behaviors and were against children verbally apologizing to each other, while child participants displayed significantly more nonverbal behaviors than verbal behaviors following transgressions; however, this study would need to be replicated with a more significant parent and teacher sample size to confirm statistically whether child participant apologetic communication behaviors in the classroom were more closely related to teacher expectations than parent expectations.

Limitations and Strengths

Limitations and Generalizability

As the first of its kind in this age range with a focus on nonverbal apologetic communication tendencies, this study of preschool children's naturally occurring apologetic tendencies and relational outcomes had its share of limitations. Primary limitations were based on participant selection and quantity, methodological limitations within the Peer Likeability Sorting Task, frame items, and qualitative interview and survey questions that were exploratory and not tested for internal validity or reliability.

Although there were 28 total child participants whose demographics closely aligned with the greater demographics of the area, participants were not chosen randomly but based on classroom consent. While this was done to limit interruptions and singling out any children included or not included in the study, it still limits the generalizability of the study's results due to the participant selection procedures. Additionally, although all six primary lead and student teachers filled out surveys, only nine parents of the 28 child participants completed surveys. Due to these small participant count sizes, it was difficult to reliably compare quantitative data between observations documented on the IMPACT Apology Coding Frame and the parent and teacher surveys. Finally, due to the sample size of found conflicts, there was insufficient power for reliable comparisons between return to play times and apologetic communication strategy use.

The methodology for the Peer Likability Sorting Task measure could have been improved. Due to IRB restrictions on specifically ranking peer choices, the original rank order method for peer sorting was changed to an open sorting task where children simply identified “who they like to play with the most.” This could have been clearer as there were inconsistencies in how many peers were chosen by each child participant. The results may have been influenced by preschool tendencies to move all of the pictures simply to move around tiny pictures of their friends. Although steps were taken to randomize the presentation of peer choices for each participant, their eyes may have still been drawn to a peer’s photo, which would not have been the first choice if verbally asked who they liked to play with the most. In future research, a method like that used by Sebanc et al. (2003), wherein each child could choose three photos of who they especially like and three of whom they do not like very much. If approved, this method would improve consistency and direct comparisons of child responses.

Finally, as is typical with exploratory research, coding measures must be further tested for validity and reliability. Also, methodological refinements should be made to the wording of questions and the data gathering. The first two child interview questions, asking children what they thought apologies were and asking children what an apology means to them, were too closely related to each other, and may have blurred the children’s answers or led to additional responses related to “I don’t know” due to not understanding the differences in the questions. Also, although some of the parent and teacher survey questions were nearly verbatim to each other, more care could have been taken to create parallels between each group's questions for direct comparisons of answers. In data collection, capturing all the nonverbal indicators of remorse was sometimes challenging due to the camera angle, resulting in a lack of observation when a particular nonverbal behavior may have been present. Although it was outside of the financial resources of this study, future observational data collection could be improved with body cameras worn by the children.

Strengths

One of the primary strengths of this study is that it significantly contributes to knowledge in the field due to study design. This study was conducted in a way that combines three contextual conditions that have not previously been met; it was (a) conducted in a naturalistic peer setting (e.g., a preschool classroom, including the full preschool age range of 3 to 5 years old), (b) involves actual conflicts and both verbal and nonverbal apology use among peers (e.g., naturally occurring under hot cognition conditions), and (c) is situated in the child's sociocultural, interpersonal, and experiential contexts (e.g., friendship networks and classroom expectations). These contextual conditions add to the breadth and depth of content knowledge we have about children's early peer apologies in the field by including previously unavailable data on the behaviors of three-to-five-year-old children in the classroom. Additionally, this study adds validity to our knowledge of children's apology use by capturing actual children's apology use during live peer conflict events instead of measuring how children feel about others apologizing. This study also adds a new measurement of children's apology behavior, which includes a full range of nonverbal communication strategies that were not previously studied in this age range. Finally, although there was not a large enough sample for accurately measuring returning to play as a relational outcome, peer likability measures and the sheer number of times that children returned to play within moments of the end of their conflicts provide rich information about children's behavioral choices in the classroom context when interacting with peers to fuel future studies.

Also, in addition to the findings for the research questions and hypotheses reported, the IMPACT Apology Coding Frame provided additional information regarding conflict types, teacher and peer intervention tendencies, and how frequently preschool children in this sample commit intentional vs. unintentional transgressions. While not the focus of this study, these findings could strengthen future research by providing a baseline for naturally occurring conflict types, intervention, and intentionality in this age range upon which to compare or study future conflict behavior.

Implications and Future Directions

Methodological Implications

The data gathered in this study and the creation of the IMPACT Apology Coding Frame have specific methodological and broad theoretical implications for studying children's apologies. The primary methodological consideration for future work is to include nonverbal apologetic communication choices in measuring apologies. This study showed significantly more use of nonverbal apologetic communication in the preschool age range than verbal apologetic communication strategy use. Future research needs to consider the full range of apologetic communication strategies being used across the preschool age range and among younger and older children. Further examination of the strategies identified in this study, with more extensive and repeated sampling, would help distinguish whether there are relationships between types of apologetic communication strategies and relationship repair that could not be found in this study due to low sample size and low variance in nonverbal strategy use across conflicts and children's return to play times.

Additional methodological implications from this work stem from the differences between children's verbalization of their understanding of apologies and apology norms and their actual behavior in peer interactions. This suggests that research that only examines children's reactions to apologies given by strangers, or hypothetical friends fails to capture the whole picture of children's understanding and use of apologies on two levels: (a) it only captures children's reactions to apologies, not how they enact them, and (b) those reactions only measure how children feel after receiving an adult apology or evaluate interaction with someone they will not meet and are not receiving a face-to-face apology from directly. These are important distinctions because receiving an apology from an adult, especially an adult they have just met, is an interaction with a high power-dynamic impact and a low relational power impact. Children may feel that an adult is 'right' or that they can do things that children cannot simply because of their adult status. Children also have a low relational buy-in with hypothetical children or adult researchers--they may feel that they can either judge transgressors more kindly or harshly because they will not see them again.

In research where children are evaluating story characters, or even children whom they never meet, they may be basing their choices and rating transgressors on how people should be viewed based on social norms, not based on the relational dynamics that occur when children have engaged in apology themselves, either as a transgressor or a victim. This measures their knowledge, but, as is seen in the results from this study, where children may know what an apology is and understand using a verbal apology to make amends after committing a transgression, they do not apply that knowledge or enact that social norm in the actual conflict situation. Meta-analyses have shown that scenario methodologies are associated with enhanced cognition effects. In contrast, recall methodologies are associated with enhanced affect effects (Fehr et al., 2010), further supporting that there are psychobiological differences between cool and hot cognition events even at a recall level and that examining children's reactions to apologies under cool conditions is not evidence of their actual reaction behavior.

In this study, comparing peer likability ratings proved useful as a relational marker, showing that children who verbally apologize may be more well-liked by their peers. This has methodological implications for future research as it is evidence that verbal apology use may have relational influence even at later time points. In this study, measuring the time it took children to return to play was not as reliable; however, the lack of reliability may have been due to the low variance that occurred due to how frequently most child pairs returned to play following a transgression. As choosing to play with another child shows a clear preference for that child, this type of measure should not be discounted in future research; however, based on the results of this study, a future methodological recommendation would be to try to capture a larger sample size which could help account for the small differences in variance or whether nonverbal apology use was contributing to the children's return to play.

Theoretical Implications

The findings of this study have distinct theoretical implications for future work and understanding of children's apology use, including, but not limited to, (a) implications for how children enact apologies among peers, (b) how apology use changes over the lifespan, and (c) how strongly children view play as a motivator for repair.

Data from this study outlines both a high use of nonverbal apology strategies, which was not found to be statistically significant, and very low apology use, which was found to just meet significance criteria, with almost no verbal elaboration or modification, in this age range. However, the vast majority of children returned to play. This has theoretical implications for how children evaluate apologetic communication during interactions, either that it actually carries little weight and another confounding variable is leading to the repair, or that nonverbal remorse displays are highly expected and influence repair but (a) there were no differences in the peer likability data because so many of the children displayed nonverbal remorse and were socially expected to do so, or (b) the return to play and nonverbal occurrence data were too similar to find a relationship in this study. At the very least, the significance of the nonverbal behaviors observed in this study indicates that there are psychobiological mechanisms that trigger guilt and shame markers following a transgression that need to be considered when mapping the processes between transgression and repair.

The results from this study add to the field's understanding of the tendencies of transgressors and victims in this age range. The findings show that the full range of preschool-aged children use different apologetic communication strategies than are observed in adults or even older children. This has theoretical implications for how apology use is studied differently across the lifespan and should be considered when developing theories involving the learning processes involved in the socialization of apology, as well as the developmental considerations of children in this age range.

Finally, as mentioned, children in this age range return to play at very high rates and very quickly. Future research should consider examining the motivators and mechanisms behind the desire to return to play or return one's relational status to “friends” with a peer. Theoretically, the drive to resume play may create conditions for fewer apologetic behaviors to repair a relationship. This high drive to return to play may also be influenced by life factors related to this period of the lifespan, as it is a time in life when children rarely have a choice over where they are or with whom they get to choose to play. This lack of playmate options may increase the need to maintain friendships as it limits the ability to self-select other friends as replacements, an option that increases with age.

Future Research Directions

Given the contextual conditions of this research and the development of a new measure for gathering and evaluating observational apology data in young populations, the implications of this research for future research are extensive. The data gathered using the IMPACT Apology Coding Frame has led to a wealth of future variable relationships to examine. In the area of nonverbal apologetic communication strategies alone, 91 statistically significant non-repeating relationships need further exploration to learn more about how children use nonverbal cues to display remorse and communicate apology.

Findings focused on the relationships between different levels of intervention, the influence of intentionality, or various conflict types and relational measures should be explored as avenues of analysis for this observational data to expand on current research that has examined these variables under other conditions. Also, although this study did examine both transgressor and victim behaviors, further organization of the data could be completed to map the dyadic relationships between verbal and behavioral choices during these conflicts and coded to find patterns of conflict and social repair behaviors previously unexplored in this age range.

Additionally, this study's initial findings suggest a positive correlation between verbal apology use and peer likeability. Future research is needed to confirm this trend and to evaluate the impact of different verbal apologetic strategies on peer likeability. For example, current research in the field suggests that children view others who apologize as more likable; however, this research has been conducted under conditions where children receive a written note including the word “sorry” from a hypothetical peer in response to receiving an empty sticker sheet (Smith & Harris, 2011) not in natural interactions with their peers. Comparatively, the examples of apologetic communication use observed in this study were primarily specific explanations for behavior (*n* = 11 out of 16 verbal apology strategies used). Further research could examine whether specific explanations or use of the term “sorry” are more strongly associated with peer likeability or other measures of social repair. It may be that providing a specific explanation is just as effective as a repair strategy as the use of the word “sorry” due to establishing a good reason (shown to be effective in leading to forgiveness in older children; see Waddington et al., 2023) and restoring the victim's trust in the transgressor by confirming that the violation occurred due to a competence issue and not due to a lack of integrity or ill intention (Kim, 2023).

Conclusion

How you and I teach, parent, learn, and care for others matters. If teachers and parents focus on the emotions and learning processes of children in the moment of conflict and teach empathy in ways that are other-directed, verbal and nonverbal apologetic behavior have the potential to be powerful tools for repair. As data from this study showed, even a simple verbal apology can be related to a victim feeling like a transgressor is someone they like to play with; it provides acknowledgment or explanation for behavior that improves how someone harmed views the wrongdoer. Suppose parents and teachers teach apology behaviors in a way that is synonymous with displaying concern and remorse, verbally and nonverbally. In that case, the long-term potential for repair is high because the approach to the apology becomes rooted in caring for the other. The apology event itself becomes an act of care, a moment of remorse for behavior or circumstance that does not have to be indicative of internal wrong but an acknowledgment of the behavior or accidental action as regrettable and an acknowledgment that, as the transgressor, you see and hear the victim's perspective, you see that they feel wronged, and you feel concerned and remorseful.

Currently, there are many parenting books, Tik-Tok tutorials, and blogs touting the value of "free-range" or "renegade" parenting, which openly use what I would describe as borderline click-bait statements such as: "it's okay not to share," "kids don't have to say ‘sorry,’” and “only punch friends” to eventually get to messaging that does focus on more developmentally appropriate advice like teaching children how to explain that they will share when they are ready, and only apologize if they mean it (Shumaker, 2012; Shumaker & Johnson, 2021-present). While I agree that apologies should not be forced, dismissing them entirely, especially when apologies and remorse are shown to carry significant weight for relational repair later in life and correlate directly with forgiveness (Gold & Weiner, 2010), seems rash and individualistic in a way that discourages other-focused empathy. I believe that it is easy to make three fundamental mistakes in how apologies are currently being taught as an act of repair, (a) by specifically prompting or directing children to apologize without context and without using specific words to help the child separate their behavioral choice from their internal sense of self there is an increased risk of inducing shame and therefor avoidance behaviors and low self-worth (i.e., by responding with words such as “let’s think about that choice together” instead of “do you see how you made [the other child] feel bad?” adult language can help children evaluate their own choices objectively instead of internalizing poor behavioral choices), (b) by giving too much power to the word “sorry” on its own, without regard for supporting nonverbal indicators of remorse, the term “sorry” takes on a weight that can be both more significant than it represents and lead to adult expectations that it is only used for very serious offenses as opposed to any time that a genuine expression of remorse is appropriate, and (c) adults underestimate children’s capacity for compassion and creative solutions for relational repair. Underestimating a child’s ability to problem solve and overestimating our ability to determine the best solution for their problems inhibits children from learning cognitive empathy and coming up with their own social repair strategies.

Instead, I argue that adults should learn from the children who participated in this study. Observational data showed preschool children in this study displaying abundant nonverbal remorse, forgiving each other, and returning to play almost immediately and easily. Adults are experts at attributing blame and associating what are sometimes simple mistakes (like someone forgetting to pick up milk on the way home) as rooted in deeper intentions and signs that someone no longer cares for or respects our needs. Even young victims can use anger, frustration, and blame as gauze for deeper feelings of hurt; however, observations of how quickly children returned to play in this study, suggest that, at least to some extent, they have processed or moved on from those feelings quickly. In a sense, children have a high immediate emotional reaction which burns out quickly (as in a flambé) due to emotional regulation conditions, while adults have more regulated immediate emotional reactions, but our internal emotions tend to be tied to emotional and relational baggage and burn slowly (as if on simmer). More research in how children evaluate transgressions contextually and can move past most transgressions (even high stakes transgressions involving physical aggression and intentional conflicts over resources or how play should occur) sets a high precedence for how adults could learn to evaluate transgressions as more situational, as opposed to deeper indicators of relational intention.

Additionally, if young children can be taught to disassociate wrongdoing with internal valuations and learn that apologetic behavior can be used as a relational tool instead of a magical script, the way that the next generation of adults feels about apologies may be less stigmatized. An apology is an opportunity for connection. It should be an acknowledgment, a sign that the transgressor feels remorseful because they recognize the impact of their actions and the victim's feelings of hurt. In a time when children are constantly experiencing increasing levels of anxiety (Allen et al., 2020; Mangione et al., 2022; Twenge, 2000) and may feel lonely or unseen in many different ways (Copeland et al., 2018), it is imperative that future children's apology research considers how apologies can be taught in ways that both reduce the anxiety of the transgressor and help the victim feel "seen" to help heal relationships and create connections in a way that is healthy for both child transgressors and child victims.

By age two, my daughter could put on her own band-aid. She did not need me to put on her band-aid because it was too challenging to do it herself; she needed me to put it on because stopping to acknowledge her hurt and tend to her feelings showed care and concern; it helped her feel validated and loved. The act of putting on the band-aid became relational instead of just a way to stop the bleeding. If, as a parent, I say that my child cannot have a band-aid because they are not bleeding, and we would therefore be wasting a band-aid, what I am really wasting is the opportunity to show care, and what I am really communicating is that their feelings are not worth as much as an item that I could buy 200 of for the price of the iced tea they watched me buy at a Caribou.

Recently, an argument was made that we have spent years in the field of communication studies neglecting and underestimating the social, emotional, and cognitive abilities of young children (Socha & Punyanunt-Carter, 2021). I could not agree more. We underestimate young children so much that our power over their voices extends to how we conduct research, design parenting strategies, and plan educational interventions. We regularly assume that the target goal is to be like a middle-aged adult, when in fact, at least in my experience, middle-aged adults rarely have everything figured out and could learn quite a bit from how children approach friendships, problem-solving, and forgiveness.

References

Abramson, A. (2021). Cultivating empathy. *Monitor on Psychology, 52*(8). https://www.apa.org/monitor/2021/11/feature-cultivating-empathy

Ainsworth, M. (1989). Attachments beyond infancy. *The American Psychologist, 44*(4), 709-716. https://doi.org/10.1037/0003-066X.44.4.709

Allen, K.B., Benningfield, M., Blackford, J.U. (2020). Childhood anxiety—If we know so much, why are we doing so little? *JAMA Psychiatry,* 77(9):887–888. doi:10.1001/jamapsychiatry.2020.0585

Altarriba, J., & Basnight-Brown, D. (2022). The psychology of communication: The interplay between language and culture through time. *Journal of Cross-Cultural Psychology*. https://doi.org/10.1177/00220221221114046

Amir, D., Ahl, R. E., Parsons, W. S., & McAuliffe, K. (2021). Children are more forgiving of accidental harms across development. *Journal of Experimental Child Psychology*, *205*, 105081–105081. https://doi.org/10.1016/j.jecp.2020.105081

Ashby, N., & Neilsen-Hewett, C. (2012). Approaches to conflict and conflict resolution in toddler relationships. *Journal of Early Childhood Research*, *10*(2), 145-161.

Astington, J.W., Gopnik, A. (1991). Theoretical explanations of children's understanding of the mind. *British Journal of Developmental Psychology, 9,* 7–31.

Bachman, G. F., & Guerrero, L. K. (2006). Forgiveness, apology, and communicative responses to hurtful events. *Communication Reports*, *19*(1), 45–56. doi: 10.1080/08934210600586357

Baker, A. T. (2018). *The elusive moral construct: An examination of remorse from a functional perspective* (T). University of British Columbia. Retrieved from https://open.library.ubc.ca/collections/ubctheses/24/items/1.0372338

Banerjee, R., Bennett, M., & Luke, N. (2010). Children's reasoning about the self-presentational consequences of apologies and excuses following rule violations. *British Journal of Developmental Psychology, 28*(4), 799-815.

Banse, R., & Scherer, K. R. (1996). Acoustic profiles in vocal emotion expression. *Journal of Personality and Social Psychology*, *70*(3), 614–636. https://doi.org/10.1037/0022-3514.70.3.614

Barki, H., Hartwick, J. (2004). Conceptualizing the construct of interpersonal conflict. *International Journal of Conflict Management*, *15*(3), 216-244. https://doi.org/10.1108/eb022913

Barrett, K. C., Zahn-waxler, C., & Cole, P. M. (1993). Avoiders vs. Amenders: Implications for the investigation of guilt and shame during Toddlerhood? *Cognition and Emotion*, *7*(6), 481–505. https://doi.org/10.1080/02699939308409201

Bates, E., Benigni, L., Bretherton, I., & Camaioni, V. (1979). *The emergence of symbols: Cognition and communication in infancy*. Academic Press.

Baumgartner, E., & Bombi, A. S. (2005). Preschool friendships: A multi-method study. *Italian Journal of Psychology, 32* (4), 759-780.

Baumgartner, E., & Strayer, F. F. (2008). Beyond flight or fight: Developmental changes in young children’s coping with peer conflict. *Acta Ethologica*, *11*(1), 16-25.

Baxter, L. A., & Braithwaite, D. O. (2008). *Engaging theories in interpersonal communication: multiple perspectives*. Sage Publications.

Bekelman, T. A., Dong, Y., Elliott, A. J., Ferrara, A., Friesen, K., Galarce, M., Gilbert-Diamond, D., Glueck, D. H., Hedderson, M. M., Hockett, C. W., Karagas, M. R., Knapp, E. A., Lucchini, M., McDonald, J. C., Sauder, K. A., & Dabelea, D. (2022). Health behavior changes during the COVID-19 Pandemic: A longitudinal analysis among children. *International Journal of Environmental Research and Public Health*, *19*(15), 9220-. https://doi.org/10.3390/ijerph19159220

Berti, A. E., Garattoni, C., & Venturini, B. (2000). The understanding of sadness, guilt, and shame in 5-, 7-, and 9-year-old children. *Genetic, Social, and General Psychology Monographs*, *126*(3), 293-318.

Beyens, U., Yu, H., Han, T., Zhang, L., & Zhou, X. (2015). The strength of a remorseful heart: Psychological and neural basis of how apology emolliates reactive aggression and promotes forgiveness. *Frontiers in Psychology*, *6*, 1611–1611. https://doi.org/10.3389/fpsyg.2015.01611

Blake, P. R., McAuliffe, K., & Warneken, F. (2014). The developmental origins of fairness: the knowledge–behavior gap. *Trends in Cognitive Sciences*, *18*(11), 559–561. https://doi.org/10.1016/j.tics.2014.08.003

Bourg, W., Broderick, R., Flagor, R., Kelly, D. M., Ervin, D. L., & Butler, J. (1999). *A child interviewer's guidebook.* Sage Publications, Inc.

Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development.* Basic Books.

Bradshaw, J., McCracken, C., Pileggi, M., Brane, N., Delehanty, A., Day, T., Federico, A., Klaiman, C., Saulnier, C., Klin, A., & Wetherby, A. (2021). Early social communication development in infants with autism spectrum disorder. *Child Development.*, *92*(6), 2224–2234. https://doi.org/10.1111/cdev.13683

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Brown, D. A., Lamb, M. E., Lewis, C., Pipe, M.-E., Orbach, Y., & Wolfman, M. (2013). The NICHD Investigative Interview Protocol: An analogue study. *Journal of Experimental Psychology. Applied*, *19*(4), 367–382. https://doi.org/10.1037/a0035143

Brownwell, C. A., & Kopp, C. B. (2007). *Socioemotional development in the toddler years: Transitions & transformations*. The Guilford Press.

Brumariu, L. E. (2015). Parent–child attachment and emotion regulation. *New Directions for Child and Adolescent Development, 2015* (148), 31-45.

Bukatko, D., & Daehler, M. W. (1998). *Child development: A thematic approach.* Houghton Mifflin.

Cao, Y., Wang, H., Lv, Y., & Xie, D. (2023). The influence of children's emotional comprehension on peer conflict resolution strategies. *Frontiers in Psychology*, *14*, 1142373–1142373. https://doi.org/10.3389/fpsyg.2023.1142373

Carroll, J. J., & Steward, M. S. (1984). The role of cognitive development in children's understandings of their own feelings. *Child Development*, *55*(4), 1486-1492.

Chen, D. W. (2003). Preventing violence by promoting the development of competent conflict resolution skills: Exploring roles and responsibilities. *Early Childhood Education Journal, 30*(4), 203-208.

Chen, D. W., Fein, G. G., Killen, M., & Tam, H. (2001). Peer conflicts of preschool children: issues, resolution, incidence, and age-related patterns. *Early Education and Development*, *12*(4), 523-544.

Chen, Y., & Ren, W. (2020). Sociopragmatic competence in American and Chinese children's realization of apology and refusal. *Journal of Pragmatics, 164*, 27-39.

Cohen, J. (1992). A power primer. *Psychological Bulletin.*, *112*(1), 155–159. https://doi.org/10.1037//0033-2909.112.1.155

Cohen, A. D., Olshtain, E., & Rosenstein, D. S. (1986). Advanced EFL apologies: what remains to be learned? *International Journal of the Sociology of Language*, *1986*(62), 51–74. https://doi.org/10.1515/ijsl.1986.62.51

Cooley, J. L., Fite, P. J., Rubens, S. L., & Tunno, A. M. (2015). Peer victimization, depressive symptoms, and rule-breaking behavior in adolescence: The moderating role of peer social support. *Journal of Psychopathology and Behavioral Assessment*, *37*(3), 512–522. https://doi.org/10.1007/s10862-014-9473-7.

Copeland, M., Fisher, J. C., Moody, J., & Feinberg, M. E. (2018). Different kinds of lonely: Dimensions of isolation and substance use in adolescence. *Journal of Youth and Adolescence*, *47*(8), 1755–1770. https://doi.org/10.1007/s10964-018-0860-3

Crespo-Llado, M. M., Vanderwert, R., Roberti, E., & Geangu, E. (2018). Eight-month-old infants' behavioral responses to peers' emotions as related to the asymmetric frontal cortex activity. *Scientific Reports*, *8*(1), 17152–11. https://doi.org/10.1038/s41598-018-35219-4

Darby, B. W., & Schlenker, B. R. (1982). Children's reactions to apologies. *Journal of Personality and Social Psychology*, *43*(4), 742–753. https://doi.org/10.1037/0022-3514.43.4.742

Darby, B., & Schlenker, B. (1989). Children's reactions to transgressions: Effects of the actor's apology, reputation and remorse. *The British Journal of Social Psychology.*, *28*(4), 353-364.

Drell, M., & Jaswal, V. (2016). Making amends: Children's expectations about and responses to apologies. *Social Development*, *25*(4), 742-758.

Dweck, C. S. (2006). *Mindset: The new psychology of success*. Random house.

Ebesu Hubbard, A. S., Hendrickson, B., Fehrenbach, K. S., & Sur, J. (2013). Effects of timing and sincerity of an apology on satisfaction and changes in negative feelings during conflicts. *Western Journal of Communication*, *77*(3), 305-322

Eisenberg, N., Spinrad, T. L., & Knafo, A. (2015). Prosocial development. In M. Lamb & C. Garcia-Coll (Eds.) and R. M. Lerner (Vol. Ed.), *Handbook of child psychology and developmental science* (7th ed.), *Volume 3: Socioemotional processes*. Wiley.

Ely, R., & Gleason, J. (2006). I'm sorry I said that: Apologies in young children's discourse. *Journal of Child Language*, *33*(3), 599-620. doi:10.1017/S0305000906007446

Erens, B., Otgaar, H., Ruiter, C., Bragt, D., & Hershkowitz, I. (2022). The NICHD interview protocol used by Dutch child protection workers: Effects on interview style, children's reported information and susceptibility to suggestion. *Applied Cognitive Psychology*, *36*(1), 7–18. https://doi.org/10.1002/acp.3893

Fearon, R. P., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., Lapsley, A., & Roisman, G. I. (2010). The significance of insecure attachment and disorganization in the development of children's externalizing behavior: A meta-analytic study. *Child Development*, *81*(2), 435-456.

Fehr, R., Gelfand, M. J., & Nag, M. (2010). The road to forgiveness: A meta-analytic synthesis of its situational and dispositional correlates. *Psychological Bulletin*, *136*(5), 894–914. https://doi.org/10.1037/a0019993

Fernández-Capo, M., Fernández, S. R., Sanfeliu, M. G., Benito, J. G., & Worthington, E. L. (2017). Measuring Forgiveness: A Systematic Review. *European Psychologist, 22*(4), 247–262. https://doi.org/10.1027/1016-9040/a000303

Frantz, C. M., & Bennigson, C. (2005). Better late than early: The influence of timing on apology effectiveness. *Journal of Experimental Social Psychology*, *41*(2), 201-207.

Friedman, H. H. (2006). The power of remorse and apology. *Journal of College and Character*, *7*(1), 16-. https://doi.org/10.2202/1940-1639.1510

Fujisawa, K. K., Kutsukake, N., & Hasegawa, T. (2006). Peacemaking and consolation in Japanese preschoolers witnessing peer aggression. *Journal of Comparative Psychology (1983), 120*(1), 48-57.

Gadsden, V. L., Ford, M., & Breiner, H. (Eds.). (2016). *Parenting matters: Supporting parents of children ages 0-8*. The National Academies Press.

Girolametto, L., & Weitzman, E. (2007). Promoting peer interaction skills: Professional development for early childhood educators and preschool teachers. *Topics in Language Disorders.*, *27*(2), 93–110. https://doi.org/info:doi/

Gold, G. J., & Weiner, B. (2000). Remorse, Confession, Group Identity, and Expectancies About Repeating a Transgression. *Basic and Applied Social Psychology*, *22*(4), 291-300, DOI: 10.1207/S15324834BASP2204_3

Gopnik, A. (2016). *The gardener and the carpenter: what the new science of child development tells us about the relationship between parents and children* (First Edition.). Farrar, Straus and Giroux.

Gottlieb, G. (1991). Experiential canalization of behavioral development. *Developmental Psychology, 27*(1), 4-13.

Greenough, W. T., Black, J. E., & Wallace, C. S. (1987). Experience and brain development. *Child Development, 58,* 539-559.

Groh, A. M., Fearon, R. P., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., Steele, R. D., & Roisman, G. I. (2014). The significance of attachment security for children's social competence with peers: A meta-analytic study. *Attachment & Human Development, 16*(2), 103-136.

Groh, A. M., Fearon, R. M. P., IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & Roisman, G. I. (2017). Attachment in the early life course: Meta-analytic evidence for its role in socioemotional development. *Child Development Perspectives*, *11*(1), 70-76.

Gross, J. T., Stern, J. A., Brett, B. E., & Cassidy, J. (2017). The multifaceted nature of prosocial behavior in children: Links with attachment theory and research. *Social Development 26:*661–678. https://doi-org.ezp2.lib.umn.edu/10.1111/sode.12242

Haimovitz, K., & Dweck, C. S. (2017). The origins of children's growth and fixed mindsets: New research and a new proposal. Child development, 88(6), 1849-1859.

Hawker, D. S. J., & Boulton, M. J. (2000). Twenty years' research on peer victimization and psychosocial maladjustment: A meta-analytic review of cross-sectional studies. *Journal of Child Psychology and Psychiatry*, *41*(4), 441–455. https://doi.org/10.1111/1469-7610.00629

Hay, D. F. (2006). Yours and mine: Toddlers' talk about possessions with familiar peers. *British Journal of Developmental Psychology*, *24*(1), 39–52. https://doi.org/10.1348/026151005X68880

Hayes, A. F., & Krippendorff, K. (2007). Answering the Call for a Standard Reliability Measure for Coding Data. *Communication Methods and Measures*, *1*(1), 77–89. https://doi.org/10.1080/19312450709336664

Heller, O., Moran, M., Pitcho, S., Schwartz-Tayri, T. M., Jabbari, J., Shlomo, Y., & Grintein-Weiss, M. (2023). Home quarantines and cumulative risk exposure among young children: Isolation and maladaptation. *American Journal of Orthopsychiatry*, *93*(6), 504–515. https://doi.org/10.1037/ort0000696

Hornsey, M. J., Wohl, M. J. A., Harris, E. A., Okimoto, T. G., Thai, M., & Wenzel, M. (2020). Embodied remorse: Physical displays of remorse increase positive responses to public apologies, but have negligible effects on forgiveness. *Journal of Personality and Social Psychology*, *119*(2), 367–389. https://doi.org/10.1037/pspi0000208

Jonnatan, L., Seaton, C. L., Rush, K. L., Li, E. P. H., & Hasan, K. (2022). Mobile device usage before and during the COVID-19 Pandemic among rural and urban adults. *International Journal of Environmental Research and Public Health*, *19*(14), 8231-. https://doi.org/10.3390/ijerph19148231

Joshi, A. (2008). Conflict resolution between friends during middle childhood. *The Journal of Genetic Psychology, 169*(2), 133-148.

Julle-Danière, E., Whitehouse, J., Mielke, A., Vrij, A., Gustafsson, E., Micheletta, J., & Waller, B. M. (2020). Are there non-verbal signals of guilt? *PloS One*, *15*(4), e0231756–e0231756. https://doi.org/10.1371/journal.pone.0231756

Kampf, Z., & Blum-Kulka, S. (2007). Do children apologize to each other? Apology events in young Israeli peer discourse. *Journal of Politeness Research, 3*, 11-37.

Kapetanovic, S., Skoog, T. (2021). The role of the family's emotional climate in the links between parent-adolescent communication and adolescent psychosocial functioning. *Research on Child and Adolescent Psychopathology 49*, 141–154 (2021). https://doi.org/10.1007/s10802-020-00705-9

Kelley, D. L., & Waldron, V. R. (2005). An investigation of forgiveness-seeking communication and relational outcomes. *Communication Quarterly, 53*(3), 339–358. https://doi.org/10.1080/01463370500101097

Kılıç, A. O., Sari, E., Yucel, H., Oğuz, M. M., Polat, E., Acoglu, E. A., & Senel, S. (2019). Exposure to and use of mobile devices in children aged 1-60 months. *European Journal of Pediatrics.*, *178*(2), 221–227.

Kim, P. H. (2023). *How trust works: The science of how relationships are built, broken, and repaired* (First edition.). Flatiron Books.

Knapp, M. L., Hall, J. A., & Horgan, T. G. (2013). *Nonverbal communication in human interaction*. Cengage Learning.

Knapp, M. L., Hall, J. A., & Horgan, T. G. (2021). *Nonverbal communication in human interaction* (Ninth edition.). Kendall Hunt Publishing Company.

Kochanska, G., Casey, R., & Fukumoto, A. (1995). Toddlers' sensitivity to standard violations. *Child Development, 66*(3), 643-656.

Kochanska, G., Gross, J. N., Lin, M.-H., & Nichols, K. E. (2002). Guilt in young children: Development, determinants, and relations with a broader system of standards. *Child Development*, *73*(2), 461–482. https://doi.org/10.1111/1467-8624.00418

Korkmaz, B. (2011). Theory of mind and neurodevelopmental disorders of childhood. *Pediatric Research 69***,** 101–108. https://doi.org/10.1203/PDR.0b013e318212c177

Krippendorff, K. (2004). Reliability in content analysis: Some common misconceptions and recommendations. *Human communication research*, *30*(3), 411-433.

Krippendorff, K. (2008). Systematic and random disagreement and the reliability of nominal data. *Communication Methods and Measures*, *2*(4), 323–338. https://doi.org/10.1080/19312450802467134

Lamb, M. E. & La Rooy, D. (2021). Revised investigative interview: Version 2021. https://nichdprotocol.com/the-nichd-protocol/

Laursen, B., Finkelstein B. D., & Betts, N. (2001). A developmental meta-analysis of peer conflict resolution. *Developmental Review, 21(4)*, 423–449.

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.

Lawler-Row, K. A., Younger, J. W., Piferi, R. L., & Jones, W. H. (2006). The role of adult attachment style in forgiveness following an interpersonal offense. *Journal of Counseling and Development, 84(4)*, 493-502.

Lazare, A. (1995). Go ahead, say you're sorry. (psychological aspects of apologies). In *Psychology Today* (Vol. 28, Issue 1, pp. 40-43). Sussex Publishers, Inc.

Lazare, A. (2004). *On apology*. Oxford University Press.

Lazarus R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer, New York.

Lerner, R. M. (2006). Developmental science, developmental systems, and contemporary theories of human development. In Damon, W. & Lerner, R. M. *Handbook of* *child psychology: Vol. 1, Theoretical models of human development (6), 1–17)*. Hoboken, NJ: John Wiley & Sons.

Lerner, R. M., Agans, J. P., DeSouza, L. M., & Gasca, S. (2013). Describing, explaining, and optimizing within-individual change across the life span: A relational developmental systems perspective. *Review of General Psychology*, *17*(2), 179–183. https://doi.org/10.1037/a0032931

Lerner, R. M., Overton, W. F., & Molenaar, P. C. M. (2015). Processes, relations, and relational-developmental-systems. In *Handbook of child psychology and developmental science, theory and method*. John Wiley & Sons, Incorporated.

Lester, B. M. (1985). Introduction: There's more to crying than meets the ear. In *Infant Crying* (pp. 1–27). Springer US. https://doi.org/10.1007/978-1-4613-2381-5_1

Lewis, M., & Haviland-Jones, J. M. (2000). *Handbook of emotions.* Second Edition. The Guilford Press.

Lipton, M., & Nowicki, S. (2009). The social emotional learning framework (SELF): A guide for understanding brain-based social emotional learning impairments. *Journal of Developmental Processes*, *4*(2), 99-115.

Lovett, M. C., Bridges, M. W., DiPietro, M., Ambrose, S. A., & Norman, M. K. (2023). *How learning works: Eight research-based principles for smart teaching*. John Wiley & Sons.

Lunz Trujillo, K., Motta, M., Callaghan, T., & Sylvester, S. (2021). Correcting misperceptions about the MMR vaccine: Using psychological risk factors to inform targeted communication strategies. *Political Research Quarterly*, *74*(2), 464–478. https://doi.org/10.1177/1065912920907695

Ma, F., Wylie, B. E., Luo, X., He, Z., Xu, F., & Evans, A. D. (2018). Apologies repair children's trust: The mediating role of emotions. *Journal of Experimental Child Psychology, 176*, 1-12.

Macheta, K., Gut, A., & Pons, F. (2023). The link between emotion comprehension and cognitive perspective taking in theory of mind (ToM): a study of preschool children. *Frontiers in Psychology*, *14*, 1150959–1150959. https://doi.org/10.3389/fpsyg.2023.1150959

Maher, C., Hadfield, M., Hutchings, M., & de Eyto, A. (2018). Ensuring rigor in qualitative data analysis: A design research approach to coding combining NVivo with traditional material methods. *International Journal of Qualitative Methods*, *17*(1), 160940691878636-. https://doi.org/10.1177/1609406918786362

Mangione, C. M., Barry, M. J., Nicholson, W. K., Cabana, M., Coker, T. R., Davidson, K. W., Davis, E. M., Donahue, K. E., Jaén, C. R., Kubik, M., Li, L., Ogedegbe, G., Pbert, L., Ruiz, J. M., Silverstein, M., Stevermer, J., & Wong, J. B. (2022). Screening for anxiety in children and adolescents: US preventive services task force recommendation statement. *JAMA: The Journal of the American Medical Association*, *328*(14), 1438–1444. https://doi.org/10.1001/jama.2022.16936

Martingano, A. J., Hererra, F., & Konrath, S. (2021). Virtual Reality Improves Emotional but Not Cognitive Empathy: A Meta-Analysis. *Technology, Mind, and Behavior*, *2*(1). https://doi.org/10.1037/tmb0000034

McElroy, C. E., Kelsey, C. M., Oostenbroek, J., & Vaish, A. (2023). Beyond accidents: Young children's forgiveness of third-party intentional transgressors. *Journal of Experimental Child Psychology*, *228*, 105607–105607. https://doi.org/10.1016/j.jecp.2022.105607

McKown, C., Allen, A. M., Russo-Ponsaran, N. M., & Johnson, J. K. (2013). Direct assessment of children's social-emotional comprehension. *Psychological Assessment*, *25*(4), 1154–1166. https://doi.org/10.1037/a0033435

Meltzoff A. N. (1999). Origins of theory of mind, cognition and communication. *Journal of communication disorders*, *32*(4), 251–269. https://doi.org/10.1016/s0021-9924(99)00009-x

Metcalfe, J., & Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review*, *106*(1), 3–19. https://doi.org/10.1037/0033-295X.106.1.3

Mulvey, K. L., Gönültaş, S., Herry, E., & Strelan, P. (2022). The role of theory of mind, group membership, and apology in intergroup forgiveness among children and adolescents. *Journal of Experimental Psychology. General*, *151*(3), 613–627. https://doi.org/10.1037/xge0001094

Muris, P., Meesters, C., & van Asseldonk, M. (2018). Shame on me! Self-conscious emotions and big five personality traits and their relations to anxiety disorders symptoms in young, non-clinical adolescents. *Child Psychiatry and Human Development*, *49*(2), 268–278. https://doi.org/10.1007/s10578-017-0747-7

Murphy, B. C., & Eisenberg, N. (2002). An integrative examination of peer conflict: Children's reported goals, emotions, and behaviors. *Social Development (Oxford, England)*, *11*(4), 534–557. https://doi.org/10.1111/1467-9507.00214

Myrtil, M. J., Lin, T.-J., Chen, J., Purtell, K. M., Justice, L., Logan, J., & Hamilton, A. (2021). Pros and (con)flict: Using head-mounted cameras to identify teachers' roles in intervening in conflict among preschool children. *Early Childhood Research Quarterly*, *55*, 230–241. https://doi.org/10.1016/j.ecresq.2020.11.011

National Center for Education Statistics (2024). Enrollment rates of young children. *The Condition of Education*. U.S. Department of Education, Institute of Education Sciences. Retrieved February 3, 2024, from https://nces.ed.gov/programs/coe/indicator/cfa

Nobes, G., Panagiotaki, G., & Engelhardt, P. E. (2017). The development of intention-based morality: The influence of intention salience and recency, negligence, and outcome on children's and adults' judgments. *Developmental Psychology*, *53*(10), 1895–1911. https://doi.org/10.1037/dev0000380

Nussbaum, J. F., & Baringer, D. K. (2000). Message Production Across the Life Span: Communication and Aging. *Communication Theory*, *10*(2), 200–209. https://doi.org/10.1111/j.1468-2885.2000.tb00189.x

Ohbuchi, K., Kameda, M., & Agarie, N. (1989). Apology as Aggression Control: Its Role in Mediating Appraisal of and Response to Harm. *Journal of Personality and Social Psychology*, *56*(2), 219–227. https://doi.org/10.1037/0022-3514.56.2.219

Ohbuchi, K., & Sato, K. (1994). Children's reactions to mitigating accounts: Apologies, excuses, and intentionality of harm. *The Journal of Social Psychology, 134*(1), 5-17. DOI: 10.1080/00224545.1994.9710877

Okimoto, T. G., Wenzel, M., & Hornsey, M. J. (2015). Apologies demanded yet devalued: Normative dilution in the age of apology. *Journal of Experimental Social Psychology*, *60*, 133-136.

Olshtain E., Cohen A. (1983). Apology: A speech act set. *Sociolinguistics and language acquisition*, *18*, 35.

Oostenbroek, J., & Vaish, A. (2019). The emergence of forgiveness in young children. *Child Development*, *90*(6), 1969–1986. https://doi.org/10.1111/cdev.13069

Overton, W. F. (2007). A coherent metatheory for dynamic systems: Relational organicism-contextualism. *Human Development, 50*, 154–159.

Overton, W.F. (2010). Life-span development: Concepts and issues. In R.M. Lerner, M.E. Lamb, & A.M. Freund (Eds.), *The handbook of life-span development*. *Volume 2: Social and Emotional Development* (Vol. 2). John Wiley & Sons. https://doi.org/10.1002/9780470880166.hlsd001001

Overton, W. F. (2015). Processes, relations, and relational-developmental-systems. In W. F. Overton, P. C. M. Molenaar, & R. M. Lerner (Eds.), *Handbook of child psychology and developmental science: Theory and method* (7th ed., pp. 9–62). John Wiley & Sons, Inc.. https://doi.org/10.1002/9781118963418.childpsy102

Pallini, S., Chirumbolo, A., Morelli, M., Baiocco, R., Laghi, F., & Eisenberg, N. (2018). The Relation of Attachment Security Status to Effortful Self-Regulation: A Meta-

Analysis. *Psychological Bulletin, 144*(5), 501–531. https://doi.org/10.1037/bul0000134

Pecchioni, L. L., Wright, K. B., & Nussbaum, J. F. (2006). *Life-span communication*. Routledge.

Piaget, J. (1931). Children's philosophies. In C. Murchison (Ed.), *A handbook of child psychology* (pp. 377–391). Clark University Press. https://doi.org/10.1037/13524-011

Pietromonaco, P. R., & Powers, S. I. (2015). Attachment and Health-Related Physiological Stress Processes. *Current opinion in psychology*, *1*, 34–39. https://doi.org/10.1016/j.copsyc.2014.12.001

Preckel, K., Kanske, P., & Singer, T. (2018). On the interaction of social affect and cognition: Empathy, compassion and theory of mind. *Current Opinion in Behavioral Sciences, 19*, 1-6.

Reinhard, M.-A., & Sporer, S. L. (2008). Verbal and nonverbal behaviour as a basis for credibility attribution: The impact of task involvement and cognitive capacity. *Journal of Experimental Social Psychology*, *44*(3), 477–488. https://doi.org/10.1016/j.jesp.2007.07.012

Roberts, M. Y. (2019). Parent-implemented communication treatment for infants and toddlers with hearing loss: A randomized pilot trial. *Journal of Speech, Language, and Hearing Research*, *62*(1), 143–152. https://doi.org/10.1044/2018_JSLHR-L-18-0079

Roseth, C., Pellegrini, A., Dupuis, D., Bohn, C., Hickey, M., Hilk, C., & Peshkam, A. (2008). Teacher intervention and U.S. preschoolers' natural conflict resolution after aggressive competition. *Behaviour*, *145*(11), 1601–1626. https://doi.org/10.1163/156853908786131333

Ruiter, C., Otgaar, H., Serie, C. M. B., & Hombergh, M. E. A. (2016). *Het National Institute of Child Health and Human Development (NICHD) Protocol: Interview Handleiding [Interview Manual]*. Maastricht University.

Sabbagh, M. A., & Bowman, L. C. (2018). Theory of mind. *Stevens' handbook of experimental psychology and cognitive neuroscience*, *4*, 1-39.

Sabbagh, M. A., Xu, F., Carlson, S. M., Moses, L. J., & Lee, K. (2006). The development of executive functioning and theory of mind: A comparison of Chinese and US preschoolers. *Psychological science*, *17*(1), 74-81.

Salmivalli, C., & Isaacs, J. (2005). Prospective relations among victimization, rejection, friendlessness, and children's self-and peer-perceptions. *Child Development.*, *76(6),* 1161-1171.

Salvadori, E. A., Colonnesi, C., Vonk, H. S., Oort, F. J., & Aktar, E. (2021). Infant emotional mimicry of strangers: Associations with parent emotional mimicry, parent-infant mutual attention, and parent dispositional affective empathy. *International Journal of Environmental Research and Public Health*, *18*(2), 1–19. https://doi.org/10.3390/ijerph18020654

Santrock, J. W. (1997). *Life-span development* (6th ed.). Brown & Benchmark Publishers.

Santrock, J. W. (2020). *A topical approach to life-span development* (Tenth edition.). McGraw-Hill Education.

Schacter, H. L., Lessard, L. M., Kiperman, S., Bakth, F., Ehrhardt, A., & Uganski, J. (2021). Can friendships protect against the health consequences of peer victimization in adolescence? A systematic review. *School Mental Health*, *13*(3), 578–601. https://doi.org/10.1007/s12310-021-09417-x

Scherer, K. R. (2000). Emotions as episodes of subsystems synchronization driven by nonlinear appraisal processes. In M. D. Lewis & I. Granic (Eds.), Cambridge studies in social and emotional development. Emotion, development, and self-organization: Dynamic systems approaches to emotional development (pp. 70–99). Cambridge University Press. https://doi.org/10.1017/CBO9780511527883.005

Scherer, K. R. (2009a). The dynamic architecture of emotion: Evidence for the component process model. *Cognition and Emotion, 23*:7, 1307-1351, DOI: 10.1080/02699930902928969

Scherer K. R. (2009b). Emotions are emergent processes: they require a dynamic computational architecture. *Philosophical Transactions of the Royal Society of London. Series B, Biological sciences*, *364*(1535), 3459–3474. https://doi.org/10.1098/rstb.2009.0141

Schleien, S., Ross, H., & Ross, M. (2010). Young children's apologies to their siblings. *Social Development, 19*(1), 170-186.

Schneider, B., Atkinson, L., & Tardif, C. (2001). Child-parent attachment and children's peer relations: A quantitative review. *Developmental Psychology, 37*(1), 86-100.

Sebanc, A. M., Pierce, S. L., Cheatham, C. L., & Gunnar, M. R. (2003). Gendered social worlds in preschool: Dominance, peer acceptance and assertive social skills in boys’ and girls’ peer groups. *Social Development (Oxford, England)*, *12*(1), 91–106. https://doi.org/10.1111/1467-9507.00223

Seguin, M., & Roberts, B. (2017). Coping strategies among conflict-affected adults in low- and middle-income countries: A systematic literature review. *Global Public Health*, *12*(7), 811–829. https://doi.org/10.1080/17441692.2015.1107117

Sell, M., & Rice, M. (1988). Girls' excuses: Listener, severity of violation, and developmental effects. *Discourse Processes*, *11*(3), 357-371.

Shultz, S., Klin, A., & Jones, W. (2018). Neonatal transitions in social behavior and their implications for autism. *Trends in Cognitive Sciences.*, *22*(5), 452–469.

Shumaker, H. (2012). *It's OK Not to Share and Other Renegade Rules for Raising Competent and Compassionate Kids*. TarcherPerigee.

Shumaker, H., & Johnson, J. A. (Hosts). (2021-present). Renegade rules: Explorations in early learning. [Audio Podcast]. Apple Podcasts. https://podcasts.apple.com/us/podcast/renegade-rules/id1078223893

Skinner, E. A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin, 129*(2), 216–269. https://doi.org/10.1037/0033-2909.129.2.216

Smith, C. E., Chen, D., & Harris, P. L. (2010). When the happy victimizer says sorry: Children’s understanding of apology and emotion. *British Journal of Developmental Psychology, 28*, 727-746.

Smith, C. E., & Harris, P. L. (2011). He didn’t want me to feel sad: Children’s reactions to disappointment and apology. *Social Development*, *21*, 215-228.

Smith, L., & Thelen, E., (2003). Development as a dynamic system. *Trends in Cognitive Sciences, 7*(8), 343-348.

Socha, T. J., & Punyanunt-Carter, N. (2021). *Communication begins with children: A lifespan communication sourcebook: Vol. 8.* Peter Lang Publishing, Inc.

Spivak, A. (2016). Dynamics of young children's socially adaptive resolutions of peer conflict. *Social Development*, *25*(1), 212-231.

Spivak, A. L., & Farran, D. C. (2012). First-grade teacher behaviors and children’s prosocial actions in classrooms. *Early Education and Development*, *23*(5), 623–639. https://doi.org/10.1080/10409289.2011.566164

Spivak, A. L., & Farran, D. C. (2016). Predicting first graders’ social competence from their preschool classroom interpersonal context. *Early Education and Development*, *27*(6), 735–750. https://doi.org/10.1080/10409289.2016.1138825

Strayer, J., & Roberts, W. (1989). Children's empathy and role taking: Child and parental factors, and relations to prosocial behavior. *Journal of Applied Developmental Psychology*, *10*(2), 227-239.

Tamm, A., Tõugu, P., & Tulviste, T. (2014). The influence of individual and situational factors on children’s choice of a conflict management strategy. *Early Education and Development*, *25*(1), 93–109. https://doi.org/10.1080/10409289.2013.778164

Thorstenson, C. A., Pazda, A. D., & Lichtenfeld, S. (2020). Facial blushing influences perceived embarrassment and related social functional evaluations. *Cognition and Emotion*, *34*(3), 413–426. https://doi.org/10.1080/02699931.2019.1634004

Twenge, J. (2000). The age of anxiety? Birth cohort change in anxiety and neuroticism, 1952-1993. *Journal of Personality and Social Psychology*, *79*(6), 1007–1021. https://doi.org/10.1037//0022-3514.79.6.1007

Umezaki, T., Sakai, A., Maeshiro, K., & Murohashi, H. (2024). Longitudinal study on development of coping strategies for early childhood conflicts regarding object possession and related factors 1. *Japanese Psychological Research*. https://doi.org/10.1111/jpr.12499

Vaish, A., Carpenter, M., & Tomasello, M. (2011). Young children's responses to guilt displays. *Developmental Psychology, 47*(5), 1248–1262. https://doi.org/10.1037/a0024462

Verbeek, P., & de Waal, F. B. M. (2001). Peacemaking among preschool children. *Peace and Conflict*, *7*(1), 5–28. https://doi.org/10.1207/S15327949PAC0701_02

Veríssimo, M., Santos, A. J., Fernandes, C., Shin, N., & Vaughn, B. E. (2014). Associations between attachment security and social competence in preschool children. *Merrill-Palmer Quarterly (1982-), 60*(1), 80-99.

Waddington, O., Jensen, K., & Köymen, B. (2022). Boundaries of apologies: Children avoid transgressors who give the same apology for a repeat offense. *Cognitive Development*, *64*, 101264-. https://doi.org/10.1016/j.cogdev.2022.101264

Waddington, O., Proft, M., Jensen, K., & Köymen, B. (2023). Five-year-old children value reasons in apologies for belief-based accidents. *Child Development*, *94*(3), e143–e153. https://doi.org/10.1111/cdev.13893

Wang, Y., Palonen, T., Hurme, T. R., & Kinos, J. (2019). Do you want to play with me today? Friendship stability among preschool children. *European Early Childhood Education Research Journal*, *27*(2), 170–184. https://doi.org/10.1080/1350293X.2019.1579545

Watt, N., Wetherby, A. M., & Shumway, S. (2006). Prelinguistic predictors of language outcome at 3 years of age. *Journal of Speech, Language, and Hearing Research.*, *49*(6), 1224–1237.

Wellman, H. M., Cross, D., & Watson, J. (2001). Meta-analysis of theory-of-mind development: The truth about false belief. *Child Development*, *72*(3), 655-684.

Wellman, H. M., & Liu, D. (2004). Scaling of theory-of-mind tasks. *Child Development*, *75*(2), 523–541. https://doi.org/10.1111/j.1467-8624.2004.00691.x

Welsh, M., & Peterson, E. (2014). Issues in the conceptualization and assessment of hot executive functions in childhood. *Journal of the International Neuropsychological Society*, *20*(2), 152–156. https://doi.org/10.1017/S1355617713001379

Whitbourne, S. K. (2012). Life span development a six-unit lesson plan for high school psychology teachers. APA.org, accessed January 21st, 2024. https://www.apa.org/ed/precollege/topss/lessons/life-development.pdf

Yamamoto, K., Kimura, M., & Osaka, M. (2021). Sorry, not sorry: Effects of different types of apologies and self-monitoring on non-verbal behaviors. *Frontiers in Psychology*, *12*, 689615–689615. https://doi.org/10.3389/fpsyg.2021.689615

Yu, C. L., & Chou, T. L. (2018). A dual route model of empathy: A neurobiological prospective. *Frontiers in Psychology*, *9*. https://doi.org/10.3389/fpsyg.2018.02212

Yu, H., Duan, Y., & Zhou, X. (2017). Guilt in the eyes: Eye movement and physiological evidence for guilt-induced social avoidance. *Journal of Experimental Social Psychology*, *71*, 128-137.

Zimmer-Gembeck, M. J., Webb, H. J., Pepping, C. A., Swan, K., Merlo, O., Skinner, E. A.,...Dunbar, M. (2017). Is parent–child attachment a correlate of children's emotion regulation and coping? *International Journal of Behavioral Development*, *41*, 74–93. http://dx.doi.org/10.1177/0165025415618276

Zelazo, P., Muller, U., Frye, D., & Marcovitch, S. (2003). The development of executive function in early childhood. *Monographs of the Society for Research in Child Development*, *68*.

Appendices

Appendix A

IMPACT Apology Coding Frame

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****BEFORE you use this document, ALWAYS start by making a copy – you can start by renaming it IMPACT.AMorPM.ConflictNumber then add the rest later.*** You may need to give it a temporary name until you have determined the level of Adult Intervention. Once you have all of the needed information, please give your copy of this document a final name by writing out the following items with a "." between each item:

- The word "IMPACT."
- AM. or PM. ***THIS IS SO THAT THE FILES WILL SORT PROPERLY. You will still type the full conflict number next, which will also say AM or PM in between the date and the conflict's number.
- The full conflict number. (Found on your assignment sheet - the numerical month.date.year. of the observation day, EITHER AM or PM depending on which class was observed, followed by the conflict number for that day)
- the child participant numbers listed with the INITIAL TRANSGRESSOR number first, including an IT, T, V for transgressor or victim and U or M for unmasked or masked. If there were multiple transgressors or victims list them in order of Initial Transgressor, additional Transgressor, Initial Victim, additional Victim, etc. with transgressors listed before victims. (for example: 53ITU.60VU.).
- Finally, add an indicator to the end of the name which signifies the level of Adult Intervention (for example if there were no Adult Interventions (abbreviated as "AI") then you would type ".AI0" if the conflict is rated as having a level 2 Adult Intervention you would type ".AI2, etc.)

For example, *IMPACT.AM.03.01.2023.AM.001.54TU.60VM.AI1*

Once you have fully renamed your document, please delete these directions. REMEMBER working in the IMPACT drive is NOT the same as working in Google Docs - make sure you manually SAVE your document after each section, so you do not lose your work!!

Coder Name:

Conflict Number (date. AM or PM. ###)**:**

Video Files Used (separate file names with a “+”)**:**

CONFLICT INFORMATION

Conflict Location and Participant Information:

Item	Description of Item or Code Options	***Leave gray areas blank***	***Leave gray areas blank***	**Answer or Code** (For any item that does not have an entry, please enter a "0" in this column. For example, if there is no second victim enter "0")	Notes/Descriptions
CCDN	Conflict Coding Document Name: The title of this document, copied from its name. For example: *IMPACT.AM.03.01.2023.AM.001.54TU.60VM.AI1*				
CN	Conflict Number (date.AMorPM.###)				
CL	Conflict location. Enter a number based on the following options: 1 = Outside, 2 = Classroom, 3 = Hallway, 4 = Gym, 5 = Other				
MU	Mask Use. Enter a number based on the following options: 1 = None of the Child Participants wore a mask, 2 = Only Transgressor(s) wore a mask, 3 = Only Victim(s) wore a mask, 4 = a combination of both Transgressor(s) and Victim(s) were masked OR all Child Participants were masked, 5 = Could Not Determine				

CP1	Child Participant number 1: Initial Transgressor. Enter the Child Participant number of the initial transgressor followed by the letters ‘IT’ and an “M” or “U” for masked or unmasked. (for example, you would enter “53ITM” for participant #53, the initial transgressor, who was masked).				
CP2	Child Participant number 2: Primary Victim. Enter the Child Participant number of the primary victim followed by the letter “V” and an “M” or “U” for masked or unmasked. Ex.: 64VU				
CP3	Child Participant number 3: Enter additional Transgressors involved here. Label as Child Participant # followed by “T” followed by “M” or “U” for masked or unmasked. Ex.: 53TM				
CP4	Child Participant number 4: Enter additional Transgressors involved here. Label as Child Participant # followed by “T” followed by “M” or “U” for masked or unmasked. Ex.: 53TM				
CP5	Child Participant number 5: Enter additional Victims involved here. Label as Child Participant # followed by “V” followed by “M” or “U” for masked or unmasked. Ex.: 64VU				

CP6	Child Participant number 6: Enter additional Victims involved here. Label as Child Participant # followed by "V" followed by "M" or "U" for masked or unmasked. Ex.: 64VU				
ISPN1	Intervening Staff Participant Number 1: Enter the two-digit staff participant number for the first staff member who intervened first in the conflict. Ex. "05" **Please describe their intervention in the Notes column.				
ISPN2	Intervening Staff Participant Number 2: If a 2nd staff member intervened, enter the two-digit staff participant number for the 2nd staff member who intervened in the conflict. *Please describe their intervention in the Notes column.				
ISPN3	Intervening Staff Participant Number 3: If a 3rd staff member intervened, enter the two-digit staff participant number for the 3rd staff member who intervened in the conflict. *Please describe their intervention in the Notes column.				

ICP1	Intervening Child Participant Number 1: List the two-digit Child Participant Number for the first Child Participant who intervened who was not a transgressor or victim. *Please describe their intervention in the Notes column.				
ICP2	Intervening Child Participant Number 2: List the two-digit Child Participant Number for the second Child Participant who intervened who was not a transgressor or victim. *Please describe their intervention in the Notes column.				
ICP3	Intervening Child Participant Number 3: List the two-digit Child Participant Number for the third Child Participant who intervened who was not a transgressor or victim. *Please describe their intervention in the Notes column.				

Return to Play:

In order to determine a code for the Return to Play Time (RTP1) item in the next section, please fill out the following chart. Enter timestamps (in real-time) for the conflict interaction stages or enter a "0" if you typed an 'x' in the Could Not Determine or Did Not Occur column (some of these timestamps can be found on the Conflict Interaction Tracking Sheet but should be confirmed). **These times are estimates to help you calculate a Return to Play Time. Your entry for ToCT in this section should be used to help you determine a code for RTP1 in the next section.**

	Description	**Could Not Determine** (type “x”)	**Did Not Occur** (type “x”)	***Timestamp In REAL time*** **HH:MM:SS** (or enter “0” if this event did not occur or could not be determined)	**Description of what you observed:**
ToC1	Conflict Initiation (found on tracking sheet) *When there are two or more video files in which the conflict can be seen, list the conflict initiation time found on the FIRST video where the conflict was found and base all of your times off of that video.				
ToC2	Conflict Ends (conflict interaction ends, conflict is resolved, or Victim and Transgressor separate without resolution)				
ToC3	Play Resumes (child begins playing *near* (doing a similar activity or with similar items in the same area) or *with* conflict partner, this could even be later in the same play period) *This time can also be found on the conflict interaction tracking sheet (under “Children began to play with or next to their conflict partner again”) *If play does not resume during the same play period then enter an “x” in the Did Not Occur column and a “0” in the Timestamp column.				

ToCT	Time elapsed between Conflict Ends and Play Resumes (calculate the difference between the time for ToC2 and ToC3 and enter that amount of time in HH:MM:SS format in the timestamp column) *If play does not resume then enter a "0" in the Timestamp column.				

For the RTP1, enter a number for your response using these options, leave notes if needed:
0 = Transgressor and Victim did NOT return to play during this play period or activity
1 = Play did not stop for more than a very brief pause following conflict
2 = Play stopped following conflict but for less than one minute before Transgressor and Victim returned to play
3 = 1-2 minutes elapsed before Transgressor and Victim returned to play
4 = 2-3 minutes elapsed before Transgressor and Victim returned to play
5 = 3-5 minutes elapsed before Transgressor and Victim returned to play
6 = 5-10 minutes elapsed before Transgressor and Victim returned to play
7 = 10-15 minutes elapsed before Transgressor and Victim returned to play
8 = more than 15 minutes elapsed before Transgressor and Victim returned to play
9 = Could not be determined

Item	Description			Return to Play Code	Notes:
RTP1	Return to Play: Time elapsed between when the conflict ended and children returned to play. Based on options above.				

Adult Intervention:

For the next item, enter a number for your response using these options, then describe the intervention if there was one:

0 = No Adult Intervention
*1 = Minimal Adult Intervention (children are generally asked to “share,” “work together,” or “use their words” - ONE time) *This needs to be a generic suggestion, not a solution that is specific to the conflict.*
2 = Moderate Adult Intervention (children are generally asked to “share,” “work together,” or “use their words” TWO OR MORE times, without giving specific suggestions for a resolution - again these are general encouragements for children to work something out on their own - NOT a fix for this specific conflict)
3 = Significant Adult Intervention (adult words or actions directly influenced the conflict because adults suggested (or insisted on) a specific solution for the conflict (beyond just general suggestions like using their words or working together), an adult told a child to apologize or to share a specific resource, or they used their position of power in the classroom to tell a child that they could not ‘do’ what they were ‘doing,’ or physically separated the children)
4 = Could Not Determine the level of Intervention

Item	Description			Adult Intervention Code	Description of Intervention
AI1	Adult Intervention Code Based on options above.				

Peer Intervention:

For the next item, enter a number for your response using these option based on a peer intervening that was NOT a transgressor OR victim, then describe the intervention if there was one:

0 = No Peer Intervention

1 = A Peer (or peers) Intervened but their words or actions DID NOT resolve the conflict

2 = A Peer (or peers) Intervened and their words or action DID resolve the conflict

3 = Could Not Determine

Item	Description			Peer Intervention Code	Description of Intervention
PI1	Peer Intervention Code Based on options above.				

TYPES OF CONFLICT

Please fill out the coding charts below based on what you observed. Type an "X" in the Could Not Determine column if you could not see or hear something due to video quality or a physical angle or obstruction. Type an "X" in the Conflict Type Tracking column for EVERY time you observe a conflict type occurring (ex. "Xxxxxx" if a child hits another child six times). Then, fill out the Frequency Code column based on what you observed using the options provided. (NOTE: Enter a "0" in the Frequency Code column if you could not determine whether or not something happened OR if it was not observed.) EVERY BOX IN THE FREQUENCY COLUMN SHOULD HAVE A "0" OR a NUMBER when you are finished.

Transgressor Conflict Types:

Initial Transgressor's Participant Number	BRIEF Description of Transgressor (Visual: clothing, etc.)

Fill out the following information based on the INITIAL *TRANSGRESSOR'S* BEHAVIOR ONLY:

	Conflict Types Observed (Transgressor)	**Could Not Deter-mine** (Mark with an "X")	**Conflict Type Tracking** Mark an "X" for each time you observe a type of conflict here (type as many as needed: ex. Xxxx)	**Frequency Code:** 0 = no observed instances 1 = one observed instance 2 = two observed instances 3 = three or more observed instances	**Description of what you observed:**
TRC1	Relational Dispute: Participant refuses to share items				
TRC2	Relational Dispute: Participant refuses to play together. Participant turns away, ignores, or shuns another child wanting to join in play, someone says "you can't play with us" or responds "no" to someone asking to play.				

TRC3	Relational Dispute: Other				
TPC1	Physical Dispute (Intentional): Aggression. Hitting, grabbing an object directly from other's hands, destroying an object on purpose, hitting someone else with an object on purpose, pushing someone aggressively.				
TPC2	Physical Dispute (Intentional): Physical Contact. Blocking another person physically, moving someone else's hands, brushing or scooting someone out of the way (not an aggressive push), holding on to someone to keep them from moving.				
TPC3	Physical Dispute (Intentional): Dispute Over Resources. Participant takes, or tries to take, something from someone else by moving an object that was serving a purpose for someone else, or taking an object that another child was using but not holding at the time.				
TPC4	Physical Dispute (Intentional): Dispute Over Use of Space. Purposefully entering a space someone else considered or stated				

	was ‘theirs,’ or moving/changing things in a space that someone else has already established play rules in, this is done intentionally to change the use of the space because they act as if they think play should be different. *If they act as if they are trying to join in the type of play already occurring in the space then that is an unintentional physical dispute of space, mark below.				
TPC5	Physical Dispute (Unintentional): Physical Contact. Someone accidentally hits, bumps into, pushes, etc. another person, either with their hands/bodies or with an object – either way, accidental physical contact is made with the victim.				
TPC6	Physical Dispute (Unintentional): Dispute Over Resources. Someone accidentally took something they didn’t know another was using.				
TPC7	Physical Dispute (Unintentional): Dispute Over Use of Space. Someone started digging in a space they didn’t know was being used another way, thought they were ‘helping,’ invaded someone’s space without knowing it or entered, tried to take over, or				

	change, play in a space out of a desire to join in the play.				
TPC8	Physical Dispute: Other				
TVC1	Verbal Dispute: Aggression. Ex. “That’s dumb, you’re mean, you don’t know what you’re doing.”				
TVC2	Verbal Dispute: Dispute Over Resources. Disputing who should have what resources, ex. “I want that,” “that’s mine,” “I’m using that,” “you can’t have that.”				
TVC3	Verbal Dispute: Dispute Over Use of Space. Dispute over HOW play should happen in a space, they might say “this is a house not a garage,” “we are playing restaurant – I don’t want tools in here,” “you can’t be in here you aren’t a part of our family,” “we are playing cats you can’t be in here because you aren’t a cat” - this might simply be saying “no” or “you can’t do that” to an idea)				
TVC4	Verbal Dispute: Other				

TTC1	Total of the Transgressor's Frequency Code *column* for Conflict Types used:				

Initial Conflict Type:

				Initial Conflict Type	**Comments supporting why you choose this as the initial transgression:**
ICT1	Initial Conflict Type: Please indicate the type of conflict that initially started the conflict interaction (the initial transgression) by entering the Type of conflict label (found in blue to the left of the conflict type above) in the Initial Conflict Type column. (Ex, if the initial transgression was a Relational Dispute where a participant refuses to play together then the type of conflict label you would enter would be TRC2).				

Victim Conflict Types:

Initial Victim's Participant Number	**BRIEF Description of Victim (Visual: clothing, etc.)**

Fill out the following information based on the *VICTIM'S* OBSERVED CONFLICT TYPES:

	Conflict Types Observed (Victim)	**Could Not Deter-mine** (Mark with an "X")	**Conflict Type Tracking** Mark an "X" for each time you observe a type of conflict here (type as many as needed: ex. Xxxx)	**Frequency Code:** 0 = no observed instances 1 = one observed instance 2 = two observed instances 3 = three or more observed instances	**Description of what you observed:**
VRC1	Relational Dispute: Participant refuses to share items.				
VRC2	Relational Dispute: Participant refuses to play together. Participant turns away or shuns another wanting to join in play, someone says "you can't play with us" or responds "no" to someone asking to play.				
VRC3	Relational Dispute: Other				

VPC1	Physical Dispute (Intentional): Aggression. Ex. hitting, grabbing an object directly from other's hands, destroying an object on purpose, hitting someone else with an object on purpose, pushing someone aggressively.				
VPC2	Physical Dispute (Intentional): Physical Contact. Blocking another person physically, moving someone else's hands, brushing or scooting someone out of the way (not an aggressive push), holding on to someone to keep them from moving.				
VPC3	Physical Dispute (Intentional): Dispute Over Resources. Participant takes, or tries to take, something from someone else by moving an object that was serving a purpose for someone else, or taking an object that another child was using but not holding at the time.				
VPC4	Physical Dispute (Intentional): Dispute Over Use of Space. Purposefully entering a space someone else considered or stated was 'theirs,' or moving/changing things in a space that someone else has already established play rules in, this is				

	done intentionally to change the use of the space because they act as if they think play should be different. *If they act as if they are trying to join in the type of play already occurring in the space then that is an unintentional physical dispute of space, mark below.				
VPC5	Physical Dispute (Unintentional): Physical Contact. Someone accidentally hits, bumps into, pushes, etc. another person, either with their hands/bodies or with an object – either way, accidental physical contact is made with the victim.				
VPC6	Physical Dispute (Unintentional): Dispute Over Resources. Someone accidentally took something they didn't know another was using.				
VPC7	Physical Dispute (Unintentional): Dispute Over Use of Space. Started digging in a space they didn't know was being used another way, thought they were 'helping,' invaded someone's space without knowing it or entered, tried to take over, or change, play in a space out of a desire				

	to join in the play.				
VPC8	Physical Dispute: Other				
VVC1	Verbal Dispute: Aggression. Ex. “that’s dumb, you’re mean, you don’t know what you’re doing.”				
VVC2	Verbal Dispute: Dispute Over Resources. Disputing who should have what resources, ex. “I want that,” “that’s mine,” “I’m using that,” “you can’t have that.”				
VVC3	Verbal Dispute: Dispute Over Use of Space. Dispute over HOW play should happen in a space, they might say “this is a house not a garage,” “we are playing restaurant – I don’t want tools in here,” “you can’t be in here you aren’t a part of our family,” “we are playing cats you can’t be in here because you aren’t a cat” - this might simply be saying “no” or “you can’t do that” to an idea.				
VVC4	Verbal Dispute: Other				

TVCT1	Total of the Victim's Frequency Code *column* for Conflict Types used:				

STATE OF PLAY

Please indicate the nature of play prior to and following the conflict using these options:
0 = Not Playing *(participants were not playing together)*
1 = Cooperative Play *(participants were playing with each other, interactively, 'together play')*
2 = Parallel Play *(participants were playing next to each other in a similar way, ex. both playing in the sand table but not together, or both 'pretend planting' their own separate things in the dirt/garden, 'side-by-side play')*
3 = Could Not Determine

				State of Play Code	**Notes:**
SoP1	Initial State of Play: What was their state of play BEFORE the initial transgression triggered a conflict?				
SoP2	Post-Conflict State of Play: What was their state of play at the end of the conflict, within the first few seconds?				
SoP3	If they returned to play at a later time, what was their returned state of play? If they did not return to play again during the current activity time mark a '0'.				

INTENTION BEHIND CONFLICT

Victim's Perspective/Experience:

				Code	Description (Please describe the behaviors or observations that determined your coding decision)
VP1	Victim's Perspective: Based on the victim's behaviors and your observations following the initial transgression, did the victim behave as if they thought the initial transgression was intentional or unintentional? Answer options: 0 = Could Not Determine, 1 = Victim behaved as if they thought the initial transgression was intentional (on purpose), 2 = Victim behaved as if they thought the initial transgression was unintentional (an accident)				
VE1	Victim's Experience: Did it appear that the victim saw or (directly experienced/felt) the initial transgression? Answer options: 0 = Could Not Determine, 1 = Yes, 2 = No				

APOLOGY CODING - VERBAL

****Please note that Apology Coding is strictly evaluating the *initia*l transgressor's language and behavior.*****

****STOP and watch the conflict again before coding the next section.****

Verbal Apology Strategies:

Please fill out the coding charts below based on what you observed. Just as above, type an "X" in the Could Not Determine column if you could not see or hear something due to video quality or a physical angle or obstruction. Type an "X" in the Strategy Tracking column for EVERY time you observe a strategy (ex. "Xxxxxx" if a child says "sorry" six times). Then, fill out the Frequency Code column based on what you observed using the options provided. (NOTE: Enter a "0" in the Frequency Code column if you could not determine whether or not something happened OR if it was not observed.) EVERY BOX IN THE FREQUENCY COLUMN SHOULD HAVE A "0" OR a NUMBER when you are finished.

(Remember: EVERY BOX IN THE FREQUENCY CODE COLUMN SHOULD HAVE A "0" or a NUMBER)

	Verbal Apology Strategy *(Transgressor only)*	**Could Not Deter-mine** (Mark with an "X")	**Strategy Tracking** Mark an "X" for each time you observe a type of strategy here (type as many as needed: ex. Xxxx)	**Frequency Code:** 0 = no observed instances 1 = one observed instance 2 = two observed instances 3 = three or more observed instances	**Notes & Observations** (Please include words used when possible.)
VAS1	Apology - 'sorry'				
VAS2	Apology - 'excuse me'				
VAS3	Apology - 'forgive'				
VAS4	Apology - 'apologize'				
VAS5	Explanation - Specific ('the teacher told me to put it away,' 'I needed that piece,' 'I was doing X to help')				

VAS6	Explanation - Nonspecific (‘I wanted to play here’)				
VAS7	Responsibility - Implicit (‘I thought you were done’ or ‘I thought you weren't using…’)				
VAS8	Responsibility - Lack of Intent (‘I didn’t mean to…’)				
VAS9	Responsibility - Self-Deficiency (‘I can’t believe I did that’)				
VAS10	Responsibility - Self-Blame (‘it’s my fault’)				
VAS11	Repair - Specified (‘I’ll pick those up for you,’ ‘I’ll fix it’)				
VAS12	Repair - Unspecified (‘can I help?,’ ‘I’ll help you’)				
VAS13	Promise of Forbearance (‘I won’t do it again,’ ‘promise…’)				

VAS14	Other Apology Strategy				
TVAS1	Total of the Transgressor's Frequency Code column for Verbal Apology Strategies used:				

****STOP and watch the conflict again before coding the next section.****

Verbal Apology Modifications:

Please fill out this verbal apology modifications chart based on what you observed of the TRANSGRESSOR's language and behavior:

(Remember: EVERY BOX IN THE FREQUENCY CODE COLUMN SHOULD HAVE A "0" or a NUMBER)

	Verbal Apology Modification ***(Transgressor Only)***	**Could Not Deter-mine** (Mark with an "X")	**Modification Tracking** Mark an "X" for each time you observe a type of modification here (type as many as needed: ex. Xxxx)	**Frequency Code:** 0 = no observed instances 1 = one observed instance 2 = two observed instances 3 = three or more observed instances	**Notes & Observations** (Please include words used when possible.)
VAM1	Intensifier - 'really'				
VAM2	Intensifier - 'very'				
VAM3	Intensifier - 'so'				
VAM4	Intensifier - 'please'				
VAM5	Intensifier - 'terribly'				
VAM6	Intensifier - 'awfully'				

VAM7	Intensifier - ‘truly’				
VAM8	Minimizing Responsibility (‘I told you I was going to…,” “I said I wanted to…,” “the teacher said I could…,” “Someone told me to…”)				
VAM9	Denial of Responsibility - Denial of Fault (‘It’s not/wasn’t my fault,’ “I didn’t do it”)				
VAM10	Denial of Responsibility - Blaming hearer (‘It is/was your fault’)				
VAM11	Emotionals - Interjection (‘Oh,’ ‘Oops,’ ‘Oh man,’ ‘Oh my gosh,’ ‘my bad’ – suggesting that they (the transgressor) feels bad)				
VAM12	Emotionals - Invocation (‘God,’ ‘Jesus’)				
VAM13	Emotionals - Cursing (‘crap,’ ‘shoot,’ ‘dang-it,’ or worse)				
VAM14	Minimizing Offense (‘It’s okay,’ ‘no one				

	is hurt,' 'it's not a big deal')				
VAM15	Comments - About Self ('I usually…,' 'I am sad,' 'I' statements')				
VAM16	Comments - About Others ('Are you Okay?')				
VAM17	Comments - About Situation ('It looks okay,' 'thank goodness it's alright,' 'it will be okay')				
VAM18	Other Modifications				
TVAM1	Total of the Transgressor's Frequency Code column for Verbal Apology Modifications used:				

<u>Verbal Apology Elaboration Strategies:</u>

****IF* an apology word was used (ex. sorry, forgive, excuse, or apologize) code this next section, if not, you may enter a "0" for each box in the Frequency Code column.***

	Verbal Apology Elaboration Strategy	**Could Not Deter-mine** (Mark with an "X")	**Modification Tracking** Mark an "X" for each time you observe a strategy here (type as many as needed: ex. Xxxx)	**Frequency Code:** 0 = no observed instances 1 = one observed instance 2 = two observed instances 3 = three or more observed instances	**Notes & Observations** (Please include words used when possible.)
VAES1	Transgressor used an apology word AND a (first person) Personal Pronoun (*'I* am sorry,' or 'forgive *me*' - first singular personal pronouns are: "I" and "me")				
VAES2	Transgressor used an apology word AND Labeled the Transgression BUT DID NOT USE A FIRST PERSON PRONOUN ('sorry for ripping your paper,' 'sorry for taking the shovel' - no 'I' or 'me' used)				

VAES3	Transgressor used an Apology Word AND a Personal Pronoun AND Labeled the Transgression ('I'm sorry I took your scissors,' 'forgive me for hitting you')				
TVAES1	Total of the Transgressor's Frequency Code column for Apology Elaboration Strategies used:				

APOLOGY CODING - NONVERBAL

Please note: Nonverbal Apology Coding is strictly evaluating the initial *transgressor's* language & behavior.

****STOP and watch the conflict again before coding the next section.****

Nonverbal Apology Strategies:

Please fill out this nonverbal apology coding chart based on what you observed the TRANSGRESSOR doing:

(Remember: EVERY BOX IN THE FREQUENCY CODE COLUMN SHOULD HAVE A "0" or a NUMBER)

**If you CANNOT see the initial transgressor's face, then you CANNOT determine their Facial Cues or Gaze - Mark an "X" in the Could Not Determine Column for EVERY Facial Cue or Gaze Item if they cannot be seen.

	Nonverbal Apology Strategy **(Transgressor Only)**	**Could Not Deter-mine** (Mark with an	**Nonverbal Apology Tracking** Mark an "X" for each time you observe a	**Frequency Code:** 0 = no observed instances 1 = one observed instance	**Notes & Observations**

		“X”)	type of strategy here (type as many as needed: ex. Xxxx)	2 = two observed instances 3 = three or more observed instances	
NVAS1	Proximity - Leans Toward Victim				
NVAS2	Proximity - Moves Closer to Victim				
NVAS3	Haptics/Touch - Caring Touch				
NVAS4	Haptics/Touch - Hug				
NVAS5	Gesture - Fidgeting				
NVAS6	Gesture - Touches Neck				
NVAS7	Gesture - Stiffens Body				
NVAS8	Gesture - Head Turns Away				

NVAS9	Gesture - Head Shifts Down				
NVAS10	Gesture – Head Tilts toward Victim				
NVAS11	Facial Cues - Blushing				
NVAS12	Facial Cues - Frowning				
NVAS13	Facial Cues - Controlled Smile				
NVAS14	Facial Cues - Furrowed Brow				
NVAS15	Facial Cues - Eyes Well Up				
NVAS16	Gaze – Eyes Look Away				
NVAS17	Gaze – Eyes Look Down				
NVAS18	Gaze – Eyes try to Meet Victim's Gaze				
NVAS19	Gaze – Eye Holds Victim's Gaze (mutual gaze/eye contact)				

NVAS20	Vocalics - Tension (High pitch, nerves, concern)				
NVAS21	Vocalics - Remorse (Low pitch/quiet tone, or pitch drops with apology or expression of remorse)				
NVAS22	Vocalics - Sarcasm				
NVAS23	Vocalics - Crying				
TNVAS1	Total of the Transgressor's Frequency Code column for Nonverbal Apology Strategies used:				

FORGIVENESS CODING

Please note: Forgiveness Coding is strictly evaluating the *victim's* language & behavior.

****STOP and watch the conflict again before coding the next section.****

Forgiveness Markers:

Please fill out this Forgiveness Markers coding chart based on what you observed by evaluating the VICTIM's language and behavior. Code from the moment of the initial transgression through when they settle back into cooperative or parallel play (meaning they start new play together or both turn their attention to a parallel activity). If they do not return to play then just code through their interaction following the conflict. (Remember: EVERY BOX IN THE FREQUENCY CODE COLUMN SHOULD HAVE A "0" or a NUMBER.)

	Forgiveness Markers (Victim Only)	**Could Not Deter-mine** (Mark with an "X")	**Forgiveness Marker Tracking** Mark an "X" for each time you observe a marker here (type as many as needed: ex. Xxxx)	**Frequency Code:** 0 = no observed instances; 1 = one observed instance; 2 = two observed instances; 3 = three or more observed instances	**Notes & Observations**
FM1	Verbal Forgiveness ("forgive you")				
FM2	Verbal Reassurance of Situation or Transgression Ex. "That's okay," "It's Okay," "forget it"				
FM3	Verbal Reassurance of Personal State – Ex. "I'm alright," "I'm okay"				
FM4	Verbal Acknowledgement of accidental intention or lack of wrongdoing Ex. "oh," "uh-huh,"				

	"yeah," "you didn't mean it," a moment of realization or understanding and acknowledgment that the other didn't mean to transgress.				
FM5	Verbal Offers of Forgiveness: Inclusion. Ex, stating they can 'play together,' verbally offering 'do you want to use this' or stating 'we can play your way'				
FM6	Nonverbal Forgiveness - Sharing Resources				
FM7	Nonverbal Forgiveness – Physical. Ex. Touch, Smile, holding hands, hug or kind touch like patting				
FM8	Nonverbal Forgiveness – Playing Together. Return to or begin parallel play or cooperative play with each other.				
TFM1	Total of the Victim's Frequency Code column for Forgiveness Markers				

	used:				

Appendix B

Preschool Participant Interview Questions

Completed in person at the end of the study.

Introduction Script: *Hi! My name is Amy. I got to meet you a few times when I asked you to move around the pictures of the people in your class. What you think about things is very important to me and I was wondering if I could ask you a few questions today?*

Warm-up pre-questions:

A. *"What are some of your favorite things to do when you play at school?"*
  - *a)* Respond with: *"I can see why you like that!"* or similar.

B. *"What is your favorite thing to do at home?"*
  - *a)* Respond with: *"That is very cool!" "I see."* or similar.

Transition statement: *"Now I need to ask you some questions about apologizing."*

Apology Questions:

1) "*What do you think an apology is?*"
   - a) Possible prompt: *"It's okay if you don't know! What is your best guess?"*
   - b) *Explain: "An apology is when we let someone else know that we feel badly about something that we did or said."*

2) *"What do you think an apology means?"*
   - *a)* Possible prompt: *"It's okay if you don't know! What is your best guess about what it means to apologize?"*
   - b) ***If they respond with an answer that includes the word 'sorry," then ask question number 3, and skip question 4.
   - c) ***If their response does not include the word 'sorry' then skip question 3 and proceed to question 4.

3) *"Do you think that there are other ways to let someone know that you feel bad or that you are sorry?"*

4) *"Do you think that there are other ways to let someone know that _______________?"* ***Fill in the blank by repeating what the child respondent said they think an apology means in question 2.****

5) *"What do you do when you hurt someone, their things, or their feelings?"*

6) *"Who taught you about apologies?"*

    a) *"What did they teach you?"*

7) *"When someone hurts you, hurts something you are working on, or hurts your feelings, what kinds of things help make you feel better?"*

Closing Script: *Thank you so much for helping me with these questions! What you think about the world and feelings is very important to me and I'm glad you took the time to talk to me today.*

Appendix C

Parent Participant Survey Questions

1) It is pretty common for children to experience conflict with other children. Learning to resolve conflicts and repair relationships happens over time. What role do you see yourself having in helping your child repair their relationships after experiencing conflict?
2) When your child is trying to resolve a conflict in which they were the one who wronged the other child (examples might be that they fought over a toy, broke something, or hurt someone else), what do you expect them to do?
   a) If you intervene, what do you say or do?
3) Children in preschool are still learning to resolve conflicts, what are some things that your child does when they experience conflict? Please tell us about both positive responses to conflict and things that they do or say that may not fit adult ideals of how to resolve conflict.
4) Have you ever asked your child to verbally apologize to another child? [Yes] or [No]
   a) If yes, what do you say to them when you ask them to apologize?
   b) If no, why not?
5) Do you think there are other ways to apologize or show remorse than verbally apologizing (saying 'sorry')? [Yes] or [No]
   a) If yes, what other ways do you think they can apologize or show remorse?
   b) If no, please explain why you think so.
6) In your opinion, do you think that other ways of showing remorse are less effective, equally effective, or more effective than verbal apologies at repairing peer relationships?
   a) Why do you think this is the case?

   Demographic Questions:

   7) How would you describe your gender?

- Male
- Female

- Other (with a blank entry field for the participant to self-identify)
- Prefer not to answer

8) How would you describe the gender of your child?

- Male
- Female
- Other (with a blank entry field for the participant to self-identify)
- Prefer not to answer

9) What is your age?

- 16-24
- 25-34
- 35-44
- Over 50
- Prefer not to say

10) What is the age of your child?

11) Are there any other children living in your household? [ ] Yes [ ] No

a) If yes, please list the ages of the other children in your household?

12) How would you describe your ethnic background?

- White / Caucasian
- Asian - Eastern
- Asian - Indian
- Hispanic
- African-American
- Native-American
- Multiple Ethnicities
- Other (with a blank entry field for the participant to self-identify)
- I prefer not to say

13) How would you describe the ethnic background of your child participating in this study?

- White / Caucasian
- Asian - Eastern

- Asian - Indian
- Hispanic
- African-American
- Native-American
- Multiple Ethnicities
- Other (with blank entry field for the participant to self-identify)
- I prefer not to say

14) In what city do you currently live?

____

- I prefer not to say

15) What is the highest level of education that you have achieved?

- Master's degree or above
- Bachelor's degree
- Highschool
- Other (with a blank entry field for the participant to self-identify)
- I prefer not to say

16) What is your marital status?

- Married
- Divorced
- Separated
- Single
- I prefer not to say

17) What is your employment status?

- Full-time
- Part-time
- Contract/ Temporary
- Currently choosing to stay home and not work
- Unemployed
- Unable to work
- Other (with a blank entry field for the participant to self-identify)

- I prefer not to say

18) What is the level of your annual household income?

- Less than $25,000
- $25,000 - $50,000
- $50,000 - $100,000
- $100,000 - $200,000
- More than $200,000
- I prefer not to say

19) Is English the primary language spoken in your home? [ ] Yes [ ] No

   a) If not, what is the primary language spoken in your home?

   - Prefer not to say

Appendix D

Teacher/Staff Participant Survey Questions

Opening Written Statement: *Thank you for your willingness to complete this short survey on repairing relationships. This survey will take approximately 10 minutes of your time.*

Blank was provided for identifying information including the participant's name, job description, and classroom(s) that they work in at the CDLS.

1) How long have you been working at CDLS?
   a) How long have you been working with this particular group of children?
2) What are some examples of typical conflicts you notice among the children you work with?
3) What do you typically do when children are working through conflicts in your class?
4) If or when you intervene, what might you say to children who are trying to resolve a conflict?
5) How often do you ask children to verbally apologize to each other in your class? (Scaled response: 0 "never" to 5 "very frequently")
   a) If or when you've asked a child to apologize, what words might you say to prompt children to apologize?
   b) If you never or rarely ask children to apologize, what alternative language do you use to communicate how you might like children to resolve the conflict or repair the relationship?
6) I am interested in your opinions about verbal apologies and the nonverbal expressions of apology or remorse.
   a) Do you think children should verbally apologize to each other? [Yes] or [No]
      i) If yes, why?
      ii) If no, why not?
   b) Do you think there are other ways that children can show remorse besides a verbal apology? [Yes] or [No]

i) If yes, what are some examples of other ways you think children can show remorse besides a verbal apology?

c) Do you think other ways of communicating remorse or apology are less effective, equally effective, or more effective than verbal apologies at repairing peer relationships?

d) Why?

7) How would you describe your gender?

- Male
- Female
- Other (with a blank entry field for the participant to self-identify)
- Prefer not to answer

8) What is your age?

- 16-24
- 25-34
- 35-44
- Over 50
- Prefer not to say

9) How would you describe your ethnic background?

- White / Caucasian
- Asian - Eastern
- Asian - Indian
- Hispanic
- African-American
- Native-American
- Multiple Ethnicities
- Other (with a blank entry field for the participant to self-identify)
- I prefer not to say

10) In what city do you currently live?

- I prefer not to say

11) What is the highest level of education that you have achieved?

- Master’s degree or above
- Bachelor’s degree
- Highschool
- Other (with a blank entry field for the participant to self-identify)
- I prefer not to say

12) What is your employment status?

- Full-time
- Part-time
- Contract/ Temporary
- Other (with a blank entry field for the participant to self-identify)
- I prefer not to say

13) What is the level of your annual household income?

- Less than $25,000
- $25,000 - $50,000
- $50,000 - $100,000
- $100,000 - $200,000
- More than $200,000
- I prefer not to say

14) Is English your primary spoken language? [Yes] or [No]

    a) If not, what is your primary spoken language?

    - Prefer not to say

Appendix E

IMPACT Conflict Interaction Tracking Sheet

Observation Date:

Classroom:

Names of Video Files Relevant for Given Date	**Video Start Time** **(the time that the camera was turned on, use this to determine the timestamps below)**	1st Reviewer Name AND Date Completed (Ex. Amy Joyer / 03.28.23)	2nd Reviewer Name AND Date Completed (Ex. Amy Joyer / 03.28.23)

*Conflict numbers should be written as 001, 002, 003, etc.
**All Timestamps should be entered in HH:MM:SS AM/PM format (hour, mins, secs)
***Time on the video: the actual time into the video that the conflict begins.
Start of Conflict Timestamp - add the amount of time you are into the video when the conflict begins to the video start time found above.
****End of Conflict Timestamp - enter a time here if the conflict seems to be resolved and the children either continue, or go back to, playing with, or next to, each other.
*****End of Playtime Timestamp - enter a time here if the children who were in the conflict do not return to play with each other (either cooperative or parallel play) at any time during outside or inside play that day. (11:30:00 AM or 03:30:00 PM)
******Other Study ID numbers - This is for other participants in the conflict, such as other

children who are involved or adults who intervene.

Con-flict#	Video Files Where Con-flict is found	Conflict Start on the video Ex. 1:08:23 hr/min/sec into video	Start of Conflict Time-stamp (In real time, ex. 10:34:02 AM)	End of Con-flict Time-Stamp (In real time)	End of Play-time Time-Stamp (In real time)	Trans gress-or Study ID	Victim Study ID	Other Study ID #s	BRIEF Description of Con-flict

Appendix F

Multiple Comparisons

Dependent Variable: Nonverbal Strategy Frequency

Tukey HSD

(I) Nonverbal Strategy Type	(J) Nonverbal Strategy Type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
NVAS1	NVAS2	-.371	.152	.699	-.92	.18
	NVAS3	.162	.152	1.000	-.39	.71
	NVAS4	.171	.152	1.000	-.38	.72
	NVAS5	-.190	.152	1.000	-.74	.36
	NVAS6	.171	.152	1.000	-.38	.72
	NVAS7	.181	.152	1.000	-.37	.73
	NVAS8	-.771*	.152	<.001	-1.32	-.22
	NVAS9	-1.552*	.152	<.001	-2.10	-1.00
	NVAS10	-.010	.152	1.000	-.56	.54
	NVAS11	.152	.152	1.000	-.40	.70
	NVAS12	.067	.152	1.000	-.48	.62
	NVAS13	.152	.152	1.000	-.40	.70
	NVAS14	.133	.152	1.000	-.42	.68
	NVAS15	.181	.152	1.000	-.37	.73
	NVAS16	-.733*	.152	<.001	-1.28	-.18

	NVAS17	-1.343*	.152	<.001	-1.89	-.79
	NVAS18	.067	.152	1.000	-.48	.62
	NVAS19	.171	.152	1.000	-.38	.72
	NVAS20	-.638*	.152	.006	-1.19	-.09
	NVAS21	-.210	.152	.999	-.76	.34
	NVAS22	.181	.152	1.000	-.37	.73
	NVAS23	.171	.152	1.000	-.38	.72
NVAS2	NVAS1	.371	.152	.699	-.18	.92
	NVAS3	.533	.152	.072	-.02	1.08
	NVAS4	.543	.152	.059	-.01	1.09
	NVAS5	.181	.152	1.000	-.37	.73
	NVAS6	.543	.152	.059	-.01	1.09
	NVAS7	.552*	.152	.048	.00	1.10
	NVAS8	-.400	.152	.552	-.95	.15
	NVAS9	-1.181*	.152	<.001	-1.73	-.63
	NVAS10	.362	.152	.745	-.19	.91
	NVAS11	.524	.152	.087	-.03	1.07
	NVAS12	.438	.152	.359	-.11	.99
	NVAS13	.524	.152	.087	-.03	1.07
	NVAS14	.505	.152	.126	-.05	1.06
	NVAS15	.552*	.152	.048	.00	1.10
	NVAS16	-.362	.152	.745	-.91	.19
	NVAS17	-.971*	.152	<.001	-1.52	-.42

	NVAS18	.438	.152	.359	-.11	.99
	NVAS19	.543	.152	.059	-.01	1.09
	NVAS20	-.267	.152	.985	-.82	.28
	NVAS21	.162	.152	1.000	-.39	.71
	NVAS22	.552*	.152	.048	.00	1.10
	NVAS23	.543	.152	.059	-.01	1.09
NVAS3	NVAS1	-.162	.152	1.000	-.71	.39
	NVAS2	-.533	.152	.072	-1.08	.02
	NVAS4	.010	.152	1.000	-.54	.56
	NVAS5	-.352	.152	.787	-.90	.20
	NVAS6	.010	.152	1.000	-.54	.56
	NVAS7	.019	.152	1.000	-.53	.57
	NVAS8	-.933*	.152	<.001	-1.48	-.38
	NVAS9	-1.714*	.152	<.001	-2.26	-1.16
	NVAS10	-.171	.152	1.000	-.72	.38
	NVAS11	-.010	.152	1.000	-.56	.54
	NVAS12	-.095	.152	1.000	-.65	.46
	NVAS13	-.010	.152	1.000	-.56	.54
	NVAS14	-.029	.152	1.000	-.58	.52
	NVAS15	.019	.152	1.000	-.53	.57
	NVAS16	-.895*	.152	<.001	-1.45	-.34
	NVAS17	-1.505*	.152	<.001	-2.06	-.95
	NVAS18	-.095	.152	1.000	-.65	.46

	NVAS19	.010	.152	1.000	-.54	.56
	NVAS20	-.800*	.152	<.001	-1.35	-.25
	NVAS21	-.371	.152	.699	-.92	.18
	NVAS22	.019	.152	1.000	-.53	.57
	NVAS23	.010	.152	1.000	-.54	.56
NVAS4	NVAS1	-.171	.152	1.000	-.72	.38
	NVAS2	-.543	.152	.059	-1.09	.01
	NVAS3	-.010	.152	1.000	-.56	.54
	NVAS5	-.362	.152	.745	-.91	.19
	NVAS6	.000	.152	1.000	-.55	.55
	NVAS7	.010	.152	1.000	-.54	.56
	NVAS8	-.943*	.152	<.001	-1.49	-.39
	NVAS9	-1.724*	.152	<.001	-2.27	-1.17
	NVAS10	-.181	.152	1.000	-.73	.37
	NVAS11	-.019	.152	1.000	-.57	.53
	NVAS12	-.105	.152	1.000	-.66	.45
	NVAS13	-.019	.152	1.000	-.57	.53
	NVAS14	-.038	.152	1.000	-.59	.51
	NVAS15	.010	.152	1.000	-.54	.56
	NVAS16	-.905*	.152	<.001	-1.46	-.35
	NVAS17	-1.514*	.152	<.001	-2.06	-.96
	NVAS18	-.105	.152	1.000	-.66	.45
	NVAS19	.000	.152	1.000	-.55	.55

	NVAS20	-.810*	.152	<.001	-1.36	-.26
	NVAS21	-.381	.152	.652	-.93	.17
	NVAS22	.010	.152	1.000	-.54	.56
	NVAS23	.000	.152	1.000	-.55	.55
NVAS5	NVAS1	.190	.152	1.000	-.36	.74
	NVAS2	-.181	.152	1.000	-.73	.37
	NVAS3	.352	.152	.787	-.20	.90
	NVAS4	.362	.152	.745	-.19	.91
	NVAS6	.362	.152	.745	-.19	.91
	NVAS7	.371	.152	.699	-.18	.92
	NVAS8	-.581*	.152	.025	-1.13	-.03
	NVAS9	-1.362*	.152	<.001	-1.91	-.81
	NVAS10	.181	.152	1.000	-.37	.73
	NVAS11	.343	.152	.826	-.21	.89
	NVAS12	.257	.152	.991	-.29	.81
	NVAS13	.343	.152	.826	-.21	.89
	NVAS14	.324	.152	.890	-.23	.87
	NVAS15	.371	.152	.699	-.18	.92
	NVAS16	-.543	.152	.059	-1.09	.01
	NVAS17	-1.152*	.152	<.001	-1.70	-.60
	NVAS18	.257	.152	.991	-.29	.81
	NVAS19	.362	.152	.745	-.19	.91
	NVAS20	-.448	.152	.316	-1.00	.10

	NVAS21	-.019	.152	1.000	-.57	.53
	NVAS22	.371	.152	.699	-.18	.92
	NVAS23	.362	.152	.745	-.19	.91
NVAS6	NVAS1	-.171	.152	1.000	-.72	.38
	NVAS2	-.543	.152	.059	-1.09	.01
	NVAS3	-.010	.152	1.000	-.56	.54
	NVAS4	.000	.152	1.000	-.55	.55
	NVAS5	-.362	.152	.745	-.91	.19
	NVAS7	.010	.152	1.000	-.54	.56
	NVAS8	-.943*	.152	<.001	-1.49	-.39
	NVAS9	-1.724*	.152	<.001	-2.27	-1.17
	NVAS10	-.181	.152	1.000	-.73	.37
	NVAS11	-.019	.152	1.000	-.57	.53
	NVAS12	-.105	.152	1.000	-.66	.45
	NVAS13	-.019	.152	1.000	-.57	.53
	NVAS14	-.038	.152	1.000	-.59	.51
	NVAS15	.010	.152	1.000	-.54	.56
	NVAS16	-.905*	.152	<.001	-1.46	-.35
	NVAS17	-1.514*	.152	<.001	-2.06	-.96
	NVAS18	-.105	.152	1.000	-.66	.45
	NVAS19	.000	.152	1.000	-.55	.55
	NVAS20	-.810*	.152	<.001	-1.36	-.26
	NVAS21	-.381	.152	.652	-.93	.17

	NVAS22	.010	.152	1.000	-.54	.56
	NVAS23	.000	.152	1.000	-.55	.55
NVAS7	NVAS1	-.181	.152	1.000	-.73	.37
	NVAS2	-.552*	.152	.048	-1.10	.00
	NVAS3	-.019	.152	1.000	-.57	.53
	NVAS4	-.010	.152	1.000	-.56	.54
	NVAS5	-.371	.152	.699	-.92	.18
	NVAS6	-.010	.152	1.000	-.56	.54
	NVAS8	-.952*	.152	<.001	-1.50	-.40
	NVAS9	-1.733*	.152	<.001	-2.28	-1.18
	NVAS10	-.190	.152	1.000	-.74	.36
	NVAS11	-.029	.152	1.000	-.58	.52
	NVAS12	-.114	.152	1.000	-.66	.44
	NVAS13	-.029	.152	1.000	-.58	.52
	NVAS14	-.048	.152	1.000	-.60	.50
	NVAS15	.000	.152	1.000	-.55	.55
	NVAS16	-.914*	.152	<.001	-1.46	-.36
	NVAS17	-1.524*	.152	<.001	-2.07	-.97
	NVAS18	-.114	.152	1.000	-.66	.44
	NVAS19	-.010	.152	1.000	-.56	.54
	NVAS20	-.819*	.152	<.001	-1.37	-.27
	NVAS21	-.390	.152	.602	-.94	.16
	NVAS22	.000	.152	1.000	-.55	.55

	NVAS23	-.010	.152	1.000	-.56	.54
NVAS8	NVAS1	.771*	.152	<.001	.22	1.32
	NVAS2	.400	.152	.552	-.15	.95
	NVAS3	.933*	.152	<.001	.38	1.48
	NVAS4	.943*	.152	<.001	.39	1.49
	NVAS5	.581*	.152	.025	.03	1.13
	NVAS6	.943*	.152	<.001	.39	1.49
	NVAS7	.952*	.152	<.001	.40	1.50
	NVAS9	-.781*	.152	<.001	-1.33	-.23
	NVAS10	.762*	.152	<.001	.21	1.31
	NVAS11	.924*	.152	<.001	.37	1.47
	NVAS12	.838*	.152	<.001	.29	1.39
	NVAS13	.924*	.152	<.001	.37	1.47
	NVAS14	.905*	.152	<.001	.35	1.46
	NVAS15	.952*	.152	<.001	.40	1.50
	NVAS16	.038	.152	1.000	-.51	.59
	NVAS17	-.571*	.152	.031	-1.12	-.02
	NVAS18	.838*	.152	<.001	.29	1.39
	NVAS19	.943*	.152	<.001	.39	1.49
	NVAS20	.133	.152	1.000	-.42	.68
	NVAS21	.562*	.152	.039	.01	1.11
	NVAS22	.952*	.152	<.001	.40	1.50
	NVAS23	.943*	.152	<.001	.39	1.49

NVAS9	NVAS1	1.552*	.152	<.001	1.00	2.10
	NVAS2	1.181*	.152	<.001	.63	1.73
	NVAS3	1.714*	.152	<.001	1.16	2.26
	NVAS4	1.724*	.152	<.001	1.17	2.27
	NVAS5	1.362*	.152	<.001	.81	1.91
	NVAS6	1.724*	.152	<.001	1.17	2.27
	NVAS7	1.733*	.152	<.001	1.18	2.28
	NVAS8	.781*	.152	<.001	.23	1.33
	NVAS10	1.543*	.152	<.001	.99	2.09
	NVAS11	1.705*	.152	<.001	1.15	2.26
	NVAS12	1.619*	.152	<.001	1.07	2.17
	NVAS13	1.705*	.152	<.001	1.15	2.26
	NVAS14	1.686*	.152	<.001	1.14	2.24
	NVAS15	1.733*	.152	<.001	1.18	2.28
	NVAS16	.819*	.152	<.001	.27	1.37
	NVAS17	.210	.152	.999	-.34	.76
	NVAS18	1.619*	.152	<.001	1.07	2.17
	NVAS19	1.724*	.152	<.001	1.17	2.27
	NVAS20	.914*	.152	<.001	.36	1.46
	NVAS21	1.343*	.152	<.001	.79	1.89
	NVAS22	1.733*	.152	<.001	1.18	2.28
	NVAS23	1.724*	.152	<.001	1.17	2.27
NVAS10	NVAS1	.010	.152	1.000	-.54	.56

	NVAS2	-.362	.152	.745	-.91	.19
	NVAS3	.171	.152	1.000	-.38	.72
	NVAS4	.181	.152	1.000	-.37	.73
	NVAS5	-.181	.152	1.000	-.73	.37
	NVAS6	.181	.152	1.000	-.37	.73
	NVAS7	.190	.152	1.000	-.36	.74
	NVAS8	-.762*	.152	<.001	-1.31	-.21
	NVAS9	-1.543*	.152	<.001	-2.09	-.99
	NVAS11	.162	.152	1.000	-.39	.71
	NVAS12	.076	.152	1.000	-.47	.63
	NVAS13	.162	.152	1.000	-.39	.71
	NVAS14	.143	.152	1.000	-.41	.69
	NVAS15	.190	.152	1.000	-.36	.74
	NVAS16	-.724*	.152	<.001	-1.27	-.17
	NVAS17	-1.333*	.152	<.001	-1.88	-.78
	NVAS18	.076	.152	1.000	-.47	.63
	NVAS19	.181	.152	1.000	-.37	.73
	NVAS20	-.629*	.152	.008	-1.18	-.08
	NVAS21	-.200	.152	1.000	-.75	.35
	NVAS22	.190	.152	1.000	-.36	.74
	NVAS23	.181	.152	1.000	-.37	.73
NVAS11	NVAS1	-.152	.152	1.000	-.70	.40
	NVAS2	-.524	.152	.087	-1.07	.03

	NVAS3	.010	.152	1.000	-.54	.56
	NVAS4	.019	.152	1.000	-.53	.57
	NVAS5	-.343	.152	.826	-.89	.21
	NVAS6	.019	.152	1.000	-.53	.57
	NVAS7	.029	.152	1.000	-.52	.58
	NVAS8	-.924*	.152	<.001	-1.47	-.37
	NVAS9	-1.705*	.152	<.001	-2.26	-1.15
	NVAS10	-.162	.152	1.000	-.71	.39
	NVAS12	-.086	.152	1.000	-.64	.46
	NVAS13	.000	.152	1.000	-.55	.55
	NVAS14	-.019	.152	1.000	-.57	.53
	NVAS15	.029	.152	1.000	-.52	.58
	NVAS16	-.886*	.152	<.001	-1.44	-.34
	NVAS17	-1.495*	.152	<.001	-2.05	-.94
	NVAS18	-.086	.152	1.000	-.64	.46
	NVAS19	.019	.152	1.000	-.53	.57
	NVAS20	-.790*	.152	<.001	-1.34	-.24
	NVAS21	-.362	.152	.745	-.91	.19
	NVAS22	.029	.152	1.000	-.52	.58
	NVAS23	.019	.152	1.000	-.53	.57
NVAS12	NVAS1	-.067	.152	1.000	-.62	.48
	NVAS2	-.438	.152	.359	-.99	.11
	NVAS3	.095	.152	1.000	-.46	.65

	NVAS4	.105	.152	1.000	-.45	.66
	NVAS5	-.257	.152	.991	-.81	.29
	NVAS6	.105	.152	1.000	-.45	.66
	NVAS7	.114	.152	1.000	-.44	.66
	NVAS8	-.838*	.152	<.001	-1.39	-.29
	NVAS9	-1.619*	.152	<.001	-2.17	-1.07
	NVAS10	-.076	.152	1.000	-.63	.47
	NVAS11	.086	.152	1.000	-.46	.64
	NVAS13	.086	.152	1.000	-.46	.64
	NVAS14	.067	.152	1.000	-.48	.62
	NVAS15	.114	.152	1.000	-.44	.66
	NVAS16	-.800*	.152	<.001	-1.35	-.25
	NVAS17	-1.410*	.152	<.001	-1.96	-.86
	NVAS18	.000	.152	1.000	-.55	.55
	NVAS19	.105	.152	1.000	-.45	.66
	NVAS20	-.705*	.152	<.001	-1.26	-.15
	NVAS21	-.276	.152	.978	-.83	.27
	NVAS22	.114	.152	1.000	-.44	.66
	NVAS23	.105	.152	1.000	-.45	.66
NVAS13	NVAS1	-.152	.152	1.000	-.70	.40
	NVAS2	-.524	.152	.087	-1.07	.03
	NVAS3	.010	.152	1.000	-.54	.56
	NVAS4	.019	.152	1.000	-.53	.57

	NVAS5	-.343	.152	.826	-.89	.21
	NVAS6	.019	.152	1.000	-.53	.57
	NVAS7	.029	.152	1.000	-.52	.58
	NVAS8	-.924*	.152	<.001	-1.47	-.37
	NVAS9	-1.705*	.152	<.001	-2.26	-1.15
	NVAS10	-.162	.152	1.000	-.71	.39
	NVAS11	.000	.152	1.000	-.55	.55
	NVAS12	-.086	.152	1.000	-.64	.46
	NVAS14	-.019	.152	1.000	-.57	.53
	NVAS15	.029	.152	1.000	-.52	.58
	NVAS16	-.886*	.152	<.001	-1.44	-.34
	NVAS17	-1.495*	.152	<.001	-2.05	-.94
	NVAS18	-.086	.152	1.000	-.64	.46
	NVAS19	.019	.152	1.000	-.53	.57
	NVAS20	-.790*	.152	<.001	-1.34	-.24
	NVAS21	-.362	.152	.745	-.91	.19
	NVAS22	.029	.152	1.000	-.52	.58
	NVAS23	.019	.152	1.000	-.53	.57
NVAS14	NVAS1	-.133	.152	1.000	-.68	.42
	NVAS2	-.505	.152	.126	-1.06	.05
	NVAS3	.029	.152	1.000	-.52	.58
	NVAS4	.038	.152	1.000	-.51	.59
	NVAS5	-.324	.152	.890	-.87	.23

	NVAS6	.038	.152	1.000	-.51	.59
	NVAS7	.048	.152	1.000	-.50	.60
	NVAS8	-.905*	.152	<.001	-1.46	-.35
	NVAS9	-1.686*	.152	<.001	-2.24	-1.14
	NVAS10	-.143	.152	1.000	-.69	.41
	NVAS11	.019	.152	1.000	-.53	.57
	NVAS12	-.067	.152	1.000	-.62	.48
	NVAS13	.019	.152	1.000	-.53	.57
	NVAS15	.048	.152	1.000	-.50	.60
	NVAS16	-.867*	.152	<.001	-1.42	-.32
	NVAS17	-1.476*	.152	<.001	-2.03	-.93
	NVAS18	-.067	.152	1.000	-.62	.48
	NVAS19	.038	.152	1.000	-.51	.59
	NVAS20	-.771*	.152	<.001	-1.32	-.22
	NVAS21	-.343	.152	.826	-.89	.21
	NVAS22	.048	.152	1.000	-.50	.60
	NVAS23	.038	.152	1.000	-.51	.59
NVAS15	NVAS1	-.181	.152	1.000	-.73	.37
	NVAS2	-.552*	.152	.048	-1.10	.00
	NVAS3	-.019	.152	1.000	-.57	.53
	NVAS4	-.010	.152	1.000	-.56	.54
	NVAS5	-.371	.152	.699	-.92	.18
	NVAS6	-.010	.152	1.000	-.56	.54

	NVAS7	.000	.152	1.000	-.55	.55
	NVAS8	-.952*	.152	<.001	-1.50	-.40
	NVAS9	-1.733*	.152	<.001	-2.28	-1.18
	NVAS10	-.190	.152	1.000	-.74	.36
	NVAS11	-.029	.152	1.000	-.58	.52
	NVAS12	-.114	.152	1.000	-.66	.44
	NVAS13	-.029	.152	1.000	-.58	.52
	NVAS14	-.048	.152	1.000	-.60	.50
	NVAS16	-.914*	.152	<.001	-1.46	-.36
	NVAS17	-1.524*	.152	<.001	-2.07	-.97
	NVAS18	-.114	.152	1.000	-.66	.44
	NVAS19	-.010	.152	1.000	-.56	.54
	NVAS20	-.819*	.152	<.001	-1.37	-.27
	NVAS21	-.390	.152	.602	-.94	.16
	NVAS22	.000	.152	1.000	-.55	.55
	NVAS23	-.010	.152	1.000	-.56	.54
NVAS16	NVAS1	.733*	.152	<.001	.18	1.28
	NVAS2	.362	.152	.745	-.19	.91
	NVAS3	.895*	.152	<.001	.34	1.45
	NVAS4	.905*	.152	<.001	.35	1.46
	NVAS5	.543	.152	.059	-.01	1.09
	NVAS6	.905*	.152	<.001	.35	1.46
	NVAS7	.914*	.152	<.001	.36	1.46

	NVAS8	-.038	.152	1.000	-.59	.51
	NVAS9	-.819*	.152	<.001	-1.37	-.27
	NVAS10	.724*	.152	<.001	.17	1.27
	NVAS11	.886*	.152	<.001	.34	1.44
	NVAS12	.800*	.152	<.001	.25	1.35
	NVAS13	.886*	.152	<.001	.34	1.44
	NVAS14	.867*	.152	<.001	.32	1.42
	NVAS15	.914*	.152	<.001	.36	1.46
	NVAS17	-.610*	.152	.013	-1.16	-.06
	NVAS18	.800*	.152	<.001	.25	1.35
	NVAS19	.905*	.152	<.001	.35	1.46
	NVAS20	.095	.152	1.000	-.46	.65
	NVAS21	.524	.152	.087	-.03	1.07
	NVAS22	.914*	.152	<.001	.36	1.46
	NVAS23	.905*	.152	<.001	.35	1.46
NVAS17	NVAS1	1.343*	.152	<.001	.79	1.89
	NVAS2	.971*	.152	<.001	.42	1.52
	NVAS3	1.505*	.152	<.001	.95	2.06
	NVAS4	1.514*	.152	<.001	.96	2.06
	NVAS5	1.152*	.152	<.001	.60	1.70
	NVAS6	1.514*	.152	<.001	.96	2.06
	NVAS7	1.524*	.152	<.001	.97	2.07
	NVAS8	.571*	.152	.031	.02	1.12

	NVAS9	-.210	.152	.999	-.76	.34
	NVAS10	1.333*	.152	<.001	.78	1.88
	NVAS11	1.495*	.152	<.001	.94	2.05
	NVAS12	1.410*	.152	<.001	.86	1.96
	NVAS13	1.495*	.152	<.001	.94	2.05
	NVAS14	1.476*	.152	<.001	.93	2.03
	NVAS15	1.524*	.152	<.001	.97	2.07
	NVAS16	.610*	.152	.013	.06	1.16
	NVAS18	1.410*	.152	<.001	.86	1.96
	NVAS19	1.514*	.152	<.001	.96	2.06
	NVAS20	.705*	.152	<.001	.15	1.26
	NVAS21	1.133*	.152	<.001	.58	1.68
	NVAS22	1.524*	.152	<.001	.97	2.07
	NVAS23	1.514*	.152	<.001	.96	2.06
NVAS18	NVAS1	-.067	.152	1.000	-.62	.48
	NVAS2	-.438	.152	.359	-.99	.11
	NVAS3	.095	.152	1.000	-.46	.65
	NVAS4	.105	.152	1.000	-.45	.66
	NVAS5	-.257	.152	.991	-.81	.29
	NVAS6	.105	.152	1.000	-.45	.66
	NVAS7	.114	.152	1.000	-.44	.66
	NVAS8	-.838*	.152	<.001	-1.39	-.29
	NVAS9	-1.619*	.152	<.001	-2.17	-1.07

	NVAS10	-.076	.152	1.000	-.63	.47
	NVAS11	.086	.152	1.000	-.46	.64
	NVAS12	.000	.152	1.000	-.55	.55
	NVAS13	.086	.152	1.000	-.46	.64
	NVAS14	.067	.152	1.000	-.48	.62
	NVAS15	.114	.152	1.000	-.44	.66
	NVAS16	-.800*	.152	<.001	-1.35	-.25
	NVAS17	-1.410*	.152	<.001	-1.96	-.86
	NVAS19	.105	.152	1.000	-.45	.66
	NVAS20	-.705*	.152	<.001	-1.26	-.15
	NVAS21	-.276	.152	.978	-.83	.27
	NVAS22	.114	.152	1.000	-.44	.66
	NVAS23	.105	.152	1.000	-.45	.66
NVAS19	NVAS1	-.171	.152	1.000	-.72	.38
	NVAS2	-.543	.152	.059	-1.09	.01
	NVAS3	-.010	.152	1.000	-.56	.54
	NVAS4	.000	.152	1.000	-.55	.55
	NVAS5	-.362	.152	.745	-.91	.19
	NVAS6	.000	.152	1.000	-.55	.55
	NVAS7	.010	.152	1.000	-.54	.56
	NVAS8	-.943*	.152	<.001	-1.49	-.39
	NVAS9	-1.724*	.152	<.001	-2.27	-1.17
	NVAS10	-.181	.152	1.000	-.73	.37

	NVAS11	-.019	.152	1.000	-.57	.53
	NVAS12	-.105	.152	1.000	-.66	.45
	NVAS13	-.019	.152	1.000	-.57	.53
	NVAS14	-.038	.152	1.000	-.59	.51
	NVAS15	.010	.152	1.000	-.54	.56
	NVAS16	-.905*	.152	<.001	-1.46	-.35
	NVAS17	-1.514*	.152	<.001	-2.06	-.96
	NVAS18	-.105	.152	1.000	-.66	.45
	NVAS20	-.810*	.152	<.001	-1.36	-.26
	NVAS21	-.381	.152	.652	-.93	.17
	NVAS22	.010	.152	1.000	-.54	.56
	NVAS23	.000	.152	1.000	-.55	.55
NVAS20	NVAS1	.638*	.152	.006	.09	1.19
	NVAS2	.267	.152	.985	-.28	.82
	NVAS3	.800*	.152	<.001	.25	1.35
	NVAS4	.810*	.152	<.001	.26	1.36
	NVAS5	.448	.152	.316	-.10	1.00
	NVAS6	.810*	.152	<.001	.26	1.36
	NVAS7	.819*	.152	<.001	.27	1.37
	NVAS8	-.133	.152	1.000	-.68	.42
	NVAS9	-.914*	.152	<.001	-1.46	-.36
	NVAS10	.629*	.152	.008	.08	1.18
	NVAS11	.790*	.152	<.001	.24	1.34

	NVAS12	.705*	.152	<.001	.15	1.26
	NVAS13	.790*	.152	<.001	.24	1.34
	NVAS14	.771*	.152	<.001	.22	1.32
	NVAS15	.819*	.152	<.001	.27	1.37
	NVAS16	-.095	.152	1.000	-.65	.46
	NVAS17	-.705*	.152	<.001	-1.26	-.15
	NVAS18	.705*	.152	<.001	.15	1.26
	NVAS19	.810*	.152	<.001	.26	1.36
	NVAS21	.429	.152	.405	-.12	.98
	NVAS22	.819*	.152	<.001	.27	1.37
	NVAS23	.810*	.152	<.001	.26	1.36
NVAS21	NVAS1	.210	.152	.999	-.34	.76
	NVAS2	-.162	.152	1.000	-.71	.39
	NVAS3	.371	.152	.699	-.18	.92
	NVAS4	.381	.152	.652	-.17	.93
	NVAS5	.019	.152	1.000	-.53	.57
	NVAS6	.381	.152	.652	-.17	.93
	NVAS7	.390	.152	.602	-.16	.94
	NVAS8	-.562*	.152	.039	-1.11	-.01
	NVAS9	-1.343*	.152	<.001	-1.89	-.79
	NVAS10	.200	.152	1.000	-.35	.75
	NVAS11	.362	.152	.745	-.19	.91
	NVAS12	.276	.152	.978	-.27	.83

	NVAS13	.362	.152	.745	-.19	.91
	NVAS14	.343	.152	.826	-.21	.89
	NVAS15	.390	.152	.602	-.16	.94
	NVAS16	-.524	.152	.087	-1.07	.03
	NVAS17	-1.133*	.152	<.001	-1.68	-.58
	NVAS18	.276	.152	.978	-.27	.83
	NVAS19	.381	.152	.652	-.17	.93
	NVAS20	-.429	.152	.405	-.98	.12
	NVAS22	.390	.152	.602	-.16	.94
	NVAS23	.381	.152	.652	-.17	.93
NVAS22	NVAS1	-.181	.152	1.000	-.73	.37
	NVAS2	-.552*	.152	.048	-1.10	.00
	NVAS3	-.019	.152	1.000	-.57	.53
	NVAS4	-.010	.152	1.000	-.56	.54
	NVAS5	-.371	.152	.699	-.92	.18
	NVAS6	-.010	.152	1.000	-.56	.54
	NVAS7	.000	.152	1.000	-.55	.55
	NVAS8	-.952*	.152	<.001	-1.50	-.40
	NVAS9	-1.733*	.152	<.001	-2.28	-1.18
	NVAS10	-.190	.152	1.000	-.74	.36
	NVAS11	-.029	.152	1.000	-.58	.52
	NVAS12	-.114	.152	1.000	-.66	.44
	NVAS13	-.029	.152	1.000	-.58	.52

	NVAS14	-.048	.152	1.000	-.60	.50
	NVAS15	.000	.152	1.000	-.55	.55
	NVAS16	-.914*	.152	<.001	-1.46	-.36
	NVAS17	-1.524*	.152	<.001	-2.07	-.97
	NVAS18	-.114	.152	1.000	-.66	.44
	NVAS19	-.010	.152	1.000	-.56	.54
	NVAS20	-.819*	.152	<.001	-1.37	-.27
	NVAS21	-.390	.152	.602	-.94	.16
	NVAS23	-.010	.152	1.000	-.56	.54
NVAS23	NVAS1	-.171	.152	1.000	-.72	.38
	NVAS2	-.543	.152	.059	-1.09	.01
	NVAS3	-.010	.152	1.000	-.56	.54
	NVAS4	.000	.152	1.000	-.55	.55
	NVAS5	-.362	.152	.745	-.91	.19
	NVAS6	.000	.152	1.000	-.55	.55
	NVAS7	.010	.152	1.000	-.54	.56
	NVAS8	-.943*	.152	<.001	-1.49	-.39
	NVAS9	-1.724*	.152	<.001	-2.27	-1.17
	NVAS10	-.181	.152	1.000	-.73	.37
	NVAS11	-.019	.152	1.000	-.57	.53
	NVAS12	-.105	.152	1.000	-.66	.45
	NVAS13	-.019	.152	1.000	-.57	.53
	NVAS14	-.038	.152	1.000	-.59	.51

	NVAS15	.010	.152	1.000	-.54	.56
	NVAS16	-.905*	.152	<.001	-1.46	-.35
	NVAS17	-1.514*	.152	<.001	-2.06	-.96
	NVAS18	-.105	.152	1.000	-.66	.45
	NVAS19	.000	.152	1.000	-.55	.55
	NVAS20	-.810*	.152	<.001	-1.36	-.26
	NVAS21	-.381	.152	.652	-.93	.17
	NVAS22	.010	.152	1.000	-.54	.56

*. The mean difference is significant at the 0.05 level.