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**Conflict Resolution and Development of
Communication Competence in
Preschool Boys with Language Impairment**

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To Thomas & Talia

ABSTRACT

Children with Language Impairment (LI) have difficulties navigating peer situations, withdraw from social interaction and are at risk for developing further behavioral and socio-emotional problems. Children with LI often forego interactions, in which language and social skills are naturally trained, including conflict management. Conflict resolution is an especially challenging task with heightened emotional intensity, in which behavioral regulation is required to facilitate perspective taking abilities. Reconciliation, i.e. friendly contact between former opponents shortly following conflict termination, is positively associated with subsequent initiation or resumption of developmental peer interaction after a conflict has run its course.

The aim of this thesis was to describe conflict behavior between boys with LI and determine possible deviations from conflict progression of boys with typical language development (TL). Unstructured free-play between 11 preschool boys with LI and between 20 preschool boys with TL was examined. Incidents entailing mutual opposition were identified as conflicts, and coded according to a validated system. The interrelations were examined between social interaction (mutual responsive exchanges) prior to conflict in the *pre-conflict period*, conflict causes, functions and effects of non-affiliative behavior and reconciliatory behavior in the *post-conflict period*, and social interaction in the *succeeding non-conflict period*.

In Paper I it was established that the boys with TL demonstrate a sequential non-random pattern of conflict progression, with behaviors associated with previous behavioral exchanges within the conflict and directly preceding conflict outbreak. The conflict cause was linked to whether opponents socially interacted in the *pre-conflict period*, and subsequently related to the category of exhibited reconciliatory strategy in the *post-conflict period*. Further, the aggressor and the victim initiated reconciliation at similar rates, with the exception of *verbal apologies*, which were initiated most often by the aggressor. Also *verbal apologies* were the reconciliatory behavior that was least accepted by opponents. Finally, a higher rate of social interaction between former opponents in the *succeeding non-conflict period* was positively associated with both social interaction between opponents in the *pre-conflict period* and reconciliation.

The boys with LI reconciled a smaller mean proportion of conflicts ($47.3 \pm 4.5\%$) than the boys with TL ($63.6 \pm 2.0\%$). This main result was shown in Papers II-IV to stem from two behavioral characteristics within the communicative style of the boys with LI. First, the boys with LI exhibited overt withdrawal and non-assertiveness. The distribution of reconciliatory categories and the rates, at which opponents accept a reconciliatory behavior, were similar between the LI group and the TL group. However, the boys with LI displayed reconciliatory behavior in a smaller share of conflicts than the boys with TL. The boys with LI demonstrated a strong reliance on a reference point in the *pre-conflict period* in order to attempt reconciliation and functionally reconcile conflicts in similar proportions as the boys with TL. Rather, the boys with LI conducted *active withdrawal* (left the room) relatively more often than the boys with TL, particularly in conflicts without social interaction in the *pre-conflict period*. Secondly, the boys with LI often escalated aggressive and emotionally charged behavior and exhibited difficulties concluding these behavioral turns. This led to the seldom reconciled *aberrant* caused conflicts, which represented a larger share of LI conflicts than TL conflicts. *Aberrant* caused conflicts entailed inappropriate behavioral play/protest intensities that without communicative intent escalated to screaming/physical tantrums and thereby hindered the opponent from responding with a behavioral turn. Also, following *post-conflict aggression*, the boys with LI were unable to overcome, in particular *reciprocal* and *only verbal aggression*, and thereafter reconciled a smaller share of these conflicts than the boys with TL. Further, the LI group's most representative non-affiliative behavior, *active withdrawal*, was less conducive to reconciliation than *aggression*, the most representative non-affiliative behavior in the TL group.

In the *succeeding non-conflict period*, the boys with LI socially interacted at lower rates than TL boys, deriving mainly from the negative consequences of the LI lower reconciliation rates when social interaction was absent in the *pre-conflict period* and the larger share of rarely reconciled *aberrant* caused conflicts.

The results indicate that in addition to traditional psycholinguistic remediation, children with LI may benefit from intervention methods that support initiating and maintaining communicational contact in the cases an immediate communicative referent is unavailable, as well as effectively concluding emotionally intensive and aggressive behavioral turns and providing positive experiences of peer interaction.

Keywords: language impairment, preschool children, conflict resolution, communication, social competence, emotional regulation, behavioral organization

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LIST OF ABBREVIATIONS

LI	Language Impairment
SLI	Specific Language Impairment
TL	Typical Language Development

INTRODUCTION

Small children are enrolled in preschools at very young ages and are expected to communicate their needs and effectively exchange social behavior in the peer group. Children with Language Impairment (LI) have not developed language expression and/or comprehension at a comparable level as same-aged peers. These developmental language difficulties, limit social participation and later on academic instruction, as communicating with peers and school work is predominately language based. Children experiencing language or communicational problems as small children are at a higher risk later in childhood to develop disturbing behavioral problems, such as withdrawal, depression, aggression, hyperactivity or concentration problems (Benasich et al. 1993; Brinton & Fujiki 1999; Brinton et al. 1998b; Brinton et al. 1997; Craig 1993; Craig & Washington 1993; Goldstein & Gallagher 1992; Hart et al. 1997; Stevens & Bliss 1995). These psychological problems, in turn often further aggravate difficulties with peer interaction, and lead to low peer acceptance and subsequently fewer friends (Brinton & Fujiki 1999; Brinton & Fujiki 2004; Fujiki et al. 1999a; Fujiki et al. 1996; Rice et al. 1991), as well as increased risk for antisocial behavior and crime as adults (Eron 1987; Webster-Stratton 1993).

Language is the basic tool for communicating and relating with others. However, to develop language and social behavior requires practice in daily social interactions. In turn, interacting with peers entails coordinating individual perspectives, which may be in opposition of one another. How preschool children cope with these peer conflicts contributes to the ultimate behavioral dynamics of subsequent peer interactions. Thereby, conflict resolution behavior is highly influential to whether conflict opponents reconnect and reenter the developmental process of social interaction, in which conflict management skills themselves are trained and developed. In addition, conflict resolution and negotiation skills are essential in cooperative learning tasks that are commonly used in school (Brinton et al. 1998a). One form of conflict resolution behavior, reconciliation, entails that former opponents exchange friendly, affiliative behavior shortly following conflict termination (de Waal & van Roosmalen 1979). Reconciliation has been shown to be especially effective in facilitating social interaction between former opponents after conflict management has run its course (Sackin & Thelin 1984; Vespo & Caplan 1993; Verbeek & de Waal 2001).

Examining the processes involved in behavioral development, in particular conflict resolution behavior may provide a general picture of the group dynamics, yet reveal specific difficulties of a more subtle nature that have not previously been documented. In this thesis, I present original research that examines behavior exhibited in peer conflict between 11 preschool boys with LI and between 20 preschool boys with typical language development (TL). This behavior is observed in naturalistic settings, in the contexts in which the development of behavioral problems unfold. Observing children in daily activities should reveal the most reliable and objective measure of the social competence that the children possess (Stoneham 2001), and highlight specific behaviors that may often be missed during clinical assessments with standardized tasks (Masataka 2002). The acquired knowledge may further be applied in the development and evaluation of treatment methods and programs, which may redirect behavioral trajectories that lead to deviations in social competence development. An accumulative effect of seemingly small behavioral changes may have a large impact on social skills and on the occurrence of conflict reconciliation and accordingly social interaction may increase.

In the following review, I systematically explore the interrelationships between linguistic and communicative processes, socio-emotional and behavioral consequences of LI, peer conflict in child development and the ethological perspective on studying peer conflict, as well as the linguistic base of emotional regulation and the effects of behavioral organization in coping with peer conflict. Finally, behavioral profiles of children with LI that have emerged from the research to date are summarized.

The role of speech & language pathology in communicative competence development

Language development is driven by and originated from communicative needs and intents (Bjar & Liberg 2003), and entails the organization of concepts, symbolically represented, into a shared system. Accordingly, communication entails the exchange of expressed messages, which are understood by the listener with regards to the speaker's intention (Bishop 1997), and therefore communication requires partners to have an accessible shared language. Effective communicational processes constitute the foundation for qualitative social interactions, which provide opportunities for training language and social skills, such as cooperation, negotiation and conflict resolution that in turn facilitate the development of cognition and social competence (Craig 1993; Craig & Washington 1993; Fujiki et al. 1996; Fujiki et al. 1999a; Grove et al. 1993; Rice 1993). Indeed, language is a primary tool in behavioral and social interactions, however the spoken language is not alone sufficient for communicative competence, but is only part of communicative repertoire, which must be related to, enhanced by and integrated with non-verbal cues as posture, facial expression, gestures, etc. (Ahlström 2000; Bishop 1997; Bishop et al. 2000).

There are a range of psycholinguistic processes that contribute to the ability to communicate with verbal language. These processes are based on phonological discrimination, awareness and representation. This essentially entails recognition of distinct speech sounds, appreciation that the sounds make up certain segments with specific locations within words, and symbolization of the speech sounds, which serve as a referential foundation for speech output and later on literacy development (Stackhouse & Wells 1997). Communicative language also requires storing and manipulation of the linguistic information, i.e. working memory, through referencing to established phonological representations and linking to semantic and grammatical knowledge for more efficient language processing (Stackhouse & Wells 1997). Bishop (2000) put forth that language development consists of a continual reorganization of the phonological, semantic and grammatical representations into an increasingly more simplified and proficient system. Deficient executive skills, including working memory, have been implicated as factors contributing to linguistic difficulties as phonological awareness, poor performance on tasks that tap symbolic representations, as well as, processing socio-emotional information, and behavioral problems of children with LI (Cohen et al. 1998a; Cohen et al. 1998b; Conti-Ramsden & Hesketh 2003; Donlan & Masters 2000; Ford & Milosky 2003; Hart et al. 2004; Nelson et al. 1987; Young et al. 2002). Word retrieval from lexical representations, motor programming (planning of verbal output), and coordination of speech structures to produce speech sounds all factor into production of intelligible utterances in social interaction (Stackhouse & Wells 1997). Furthermore, linguistic skills are integrated in discourse with essential pragmatic and prosodic abilities, such as conversational turn-taking, maintenance of discourse topic, not changing subject in abrupt or unmotivated manner, using distinct referents, tangible answers to questions,

not repeating partner's utterances, not being hindered by literal meaning of words, discovering and repairing linguistic mistakes and using semantically appropriate intonation.

The described linguistic processes serve as a referential system in the development of orthographic representations of the written language (Stackhouse & Wells 1997). Understandably, research has reported that many children with LI develop learning and literacy disabilities later in childhood (Lindsay & Dockrell 2000; Lindsay et al. 2002; Stackhouse & Wells 1997; Young et al. 2002). Deficient reading and comprehension skills further contributes to negative social consequences. Brinton and Fujiki (2004) discuss that children with LI often, at best, partake passively in the earlier literature discussions, such as talking about character perspectives or the moral of a story. Subsequently, these discussions serve as the cultural context of the classroom and as references in future academic discussions.

Contemporary research in language impairment includes children diagnosed with Specific Language Impairment (SLI). The diagnosis SLI entails severe, congenital language impairment without commonly co-morbid conditions, i.e. hearing impairment, mental retardation, or neurological damage, and non-verbal intelligence within typical ranges (Leonard 1998). The social behavior of children with SLI is related to the social behavior of children with general language impairment, providing language is the primary difficulty. The term SLI is used interchangeably with other terms as developmental language delay, developmental language disorder, congenital aphasia, language impairment, etc. In this thesis the general term language impairment (LI) is used, but when citing other research, the term is given that was originally used by the authors. As described above, there are several concurrent and mutually influential components of language processing, which influence and are influenced by individual social, behavioral and academic profiles (Cohen et al. 1993; Stackhouse & Wells 1997; Young et al. 2002). Accordingly, children with LI represent a heterogeneous population with a wide range of individual language and social deficits that are variable in character and time (Bishop et al. 2000; Bjar & Liberg 2003; Botting & Conti-Ramsden 2004; Brinton & Fujiki 1999; Brinton & Fujiki 2002; Brinton & Fujiki 2004; Brinton et al. 1998a; Brinton et al. 2004; Donlan & Masters 2000; Fujiki & Brinton 1991; Goldstein & Gallagher 1992; Hansson et al. 2000; Howlin et al. 2000; Redmond & Rice 1998; Reuterskiöld et al. 2001). Despite the heterogeneous nature of the population with LI, children with LI have in common an inability to develop language at a level that allows for functional communication, which results in and is affected by difficulties developing social behavior and peer relationships.

The referential & reciprocal nature of communication development

Communicational skills, needed in conflict resolution and other social interactions, are acquired successively through solitary imitation initially as toddlers, and thereafter through practicing social skills within actual social interactions (Brinton & Fujiki 1993; Fujiki et al. 1996; Fujiki et al. 1997; Stevens & Bliss 1995). As infants, children respond to external stimuli and elicit responses from those around them, from both other infants and adults (Hay et al. 2004; Hedenbro & Lidén 2002; Saarni et al. 1998). Already in the first year children direct gestures and facial expressions toward same-aged peers, demonstrate social interest through intense observation of peers, and imitate one another in a responsive manner (Rubin et al. 1998). Intersubjectivity, or joint attention focus, is created when partners respond to behavioral turns with related and relevant behavioral turns (Göncü 1993). During episodes of joint attention focus between toddlers and their mothers, the

toddlers produced more vocal training and the mothers named more objects than outside of these incidents of joint attention focus (Tomasello & Farrar 1986). This process serves as the referent to learning object names. In turn, the ability to verbally name objects and people facilitates initiation of intersubjectivity (Gertner et al. 1994). This process of reciprocally communicating information through shared frames of reference and expectation is conditioned throughout early childhood and is fundamental as scaffolding to subsequent verbal and non-verbal interactions (Goldstein & Gallagher 1992; Hart et al. 2003; Yont et al. 2003). This facilitates later development of language with more intricate understanding of and reference to emotional signals (Saarni et al. 1998). Interpersonal referents are accessed in forming expectations for future interaction and assumptions about relationship roles (Hart et al. 1997; Rubin et al. 1998; Saarni et al. 1998). Subsequently, the developing referential system serves as an internalized working model for learning socially acceptable conventions for emotional communication and social interaction (Hart et al. 1997; Rubin et al. 1998; Saarni et al. 1998). This entails that the child incorporates the social norms into one's own values and behaves accordingly without prompts or reinforcement of the socialization agents (Grusec & Dix 1986). As children enter preschool the rates of socio-dramatic play increase and more abstract concepts constitute the focus of attention through pretense (Rubin et al. 1998). Pretence, in turn entails increased verbal exchanges and more cognitively demanding resolutions to conflicts that arise (Asher & Gazelle 1999; Laursen et al. 2001; Odom et al. 1990; Odom & McConnell 1992). Although beyond the scope of this thesis, child temperament and parenting styles have bearing on the qualitative dimensions of the early sequences of joint attention focus and subsequent communicative interactions (Burgess et al. 2001; Rubin et al. 2001; Yont et al. 2003).

Children begin early on to hone the pattern of referring to previous interactions within current interactions (Hedenbro & Lidén 2002; Saarni et al. 1998). The ability to implement learned communicative skills is formed through the responses children encounter to behavior, both from other children and adults. Discussing events with others may incite an association to personal knowledge, which can subsequently be introduced into the ongoing interaction and may in turn stimulate the partner to association to their personal knowledge. Thereby, communication with others is a reflection of the individual's internal discourse consisting of evaluation of feelings and emotions, exploration of past experiences to utilize as frames of reference in developing expectations for upcoming contacts and planning possible behavioral strategies; all of which are language based (Barkley 1997; Cohen et al. 1998b; Gallagher 1999; Rubin et al. 1998). As will be discussed further below, children with LI often withdraw from peers and have relatively fewer experiences of social interaction. Consequently, a lack of exploration entails a smaller diversity of previous experiences that may serve as a frame of reference when initiating or navigating peer interaction (Rubin et al. 2001). Children with LI are further at a disadvantage as they demonstrate cognitive difficulties accessing previous experience in order to make inferences in referential communication (Reuterskiöld et al. 2001). Cohen & Melson (1980) put forth that the larger the common linguistic referential base, the less precision is required in verbalized language as semantics may be inferred.

The reciprocity of turn-taking in any given interaction is interdependent on the responsiveness of the play partners involved, as each behavioral turn or remark is a potential reference to the subsequent response of the partner (Eisenberg & Garvey 1981; Göncü 1993). Conversational reciprocity entails re-interpretation of preceding conversational turns and developing an understanding for the direction of the ensuing interaction, both of which are based on current conversational turns (Linell & Marková 1993). Single utterances may convey additional pragmatic

information or grammatical inferences than just the literal meaning of the words spoken (Goffman 1976). Further, the meanings of verbal remarks are supplemented through contextual and non-verbal cues (Bishop et al. 2000). As follows, each subsequent interaction exerts influence over succeeding interactions (Aureli et al. 2002; Rubin et al. 1998; Verbeek & de Waal 2001), even within the progression of preschool peer conflict (Brenneis & Lein 1977; Ljungberg et al. 1999). Consequently, structured communicative styles evolve. Preschool children have been observed to demonstrate communicative reciprocity even within oppositional peer interactions (Hay & Ross 1982; Killen & Turiel 1991). As children learn and acquire normative practices of pragmatic skills with structured communicative styles, they are better able to predict and influence the behavior of interaction partners (Brenneis & Lein 1977; Goldman 1987; Shibasaki 1988). Verbeek and de Waal (2001) discussed that in many studies it is reported that school-age children prefer behaviors that promote preservation of social interaction to behaviors that merely secure specific goals or compensate for lost resources.

Socio-emotional & behavioral difficulties of children with LI

Non-social behavior, as aggression and withdrawal contribute to and are consequences of a limited experience of developmental social interaction. When children with LI begin age appropriate attempts initiating contact with same aged children, they may encounter negative responses if an expressive handicap is apparently noticeable. Failing at specific behavioral tasks often entails one becomes reluctant and anxious when attempting the same task (Weisfeld 1980). Also, when children with LI don't understand peers and peers don't understand them, they often experience frustration, which may be expressed as both aggression and withdrawal (Eisenberg 2000; Goldman 1987). This can lead to negative reinforcement spiral entailing the child becoming increasingly discouraged from initiating further contact with peers and exclusion from developmental social interactions (Brinton & Fujiki 1999; Gagnon & Nagles 2004; McAndrew 1999; Rice 1993; Rice et al. 1991; Stevens & Bliss 1995; Wood et al. 2002). The child in this manner foregoes further interactions that may have provided opportunities for practicing language and social skills, which in turn influence the quality of subsequent social interactions (Brinton & Fujiki 1999; Craig 1993; Craig & Washington 1993; Fujiki et al. 1996; Hansson et al. 2000; Hart et al. 2004; Hartup & van Lieshout 1995; Rice 1993; Stevens & Bliss 1995; Wood et al. 2002). Thereby withdrawn and aggressive behavior becomes increasingly salient and accordingly the nature of LI limits the exposure to language, discussion, negotiation and peer interaction (Funk & Ruppert 1984; Rubin et al. 1998).

In addition to decreased occurrences of social training, limited participation in social interaction also entails fewer positive experiences of peer interaction or opportunities to develop bonds (Wood et al. 2002), less input to foster a self-image of a social being (Craig 1993), and a lessened exposure to demonstrations of accepted social norms and differing perspectives (Adalbjarnardottir 1995; Ladd & Burgess 1999). Other consequences of limited peer access are fewer opportunities to observe model language and behavior and to train specifically perspective-taking skills, as well as relatively less support from peers (Goldstein & Gallagher 1992). Cognitive representations of modeled behavior and positive interpersonal experiences may serve as points of orientation in subsequent contacts (Zahn-Waxler et al. 1996).

Externalizing and internalizing behavior are viewed negatively by peers (Hart et al. 2003), and peers often ignore children with whom they've had relatively few positive interactions (Wood

et al. 2002). Children with LI are reported to initiate, as well as to respond to peer contact to a lesser extent, prefer contact with adults and be less preferred as a conversational partners by children with typical language and social development (Brinton et al. 1998a; Brinton & Fujiki 1999; Craig 1993; Gertner et al. 1994; Guralnick et al. 1996; Rice 1993; Rice et al. 1991). Children who are predisposed towards withdrawal will avoid rejection when entering peer groups by evading social interaction and relying on adult assistance, which ultimately manifests in distinctive non-assertiveness (Rubin et al. 1998). As a result of these processes, children with language difficulties are more likely to assume a role in the perimeter of peer social groups and experience increased difficulties in peer interaction (Brinton & Fujiki 1999; Brinton & Fujiki 2004; Fujiki et al. 2002; Goldman 1987; Ladd & Burgess 1999). Thereby the perpetuation of the cycle of these described mechanisms is maintained, and children with LI exhibit high levels of withdrawal, which is linked to high rates of peer rejection (Fujiki et al. 1999a; Rubin et al. 1993), which is further linked to self-perception (Stoneham 2001). In turn, peer rejection is associated with non-responsive and non-reciprocal styles of communication (Asher & Gazelle 1999), further displays of non-sociable behavior (Rubin et al. 1998; Wood et al. 2002), as well as risks for developing behavioral disorders (Hay et al. 2004) and academic failure (Rubin et al. 1998). Consequently, withdrawal related behavior, lack of participation in social interaction and peer rejection are negatively associated with self-esteem levels (Adalbjarnardottir 1995; Coie et al. 1991; Eisenberg et al. 2001; Gertner et al. 1994; Goldstein & Gallagher 1992; Hadley & Rice 1991; Hart et al. 1997; McAndrew 1999; Rubin et al. 1993; Rubin et al. 1998). Jerome et al. (2002) found specifically lower self-esteem in older children with LI (10-13 years old). Moreover, early on in the formation of peer groups small children acquire reputations that are highly influential in peer acceptance and group dynamics (Guralnick et al. 1995; Ladd & Burgess 1999; Rubin et al. 1998). Early interventions are most effective at reversing this cycle before these reputations develop and influence peers to respond negatively, despite that pro-social behavior may have been learned through interventions (Webster-Stratton 1993).

Asher and Paquette (2003) discuss that the bulk of research verify that low peer acceptance, as well as friendship qualities and endurance, affect internal feelings of loneliness. Language difficulties and related problems in initiating and maintaining reciprocal peer interaction leads to difficulties in forming friendships and further weakens self-esteem (Fujiki et al. 1999a; Fujiki et al. 1996; Hart et al. 1997; McAndrew 1999; Stevens & Bliss 1995). Friendships provide children with positive support, a shared history, expectations of reciprocity, a joint future, promotion of interpersonal sensitivity and confirmation of one's value as a likable person, which ultimately influences one's self image, or self-esteem (Asher & Paquette 2003; Asher et al. 1996; Parker & Gottman 1989). In addition, friendships provide contexts in which children learn to appropriately exhibit and regulate emotions and friendship quality has been found to influence the development of emotional regulation (Chen & Jiang 2002; Fujiki et al. 1999a).

Language limitations both contribute to and result in intellectual difficulties (Cohen et al. 1993; Cohen et al. 1998a), which in turn are influential in the development of social difficulties (Benasich et al. 1993). It is well documented that children with LI exhibit a range of poorly developed social skills and are at risk for developing further academic, behavioral, and socio-emotional problems (Brinton & Fujiki 2004; Brinton et al. 1998a; Brinton et al. 1998b; Brinton et al. 1997; Brinton & Fujiki 1999; Brinton et al. 2004; Cohen et al. 1998a; Craig 1993; Craig & Washington 1993; Fujiki et al. 1999b; Fujiki et al. 2004; Funk & Ruppert 1984; Goldstein & Gallagher 1992; Grove et al. 1993; Howlin et al. 2000; Jerome et al. 2002; Lindsay & Dockrell

2000; Lindsay et al. 2002; McAndrew 1999; Redmond & Rice 1998; Redmond & Rice 2002; Stevens & Bliss 1995; Stoneham 2001; Stothard et al. 1998; Tomblin et al. 2000; Young et al. 2002). Children with receptive or both expressive and receptive LI experience relatively more severe behavioral problems (Beitchman et al. 1996; Botting & Conti-Ramsden 2000; Cohen et al. 1998b; Craig 1993; Fujiki & Brinton 1991; Gertner et al. 1994; Hart et al. 2004; Stevens & Bliss 1995). Treating language handicaps independently from social and behavioral aspects is inappropriate and ineffective due to the bidirectional relation between language and behavioral development (Botting & Conti-Ramsden 2000; Brinton & Fujiki 1993; Brinton & Fujiki 1999; Brinton & Fujiki 2004; Brinton et al. 1997; Brinton et al. 2000; Cohen et al. 1998b; Fujiki et al. 1997; Fujiki et al. 1996; Fujiki et al. 2004; Gallagher 1999; Hansson et al. 1992; Jerome et al. 2002; Stevens & Bliss 1995). Language and social development are intertwined and should not be considered in terms of a simple causal relationship (Beitchman et al. 1996; Brinton & Fujiki 2002; Brinton et al. 2000). Accordingly, every effort should be made to discern the psychopathology of each individual to allow for a foundation in implementing the most effectively directed interventions (Brinton et al. 2004; Cohen et al. 1993; Goldstein & Gallagher 1992).

Co-morbidity of LI & other psychiatric diagnosis

Often disruptive externalizing behavior may eclipse LI and conduct becomes the focus of psychiatric evaluations and treatment without suspicion of underlying language problematic (Cohen et al. 1993; Donahue et al. 1994; Gordon 1991). Thereby, some children with behavior problems suffer from communication disorders that go undetected and are not addressed. Also, behavioral problematic of children with LI often are attributed directly to communication difficulties and not considered directly in assessments of language abilities (Cantwell & Baker 1980; Donahue et al. 1994). Moreover, underlying deficiencies in executive functions are often implicated in the deficient language processing of children with LI, and the role of language in social contexts is not always considered. Therefore, the psycholinguistic demands of neuropsychological tests, as well as the demands on executive function in language tests may compromise the validity of evaluations (Donahue et al. 1994; Redmond 2004). Sometimes, the profession of the consultant a child is initially referred to may have more influence on a diagnosis than the individual's combined language and behavior deficits (Baltaxe & Simmons 1990). Accordingly, young children diagnosed with LI have been found to develop severe behavioral problems; likewise young children originally referred to psychiatric services have been found to experience clinical language difficulties (Baltaxe & Simmons 1990; Benasich et al. 1993; Cantwell & Baker 1980; Cohen et al. 1993; Cohen et al. 1998b; Donahue et al. 1994; Dyrborg & Goldschmidt 1996; Gallagher 1993; Howlin et al. 2000; McAndrew 1999; Redmond 2004; Redmond & Rice 1998; Tallal et al. 1989; Tomblin et al. 2000).

In particular, Cohen et al. (1998a) reported that 38% of 380 children (7-14 years-old) referred to psychiatric services, had been previously diagnosed with LI, but an additional 25% were found to experience clinical levels of LI that were not suspected prior to screening at referral. On the other side of the coin, Botting and Conti-Ramsden (2000) found children (6-8 years-old) attending language units, who according to teacher ratings, did not experience behavioral difficulties at clinical levels, though the particular subgroup with combined expressive and receptive LI experienced significantly more behavioral difficulties (at ceiling of non-clinical range) than children with strictly expressive LI. In the same study, the behavioral difficulties of the former

group increased over the year between assessments. Also, Beitchman et al. (1996) found that children with diverse speech and language impairment (5 years-old) were at higher risk to be diagnosed with psychiatric disorders in a 7 year follow up study. The risk was greater still for the children with language impairment than for those with strictly speech impairment, even in the case that language skills had improved since the initial assessment at 5 years of age.

Despite consistent findings of co-morbidity between LI and psychiatric disorders, the investments of language and behavioral interventions in remediation programs do not correspond to the high prevalence of socio-emotional and behavioral problems in the LI population or the high prevalence of language difficulties in children receiving psychiatric treatment (Gallagher 1999). Psychological interventions that are linguistically based are bound to be ineffective when children have underlying language difficulties (Gordon 1991). By the same token, higher levels of socio-emotional problems have been found to negatively influence psycholinguistic remediation for children with LI (Botting & Conti-Ramsden 2000; Eisenberg et al. 1992; Fujiki et al. 2004).

The role of peer conflict occurrence & resolution in child development

In preschool children begin to experience interactions with a balance of social power as opposed to the involuntary parent-child relationship in which the child is typically dependant upon, nurtured by and in a subordinate position to the parent (Laursen et al. 1996; Rubin et al. 1998). Also, there is not a risk or option that relationships with parents or siblings will be terminated if conflict is not managed satisfactorily or amicably (Katz et al. 1992; Laursen et al. 2001). In addition, preschool aged children are becoming increasingly more able to recognize their own personal goals as a distinct perspective and direct behavior in the attainment of those goals. As children strive to reach their individual goals, the risk for conflict increases (Masataka 2002). However, as language, cognitive, social and physical abilities typically develop, more opportunities for developmental emotional communication arise (Saarni et al. 1998). Preschool peer settings provide children with opportunities to initiate voluntary relationships and to truly experience and develop coping mechanisms to conflicting ideas. Peer conflict is therefore a novel situation for preschoolers (Rubin et al. 1998), and functions in the reorganization of the social structure in peer groups (Maynard 1985). How these conflicts are managed may determine whether children stay in the relationship, or find the conflicts to aversive to balance against the advantages of friendly relations (Maccoby 1996; Shantz 1987). Conflicts between small children are therefore unavoidable and necessary in learning skills allowing for more intimate relationships, which in turn inevitably entail further conflicts. Accordingly, peers are influential socialization agents in child development (Butovskaya et al. 2000; Goldstein & Gallagher 1992).

Peer conflicts are common occurrences and natural contexts, in which children train and develop language, cognition and social skills (Chen et al. 2001; Hay & Ross 1982; Last & Avital 1995; Lieber 1994; Malloy & McMurray 1996; Vespo & Caplan 1993; Vitaro & Pelletier 1991). Peer conflict provides natural opportunities for affect regulation and rather blatantly presents a child with another perspective and thereby induces reflection over one's own perspective and promotes empathy (Chung & Asher 1996; Rubin et al. 1998; Shantz 1987). Conflict resolution involves the interlinking of several developmental processes (Brinton et al. 2000; Fujiki et al. 1999b; Gallagher 1999), as empathy, understanding situations from another's perspective, processing abstract concepts, and language use in combination with other communicative signals and applied pragmatically to the demands of the social system. Experience with strategizing and

implementing conflict resolution in real time widens the behavioral repertoire of problem-solving behavior and facilitates emotional, empathetic and cognitive development (Brinton & Fujiki 1999; Cummings et al. 1986; Fujiki et al. 1999b; Fujiki et al. 1996; Göncü & Cannella 1996; Iskander et al. 1995; Katz et al. 1992; Vespo & Caplan 1993). Saarni et al. (1998) discusses that a wide and diverse repertoire of problem solving strategies is positively linked to peer likeability. However, in order to moderate peer conflict toward positive resolutions as reconciliation requires in tact communicative skills (Ljungberg 1998). In turn, a broad range of experience in peer interaction, a capacity to access and relate current opposition to past experiences, perspective-taking skills, regulation of emotional intensity, problem-solving skills and appropriate appreciation for the impact of one's own behavior are all central to the effectiveness of conflict management and coping with emotionally adverse situations (Asher et al. 1996; Hart et al. 2003; Saarni et al. 1998).

The ethological perspective on the occurrence & resolution of peer conflict

Animals communicate within social interactions in order to coordinate the behaviors displayed in collective efforts, such as cooperative foraging, hunting and rearing of young, as well as cooperative defense of territories and from predators. Therefore, living in social groups may entail increased individual success and inclusive fitness. Yet individuals within a social group have similar needs for the same resources, which lead to intra-species competition (Silk 1998). Further, successful group living requires close relationships, which in turn increase the risk for conflicts, both in the animal kingdom over the distribution of resources, as well as in the preschool classroom over personal goals (Cords 1992; Gordon 1991; Silk 1998). However, when a task cannot be executed alone, cooperation and helping others to attain their goals facilitates a larger attainment of one's own objectives (Charlesworth & La Freniere 1983). From an evolutionary perspective, behaviors resulting in the highest fitness endure and become increasingly prominent in a population. Strategies will develop allowing damage caused by conflict to be repaired so social bonds required for effective cooperation can be restored (Swedell 1997; de Waal 1992; de Waal & Yoshihara 1983).

In 1979, while studying chimpanzees, de Waal and van Roosmalen observed opponents, shortly after conflict termination, approach one another and exchange affiliative behavior. This was termed reconciliation and since then been found to occur in the majority of primate species that were studied (reviewed in Aureli et al. 2002). Non-human primates attain reconciliation through a range of behaviors, such as various forms of body contact, as kissing, hand-holding, embracing, touching, as well as social behaviors, as sexual displays, reciprocal lip-smacking, grunting and grooming (Castles & Whiten 1998a; Cords 1992; Cords 1993; Swedell 1997; de Waal & Aureli 1997; de Waal & van Roosmalen 1979). Reconciliation has been found to result in a decrease in aggression, self-directed and stress-related behaviors and overall conflict frequency, while tolerance levels increase (Aureli et al. 1989; Aureli et al. 2002; Aureli & van Schaik 1991; Castles & Whiten 1998a; Castles & Whiten 1998b; Cords 1988; Silk 1997; Silk 1998).

The function of reconciliation has been debated in many ethological studies. The "Relationship-repair model" explains the evolutionary significance of reconciliatory behavior is to ensure that individuals restore relationship bonds to the level as it was preceding the conflict (Aureli et al. 1989; Aureli 1997). However, Silk (1997) found no increase of affiliative behavior on a more permanent basis as the relationship-repair hypothesis predicts. Silk put forth the

'Uncertainty-reduction' model, which suggests that reconciliation serves the proximate function of communicating to the opponent that the conflict is over and no further aggression should be expected. The latter model explains the reduction in stress-related behavior in the minutes directly following reconciliation. Also, support for the latter model was found in other studies (Aureli & van Schaik 1991; Castles & Whiten 1998b; Seyfarth & Cheney 1997; Strier 1992). Alternatively, Aureli (1997) explains the two hypotheses are compatible in that stress-related behavior may signify motivational conflicts within the individual. The fear of risking aggression to approach a former opponent and the attractiveness towards approaching a former opponent to reap the rewards of reconciliation may result in observable anxiety. Reconciliation may both alleviate fear of continued conflict interaction, as well as restore levels of emotional intensity that allows for conflict free interaction.

Accordingly, children may also resolve conflicts with reconciliation, which may not only end aggressive interactions and repair relationships, but also contributes to sustaining sequential emotional and social maturation through continued social interaction. In turn, more mature social competence should result in higher fitness. However, humans communicate at a separate level than non-human primates with the functional use of abstract language. In a symbolic referential task, non-human primates (chimpanzees and orangutans) were found to require non-verbal cues, whereas toddlers required verbal cues in reference to the target object (Poss & Rochat 2003). Thus, language and its referential features are fundamental in the progression of peer conflict between preschool children. Children are faced with the challenge of balancing motivational conflicts of attaining one's personal goals while still upholding access to the benefits of group inclusion, as it is within the group context children navigate to attain individual goals (Chung & Asher 1996; Krasnor & Rubin 1983; Rubin et al. 1998). Children were studied with an evolutionary behavioral focus and ethological research methods were developed for the study of child development.

Behavioral sequences between preschool children, representing issues of peer conflict, include disputes over rules and social order in games and role-play, struggle for access to objects, physical or verbal altercations, and a child's activity hindering another child's activity (Caplan et al. 1991; Dawe 1934; Hartup et al. 1988; Killen & Naigles 1995; Killen & Turiel 1991; Shantz 1987; Strayer & Strayer 1980). Children have been observed to reconcile, and thereby solve conflicts allowing for continued play, the training grounds of social competence (Butovskaya & Kosintev 1999; Butovskaya et al. 2000; Hartup et al. 1988; Ljungberg et al. 1999; Sackin & Thelin 1984; Schmidt & Grammer 1997; Verbeek & de Waal 2001). Reconciliation most often occurs within a few minutes of conflict termination (Butovskaya & Kozintsev 1999; Ljungberg et al. 1999). Preschool children display a range of distinctive reconciliatory behaviors, such as object offers (i.e. valuable toys), offerings of symbolic benefits (i.e. playing a desired role, being first in a queue), abstract promises, self-ridicule, apologies, spontaneous affection, play initiations, negotiations and ritualistic rhymes (Butovskaya & Kosintev 1999; Butovskaya et al. 2000; Hartup et al. 1988; Iskander et al. 1995; Killen & Turiel 1991; Ljungberg et al. 1999; Sackin & Thelin 1984; Schmidt & Grammer 1997). In addition to reconciliation, other conflict coping strategies, less congruent to group unity, include retaliation, redirected aggression, stress-related behaviors as auto-manipulation or displacement activities, and avoidance of the former opponent (Cords 1988; Strier 1992). However, these aggressive and withdrawal related behaviors decrease in frequency following accepted reconciliatory behaviors (Butovskaya & Kosintev 1999; Butovskaya et al. 2000; Ljungberg et al. 1999). Reconciliation is also shown to be associated with facilitation of friendly, pro-social behavioral interaction following conflict situations (Hartup et al. 1988; Sackin & Thelin

1984; Vespo & Caplan 1993). On the other hand, Laursen and Hartup (1989) found that social interaction prior to conflict outbreak was the principal motivational factor to social interaction after the conflict. Alternately, Verbeek and de Waal (2001) recognized that a social interaction prior to conflict initiation and reconciliation are confounding factors, positively associated with former opponents reconnecting in peer interaction after the conflict has run its course.

Emotional regulation & behavioral adaptation in conflict management

Behavioral organization demands emotional regulation, which entails decreasing or elevating affect levels, depending upon personal goals and social demands of particular situations (Fujiki et al. 2002). Naturally occurring peer conflicts are often situations of heightened emotion (Zahn-Waxler et al. 1996). The detection of emotional arousal in peers may even induce increased internal emotional intensity (Eisenberg et al. 1992). However, the ability to recognize and decipher emotional cues of others contributes to effective self regulation of affect intensity (Saarni et al. 1998; Shields et al. 2001). Further, predicting and responding to emotional states of others is central to understanding normative social language (Ford & Milosky 2003). In turn, emotional regulation is a highly influential factor in the navigation of social interaction (Calkins & Fox 2002; Maccoby 1996), as emotional levels ultimately moderate the organization of behavioral expression, and subsequently peer acceptance (Eisenberg et al. 1993). Over-control of emotional intensity is observable as internalizing behavior, where as under-control of emotional intensity results in externalizing behavior (Eisenberg et al. 2001; Hart et al. 1997; Hart et al. 2003). An inability to elevate emotional arousal may be viewed as non-responsiveness, whereas an inability to decrease debilitating emotional intensities may compromise the ability to process linguistic information (Fujiki et al. 2004).

Expressions of aggression up to the level of asserting oneself and setting personal boundaries are positively regarded by peers (Coie et al. 1991; Last & Avital 1995). Also, a certain level of emotional arousal facilitates recognition of emotional cues and adoption of others' perspectives, however, non-regulated emotional intensity ultimately focuses the individual on the self and perspective-taking abilities are disrupted (Eisenberg et al. 1992; Roberts & Strayer 1996; Strayer & Roberts 2004). Thereby, it becomes more difficult to inhibit aggression. Coie et al. (1991) found that both the frequency and intensity of aggression contribute to forming group social dynamics. On the other hand, Hart et al. (2004) concluded that inadequate understanding of the emotional states of others is implicated in an exaggerated increase of emotional regulation and expression of withdrawal. Although there is minimal overlap in social profiles between externalizing and internalizing behavior (Wood et al. 2002), aggressive children are more withdrawn than non-aggressive peers (Pepler et al. 1998). Children, who are rejected from the peer groups, as is shown for children who exhibit aggression and withdrawal, may exaggerate the hostile intent of others, have negative expectations of conflict outcomes (Rubin et al. 1998), and escalate aggression and incidences of interpersonal peer conflict (Dodge et al. 1990; Hay et al. 2004; Putallaz & Sheppard 1992). In turn, these children are further viewed as aggressive by peers and peers imply hostile intent to the children with aggressive reputations, who are thereby further rejected by peers (Coie et al. 1991). As discussed, children with LI are consistently reported to experience high levels of peer rejection.

The excitation of conflict in combination with dysregulation of emotional intensity has also been reported to disturb cognitive processes of perspective taking, recognizing one's role in

conversational turn-taking, implementing linguistic knowledge, appreciating consequences of one's actions and attentional control that regulates aggression inhibition (Diamond 2002; Eisenberg et al. 2001; Fujiki et al. 2004; reviewed in Richardson et al. 1994; Rubin et al. 1998; Stevens & Bliss 1995; Zahn-Waxler et al. 1995). In addition, the relationship between emotional regulation and social cognition influences the ability to develop or access internal representations of more cognitively sophisticated problem-solving strategies (Diamond 2002; Eisenberg et al. 1992; Stevens & Bliss 1995). Children with behavioral problems may exhibit proper social knowledge in hypothetical exercises of conflict resolution, but fail to implement these skills when faced with naturally occurring or simulated provocation of conflict with a confederate (Vitaro & Pelletier 1991). The executive function of behavioral self-regulation is implicated in the poor development of language, as well as social and academic competence in children with LI (Young et al. 2002). Cohen et al. (1998b) reported that of children, who had been referred to psychiatric services, the children with LI performed poorly in emotional decoding and problem-solving was executed at a less cognitively mature level, as compared to the children without LI. Also, Fujiki et al. (2002) found that emotional regulation is particularly difficult for children with LI, as measured by teacher ratings. However, the influence within or between affiliative and non-affiliative behavior is not simple or unidirectional (Robinson et al. 2003; Russell et al. 2003).

In a longer perspective, children who have limited experience in exploration and social interaction will have fewer referents at their disposal in attempts to regulate emotional intensity (Rubin et al. 2001). As discussed earlier, children with LI, as a consequence of both externalizing and internalizing behavior are often rejected by peers and develop reluctance towards social contact with peers. Also, sustained emotional arousal hinders participation in developmental play, which consequently is the context in which children pretend and experiment with different problem-solving skills (Rubin et al. 2001). In play children process effectiveness and consequences of behavioral strategies and use play experiences as frames of references to solve social problems within actual peer conflict (Rubin et al. 2001).

The referential language base of emotional regulation & behavioral organization

Socio-emotional development is strongly mediated through language (Fujiki et al. 1996; Tallal et al. 1989), as language is the means to label and discuss emotions, as well as to mediate between representations of motivation, intent, behavior and consequences (Gallagher 1999; Saarni et al. 1998). In this sense children with language impairment are often at a disadvantage. In addition, disabilities in regulating emotional intensity limits access to challenging social interactions and the language relevant to these situations (Fujiki et al. 2002).

Reciprocally disclosing personal thoughts within a friendship and discussion of emotional events at an intimate level builds trust, which in turn facilitates further self-disclosure between friends (Asher et al. 1996). Notwithstanding, the emotional intimacy associated with friendships increases vulnerability towards disappointment over partner's behavior that is in contrast to one's own perspective or expectations, which in turn leads to peer conflict (Maccoby 1996). However, shared knowledge of emotional experience may be referenced to predict consequences of behavior. Verbally discussing and sharing emotional experiences increases children's awareness towards signals reflecting emotional states of themselves and others, through reflection over one's own emotions and comparisons with other's description of emotion (Asher et al. 1996; Barkley 1997; Eisenberg et al. 1992; Fujiki et al. 2002; Gallagher 1999; Göncü 1993; McAndrew 1999;

Saarni et al. 1998). Further, discussing more emotionally challenging situations develops and confirms social rules, norms and internalized inner dialogue, which in turn function as the conceptual framework in the prediction of others behavior (Goldman 1987; Gordon 1991). Likewise, discussions of behavioral responses to emotional experiences may be internalized. Access to these linguistically based representations may also be compromised by deficient psycholinguistic processes in children with LI (Fujiki et al. 2004). Efficiency of working memory determines access to past experiences, formulation of behavioral goals, strategies to attain goals and expectations of behavioral outcomes (Barkley 1997). Consequently, inaccurate internal representations, which function as foundations to learned social rules and affect self-regulation, may develop from language difficulties (Barkley 1997; Cohen et al. 1998a; Cohen et al. 1998b; Gallagher 1999; Gordon 1991).

Socio-emotional profiles & problem-solving skills in children with LI

Several studies describe that children with LI tend to internalize feelings of rejection, guilt, and anxiety over poorly developed social skills and therefore are found to exhibit comparatively high levels of withdrawal behavior (Brinton & Fujiki 1999; Brinton & Fujiki 2002; Cohen et al. 1998b; Fujiki et al. 1999b; Fujiki et al. 2002; Hart et al. 2004; Redmond & Rice 1998; Stoneham 2001). Fujiki et al. (2001) suggested that withdrawal related behavior is indicative of increased stress levels and also observed that 6-10 year-old boys with SLI on the playground behaved evasively to a larger extent and engaged in peer interaction less than typically developing children. Furthermore, children with LI are not inclined to rather participate in activities with relatively fewer language demands (Fujiki et al. 2001), or compensate verbal skills with non-verbal pro-social behavior (Bishop et al. 2000; Brinton et al. 1998a; Brinton & Fujiki 1999; Fujiki et al. 2001). The characteristic withdrawal in children with SLI was observed to have several negative social consequences in peer interaction (Fujiki et al. 2001).

Children with LI have also been found to take a distinct non-responsive and non-assertive stance in negotiation tasks. However, responsiveness in conversation with use of prompts and acknowledgements to a partner's remarks contributes to sustaining interactions, whereas non-responsiveness and ignoring a partner's remarks often terminate social contacts (Hadley & Rice 1991). Many studies report observations, in which children with LI contribute substantially less than control subjects in staged negotiation and collaborative tasks (reviewed in Brinton & Fujiki et al. 2004; Brinton et al. 1998b; Fujiki et al. 1997; Grove et al. 1993). This is also true of experimental conditions designed to present children with less verbally demanding cooperative tasks (Brinton et al. 1998a; Brinton et al. 2000). Redmond & Rice (1998) also described distinctive non-assertiveness of children with SLI during negotiation with peers. Steven and Bliss (1995) found children with SLI offered fewer, less varied and less cognitively demanding conflict resolution alternatives than typically developing children in a hypothetical exercise. In the same study the subgroup of children with both expressive and receptive LI performed relatively poorly in conflict role enactment tasks. Similarly, Cohen et al. (1998b) also found that a sub-group of children referred to psychiatric services, which were identified with LI, exhibited problem-solving strategies at a lower level. However, observation of naturally occurring conflicts between children with LI is lacking in the current literature.

Behavioral initiation to interaction has been reported as a primary defining factor for following exchanges (Brinton et al. 1997; Farmer 1997). In staged observations, children with SLI

are reported to exhibit difficulty accessing an ongoing activity between a dyad, in comparison to children with typical language development (Craig & Washington 1993; Brinton et al. 1997). Children with LI who did access the interaction took longer time to do so, were more passive in their participation, talked less to the partners in the original dyad and were talked less to by partners than target children with typical language development. Brinton & Fujiki (1999) also discuss that children with LI generally have a non-assertive, non-responsive and passive role in the interactions that are accessed. A communicational frame of reference is instrumental in successfully asserting oneself and initiating interaction (Craig & Washington 1993). However, the relationship between the existence of an interchange between opponents as a communicative reference prior to conflict outbreak and the progression of the ensuing conflict interaction has not been investigated in children with LI.

High levels of aggression have been reported to be uncharacteristic for children with LI (Brinton & Fujiki 1999; Brinton et al. 2000; Fujiki et al. 1997; Redmond & Rice 1998). Nonetheless, episodes are reported where in children with LI exhibit play behaviors that escalated to hostile intensities and sporadically display tantrum like behavior (Brinton & Fujiki 1999; Brinton et al. 2000; Craig 1993; Fujiki et al. 2001; Goldman 1987; Stevens & Bliss 1995).

The special education teachers, as well as the speech and language pathologists, working at one of the few preschools for children with acute language difficulties in the Stockholm region, have reported the children often experience intense conflicts and difficulties resolving conflicts at an effective or developmental level. These concerns are evaluated in this thesis.

OBJECTIVES

The focus of this thesis was to study and describe the behavioral dynamics that were demonstrated in peer conflict between preschool children with typical language development (TL) and in peer conflict between preschool children with language impairment (LI). This objective was realized through exploring what had affected and what were affected by described behavioral sequences, discriminating how these processes may have differed between the two groups and relating findings to the potential influence on the overall development of social competence. The investigations were conducted on the minute level to target more subtle communicative and behavioral phenomenon.

The specific investigations included:

What were the specific behavioral mechanisms in the processes of conflict progression and implementation of resolution strategies?

Did children with children with LI experience similar types of conflicts, i.e. conflicts due to similar causes, as children with TL?

Did children with LI reconcile conflicts at the same rate as children with TL?

Was conflict resolution affected by characteristics of the conflict itself or the situation in which it arose?

What propensity was there for displaying reconciliatory behavior?

What types of reconciliatory behaviors did the children display?

To what extent were the displayed reconciliatory behaviors subsequently accepted by the opponent, and what were the verbal qualities of those accepted reconciliatory behaviors?

To what extent did the children exhibit non-affiliative conflict resolution strategies, i.e. aggression and withdrawal?

Did displays of differing non-affiliative behavior have differing influences on the likelihood of reconciliation?

Was the frequency of social interaction following conflict situations influenced by conflict resolution abilities, preceding conflict interchanges, or communicative status prior to conflict outbreak?

The ultimate aim of this thesis was to discern eventual problems that lead to the conflict resolution difficulties that the educators have observed within the group of children with LI.

MATERIAL & METHODS

Subjects

The target children of these studies were 31 males between four and seven years old. Twenty children were classified as typically developing (TL), as they passed through the routine examinations applied in the Swedish social system (Hergilis 2000) without detectable language difficulties or related social problems. This has further been verified by teacher and parent reports. The children with TL attended one of six municipal preschools. The 11 boys, classified with language impairment (LI), attained positive results during the routine controls and were unable in mainstream preschools to develop language and social skills, even with the support of personal assistants and speech and language pathologists. Local clinicians diagnosed the target boys with combined expressive and receptive language impairment, prior to this study. The assessments of the children's linguistic, pragmatic and cognitive abilities were not conducted for the purpose of this research; therefore an array of assessment methods and standardized tests had been used. The children with LI attended a specialized preschool for children with acute language difficulties without physical, neurological or mental developmental abnormalities. The language preschool is one of few currently caring for children with acute language disabilities in the Stockholm region. The reader is referred to Papers II-IV in the back of the thesis for a detailed description of the criteria that defined the distinction between the two groups.

The cohort of children studied was restricted to boys, who were 4-7 years old. This judgment is based on earlier findings indicating 3 year-old boys reconcile significantly fewer conflicts than girls of the same age or 4-6 year-old boys (Westlund 2003). The male gender was chosen because boys represent the majority of children attending the language preschool, and boys are overrepresented in the population of children with LI (Johansson & Samuelsson 1999; Stackhouse & Wells 1997). Therefore collecting data on the boys in the language preschool provided a data set large enough to withstand statistical analysis and the results may be more reliably generalized to the LI population. The distribution of the children's ages and the range of conflicts experienced by the target subjects are listed below in Table I.

Table I. The age and number of children in the studies and the distribution of conflicts per individual.

Boys with TL

<u>age group</u> <u>(mean age-months)</u>	<u>number of individuals</u> <u>in age group</u>	<u>range of conflicts</u> <u>for individuals</u>	<u>mean conflicts</u> <u>per individual</u>
4 years (54.7)	7	18-156	41.3
5 years (65.3)	10	20-83	33.4
6 years (73)	3	17-137	96.3

Boys with LI

<u>age group</u> <u>(mean age-months)</u>	<u>number of individuals</u> <u>in age group</u>	<u>range of conflicts</u> <u>for individuals</u>	<u>mean conflicts</u> <u>per individual</u>
4 years (53.5)	2	8-12	10
5 years (65)	4	7-53	30
6 years (72.7)	3	25-60	38.3
7 years (86.5)	2	15-19	17

The mean age of the boys with TL was 62.8 ± 1.6 months, and of boys with LI was 68.9 ± 3.4 months (Mann Whitney U-Test $Z = -1.654$, ns). The ages of the individual boys were measured at the middle of the respective video recording sampling period for each individual. The results are presented as the Means and Standard Error (SE) of individuals within each group. The reader is referred to the “Statistics” section for further information.

Procedures for data collection & data analysis

The free play of the preschool children was video recorded. No form of experimentation was performed, rather the children’s naturally occurring behavioral patterns were observed during sessions of unstructured play, within typical daily routines at the preschools. The children were not encouraged towards, or discouraged from, being in the room and could choose to stay or leave the room at all times during filming. The children were also able to contact the educators at any time.

The tapes were analyzed and incidents that fulfilled the criterion of Shantz’ mutual opposition (1987) were deemed conflicts. This entails an opponent (aggressor) presents opinions or behaviors to which the other opponent (victim) protests and that the aggressor persists with the offence despite the victim’s apparent objection. Conflict incidences occurred spontaneously and sporadically, and the observations were event based rather than time based. Conflicts involving more than two children were polyadic and were analyzed on the dyadic level, in accordance with earlier studies (Veenema et al. 1994; Ljungberg et al. 1999; Verbeek & de Waal 2001).

Once conflicts were identified, they were further analyzed and the behaviors exhibited immediately preceding, during and directly following the conflict interactions were recorded and coded according to a validated coding system (Ljungberg et al. 1999). During the course of the thesis work, the coding system was further revised with increasingly more stringent definition criteria, which were applied successively to all conflict analysis, including those coded in earlier stages of coding. The following was included in the coding of identified conflicts:

1. A period of 15 seconds prior to conflict outbreak, the *pre-conflict period*, was examined as to whether social interaction was present between opponents. In brief, social interaction entails that both partners receive a response from the other to a communicative turn.
2. The *conflict period* encompasses the interchange of mutual opposition, from which the cause of conflict was identified and categorized (Table II). The *conflict period* is terminated when opponents no longer persist in the conflict opposition, which is signified by a change of focus in the interaction, i.e. an opponent gives in, walks away, etc.
3. Following *conflict period* termination, in the *post-conflict period*, the exhibitions of affiliative, i.e. reconciliatory, behaviors were identified and categorized (Table III). The *attempt rate*, *acceptance rate* and *verbalization* of these reconciliatory behaviors were investigated, and *reconciliation rates* were calculated. These measures are described further below. Moreover, non-affiliative behaviors were identified and categorized (Table IV). The exhibition rate and the role in conflict resolution of these non-affiliative behaviors were investigated. The *post-conflict period* is terminated when a conflict is reconciled or if 90 seconds pass without either opponent exhibiting any type of *post-conflict period* behavior.
4. In the two minutes after *post-conflict period* termination, in the *succeeding non-conflict period*, it is determined whether opponents were involved in social interaction.

The distinction of the four time periods of peer conflict that is described above, including the general investigations in each time period is illustrated in Figure 1.

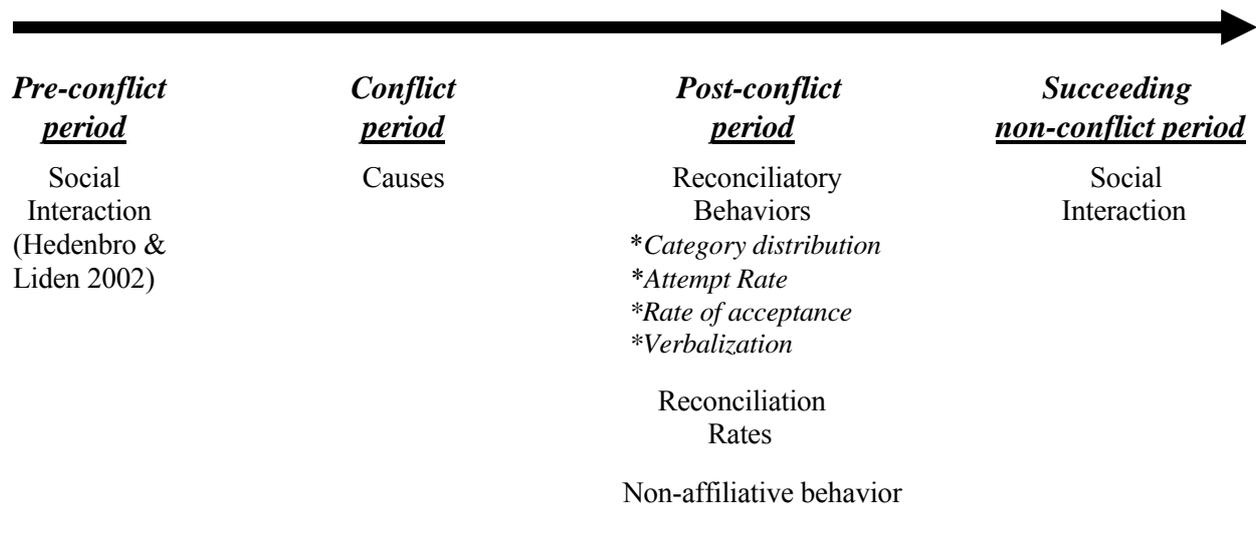


Figure 1. Conflict elements within the respective periods of conflict progression.

Measures

Social interaction in the *pre-conflict period*

Social interaction was defined, according to Hedenbro and Lidén's (2002) concepts of communicational turn taking, as a mutual flow of interaction, not just close proximity. This definition corresponds with definitions used by Sackin and Thelin (1984) and Laursen and Hartup (1989) excluding that in these studies physical distance between children was excluded as a determining factor of the presence of social interaction. Here, two children involved in the same role-play were considered to be socially interacting, but two children sitting next to each other solving different puzzles or drawing different pictures, and not conversing were not considered to be socially interacting. Social interaction was identified by criteria of a minimum three turn interchange, in which an initiating individual's behavioral turn was responded to by a second individual, who in turn was responded to by the first individual. A time period of fifteen seconds prior to conflict onset, in the *pre-conflict period*, was examined as to whether an established contact existed between the opponents of the subsequent conflict.

Conflict causes identified in the *conflict period*

The causes of conflicts, constituting the *conflict period*, were grouped into five categories (based on Ljungberg et al. 1999) in Paper I. One conflict cause category, *aberrance*, was not recognized prior to analysis of the film material on the children with LI, and was therefore only included in Papers II-IV. However, the category *aberrance* was established within the development of the coding system. Subsequently, the coding of all conflicts was updated accordingly; and conflicts that escalated to an obvious breakdown in reciprocity of interaction (see Table II) were deemed *aberrance*, regardless of the initiating conflict cause. The categories of conflict causes are exhaustive and mutually exclusive. These conflict cause categories are listed, defined and exemplified in Table II.

Table II. The definition of each of the identified conflict cause categories

<u>Conflict cause</u>	<u>Definition</u>
Abstract competition	Dispute over rules, roles, and social order in games and role-play <u>Example:</u> argument of who is the mother when playing house/ whether one is to count 20 or 30 in hide and go seek
Object competition	Dispute over possession or accessibility to an object <u>Example:</u> two children have put together train tracks and reach for the same boxcar and reciprocally claim it as their own
Physical harm	Physically hurting another child to the point of opposition from the victim, often done unintentionally <u>Example:</u> during a pillow “fight” one child accidentally swings the pillow in the others’ eye, and the victim protests due to pain
Psychological harm	Verbal aggression by teasing, name-calling, insults, exclusion etc. <u>Example:</u> a child loses a game and another laughs even after it is protested/ a child is denied to participate in an ongoing activity
Activity competition	Disruption of one child’s activity by another child’s activity, including a subcategory, <i>destruction of property</i> , i.e. damage of an object or construction considered valuable to the victim <u>Example:</u> children playing tag, run through the scene of other children playing house, whose role-play is disrupted/ a child in a pillow “fight”, most likely accidentally, hits and scatters the train tracks of another child
Aberrance	A child intensifies play behavior in an interaction so the play is no longer reciprocal and the playmate is hindered in turn-taking, or in an initially <i>non-aberrant</i> conflict, protests are no longer directed towards the opponent in a reciprocal exchange, rather opposition escalates to sudden, seemingly unmanageable screaming and physical episodes <u>Example:</u> during a pillow “fight” one child suddenly escalates play behaviors and swings so intensively the other partner cannot participate as a player in the game/ two children reach for the same boxcar and each claim it as their own, with the protest “its mine”, however subsequently this utterance is then escalated through seemingly screaming, repeatedly to himself while possibly kicking the train track to smithereens, etc.

The distribution of conflict causes was determined by dividing the number of the individual’s conflicts caused by each category by the total number of conflicts the individual had participated as an opponent. The overall distribution of conflict causes was determined. Also, the mean proportion of the conflicts caused by *aberrance* was calculated separately for the conflicts with, respectively without, social interaction in the *pre-conflict period*.

Post-conflict period reconciliatory behaviors

Behaviors in the *post-conflict period* identified as pro-social, reconciliatory behaviors were organized into six categories (based on Ljungberg et al. 1999), which are listed and defined in Table III.

Table III. The definition of each of the identified post-conflict reconciliatory behaviors

<u>Reconciliatory Behavior</u>	<u>Definition</u>
Invitation to play	Play behavior that may potentially be an initiating behavioral turn in a play exchange, a gesture or comment suggesting a former opponent is open to resuming or starting play
Body contact	Friendly physical contact and affection, as touching, holding hands or embracing
Self-ridicule	A form of diversion and exaggeration in which a former opponent makes fun of himself, seemingly with intention of amusing his former opponent and possibly minimizing the seriousness of the original offence
Cognitive	Behavior characteristic of cognitive abilities, as information is processed through abstract representation, such as, an offer of an abstract privilege, i.e. playing the desired role in a role-play, being first in a line or to take a turn in a game, or negotiation in which both former opponents benefit
Object offer	An offer of an object from one former opponent to another
Verbal apology	Verbal expression of remorse or regret for one's behavior

The distribution of reconciliatory behavior was calculated by recording the individual's first displayed reconciliatory behavior that was subsequently accepted by the opponent, in each category, in each conflict. Thereafter, the number of the behaviors displayed by the individual in each category was divided by the total number of reconciliatory behaviors the individual had exhibited. The overall distribution of reconciliatory behaviors was considered, as well as the distribution of reconciliatory behavior in relation to the causes of conflicts.

Reconciliatory behaviors were considered accepted when the child to whom the behaviors are addressed showed acceptance, through a nod, a smile, acceptance of an offered object or participating in an invited play activity, etc. (Ljungberg et al. 1999). The mean percent of individually exhibited reconciliatory behaviors that were subsequently accepted by the opponent was called the *acceptance rate*. The *acceptance rates* of the specific behaviors within each reconciliatory behavior category, as well as the overall *acceptance rate* were determined.

The mean share of conflicts in which the individuals attempted reconciliation, i.e. exhibited a reconciliatory behavior (regardless of acceptance) was termed the *attempt rate*. The overall *attempt rate*, and separate *attempt rates* for conflicts with, respectively without, social interaction in the *pre-conflict period* and in relation to the *aberrant* causes of conflicts were calculated.

The *verbalization* of accepted reconciliatory behavior was also investigated. "Verbal" was defined as, an utterance, with a minimum of one intended word (not just noises), directed towards a specific individual, and intended to communicate specific information. *Verbalization* was determined for accepted reconciliatory behaviors. It was then determined for each conflict whether the accepted reconciliatory behaviors that were displayed by the individual were *verbal only*, *non-verbal only*, *both verbal and non-verbal* or that the individual had not exhibited any accepted reconciliatory behavior in the conflict (*no accepted reconciliatory behaviors*). Consideration was not taken to whether the individual had displayed unaccepted behaviors or not, or whether the opponent had exhibited reconciliatory behavior or not. The distribution was calculated by dividing the number of conflicts in which the individual's accepted reconciliatory behaviors fitted each of the categories above by the total number of conflicts in which the individual was an opponent.

Reconciliation rates were calculated by dividing the number of conflicts an individual target subject had attained reconciliation (regardless of whether he, his opponent or both initiated the reconciliation) by the number of conflicts the individual participated as an opponent. Reconciliation rates were calculated for overall conflicts, as well as separately for conflicts with, respectively without, social interaction in the *pre-conflict period*, in relation to the *aberrant* causes of conflicts, and for conflicts in which specific *post-conflict* non-affiliative behaviors were, respectively were not, initially exhibited (described further below).

Post-conflict non-affiliative behavior

Behaviors in the *post-conflict period* that were identified as non-social and non-affiliative were classified into either *aggression* or one of the two forms of withdrawal behavior, *active* and *passive*. These non-affiliative behaviors are listed and defined below in Table IV.

Table IV. The definitions of identified non-affiliative behavioral categories

<u>Non-affiliative behavior</u>	<u>Definition</u>
Aggression	Unfriendly behaviors, including revenge, verbal or physical retaliation between conflict opponents, or redirected towards an individual other than the opponent or towards an inanimate object
Withdrawal	
<i>Passive withdrawal</i>	Behavior which may seem inappropriate and unjustified to the situation, such as; auto-manipulation, repetitive manipulation of objects, rocking back and forth or irrelevant vocalizations, a withdrawal within oneself
<i>Active withdrawal</i>	Physically departing from the conflict scene and from the conflict opponent through leaving the room

The individual frequency of non-affiliative behaviors was calculated by dividing the number of conflicts in which the individual displayed the behavior before acceptance of a reconciliatory behavior or before the *post-conflict period* was concluded, by the total number of conflicts in which the individual participated as an opponent. Consideration was not taken to the number of displays, if a behavior from another category was also displayed, or if the opponent had displayed the behavior or not. The occurrence of non-affiliative behaviors was also calculated separately for the conflicts with, respectively without, social interaction in the *pre-conflict period*.

The reconciliation rates were calculated for conflicts with and without the described non-affiliative behaviors, without regard to whether the individual had displayed the non-affiliative behavior himself or whether he had encountered his opponent displaying the non-affiliative behavior. This method aims to outline the elements that may have hindered or been incorporated into the reconciliatory process.

Conflicts, in which either the individual or the opponent exhibited *aggression*, were further examined by calculating the reconciliation rates for the conflicts that included *reciprocal aggression* (both opponents display aggression), and conflicts with *non-reciprocal aggression*. In addition, the reconciliation rates of conflicts including *aggression* are also calculated separately in relation to whether the *aggression* was of a verbal character or not, or included both verbal and non-verbal behaviors. “Verbal” is again defined as, an utterance, with a minimum of one intended word (not just vocalizations).

Social interaction in the *succeeding non-conflict period*

The degree to which children socially interact in the two minutes following *post-conflict period* termination was examined. Social interaction was defined as stated above in the description of *pre-conflict period* social interaction.

In Paper I, the TL group's mean percent of the individual conflicts with social interaction in the *succeeding non-conflict period* was calculated separately for conflicts in the four following categories: reconciled conflicts with social interaction in the *pre-conflict period*, reconciled conflicts without social interaction in the *pre-conflict period*, non-reconciled conflicts with social interaction in the *pre-conflict period* and non-reconciled conflicts without social interaction in the *pre-conflict period*. In Paper III the proportion of conflicts with social interaction in the *succeeding non-conflict period* was calculated for total recorded conflicts and thereafter separately for conflicts with, respectively without social interaction between opponents in the *pre-conflict period*, reconciled, respectively non-reconciled conflicts, and *aberrant*, respectively *non-aberrant* caused conflicts.

Reliability of coding

In order to obtain inter-observer reliability coding, two of the original observers (T. Ljungberg & K. Westlund) independently analyzed approximately 6.5 hours of randomly selected material, distributed over three of the preschools during five different sampling periods, which amounted to 58 conflicts. An overall kappa coefficient (Cohen 1960; Bakeman & Gottman 1986), covering conflict identification, determination of aggressor and victim, conflict cause, distinction between conflict termination and *post-conflict period* commencement, identification of *post-conflict* reconciliatory and non-affiliative behaviors, was calculated and averaged $k = 0.92$ (ranged from 0.79 to 1.0).

The original observers trained additional coders (myself & L. Jansson), and subsequently reviewed the majority of conflict protocols that the trained observers had completed. The trained observers further developed methods to identify *aberrant* caused conflicts, determine the verbal character of *post-conflict period* reconciliatory behaviors and *aggression*, and to identify reciprocal interaction in *pre-conflict* and *succeeding non-conflict periods*, which in turn, successively refined the coding system with increasingly stricter criteria. The refined criteria were applied successively to all conflict analysis, including those coded in earlier stages of coding. Disagreements were discussed systematically until a consensus was reached. This process was conducted during all stages of data collection and contributed extensively to the training of observers, revision of the coding system and limited the subjectivity of the two original observers. In addition, towards the conclusion of conflict analysis, all conflicts were revisited, within a limited time frame, to ensure that coding was interpreted in a similar manner.

Ethical note

The Human Ethical Research Committee at the Karolinska Institutet approved the studies (Dnr 93-231, 94-247, 94-283, 96-085, 97-250, 00-039). Also, the parents gave consent to include their children in these studies and had the option of withdrawing the children from the studies at any time. The children were shown the location of the recording equipment at the onset of each of the studies and it was explained to them that we were to examine how they solved conflicts with one another. The children quickly became accustomed to the recording equipment and took no notice after a day or two.

STATISTICS

All data was calculated at the individual level and presented as the Means and Standard Error (SE) of the individuals in the corresponding groups. Throughout the investigation, the individual children were the unit of analysis (the “n”), and not conflicts. However, the conflicts each individual was an opponent in were the components on which the individual data points were calculated. Thereby, the relative shares presented are mean proportions of the observed conflicts for the individuals within the respective group, and not frequencies of the play recorded or conflicts collapsed across the individuals of a group. The data was calculated on the individual level to ensure that all individuals were represented equally within each group and that no particular individual dominated the Mean results of a group in statistical analysis.

In paper I, the number of individuals included was 20 boys with TL, unless otherwise stated. In Papers II-IV, the number of individuals included was 20 boys with TL (n_1) and 11 boys with LI (n_2), unless otherwise stated. Because the analysis is at such a detailed level and included often tests with several dependant variables, it did occur that individuals had missing data values in one of the dependant variables. In those cases the individual was omitted in the particular analysis and the Means \pm SE were calculated only on the boys with full data sets. The “n” for the relevant analysis is then specified. The number of conflicts that were included in each calculation of individual data points varies depending on whether the individual’s conflicts met the criteria for the relevant test.

Non-parametric statistics were used in all statistical comparisons. In Paper I, comparisons between three or more intra-group data sets were conducted with Friedman’s two-way analysis of variance by ranks-test (henceforth referred to as Friedman). The Wilcoxon signed-rank Test (henceforth referred to as Wilcoxon) was used for comparisons within each group, between two intra-group data sets in each of the papers. In Papers II-IV, the Mann Whitney U-Test (henceforth referred to as Mann Whitney) was used for comparisons between the two groups.

In Paper I, comparisons were conducted within the single TL group. In Papers II-IV, comparisons were conducted between the TL group and the LI group, as well as within the groups, which significantly increased the multiplicity of the statistical tests. Multiple tests increase the likelihood of committing a type 1 error (incorrectly rejecting a true null hypothesis), which is reduced in Papers II-IV by lowering α (the p-value) from the customary 0.05 to 0.01, in accordance with the Bonferroni correction (Wonnacott & Wonnacott 1977). Consequently, in the cases the same data set was used both in a statistical comparison between the groups and a statistical comparison within the group, the results to these multiple tests with a significance level between 0.05 and 0.01 are mentioned as statistical trends but conclusions are drawn only from results with significance levels reaching below 0.01. The statistical results are illustrated in figures with *, **, *** representing significance levels reaching below 0.05, 0.01 and 0.001, respectively. Non-significant p-values are presented as “ns” in the text.

RESULTS & DISCUSSION

A range of key results are presented and discussed below. Several results are presented in order to rule out the suspicions of some multiple factors and to give support for the general conclusions that were drawn. For additional complementary investigations and detailed statistical information, the reader is referred to the articles in the back of the thesis.

In Paper I the conflict progression of the boys with TL was mapped out in detail and the basic features of the coding system were validated. Paper I is presented and discussed separately.

In Papers II-IV different aspects of conflict progression were measured in both the group with TL and the group with LI, and thereafter compared within and between the groups. Conflict causes and reconciliatory behaviors shown in the *post-conflict period* were examined in Paper II. The deviations between the two groups that were uncovered in Paper II were further examined in Paper III, in particular whether group differences may be related to whether opponents socially interacted in the *pre-conflict period* or whether opponents establish social interaction in the *succeeding non-conflict period*. In Paper IV, the proportion of conflicts in which individuals displayed *post-conflict period* aggression and two forms of withdrawal was examined. Also, the rate of displaying non-affiliative behavior was further investigated in relation to whether social interaction existed between opponents in the *pre-conflict period*. Further, the degree to which exchanges of non-affiliative behaviors may influence the likelihood that reconciliation will be attained was also examined in Paper IV. Papers II-IV are presented and discussed together, to give a comprehensive view of the behavioral difficulties the boys with LI experience, in comparison to the boys with TL.

PAPER I

Communicative factors, conflict progression and use of reconciliatory strategies in pre-school boys - a series of random events or a sequential process?

Each of the five the conflict causes identified in this study correspond with more general issues initiating peer conflict, which were described in earlier research (Caplan et al. 1991; Dawe 1934; Hartup et al. 1988; Killen & Naigles 1995; Killen & Turiel 1991; Shantz 1987; Strayer & Strayer 1980). However, the distribution of peer conflicts in relation to conflict causes cannot reliably be compared with these studies, because in the current study the categories were more distinct (Hartup et al. 1988), conflicts were observed in naturalistic free-play rather than structured environments (Killen & Naigles 1995; Killen & Turiel 1991), conflicts between the children and adults were not included in statistical analysis (Killen & Turiel 1991), and conflicts between toddlers and children under the age of four years were not included (Caplan et al. 1991; Killen & Turiel 1991). Furthermore, in this study mutual opposition was the criteria for conflict identification rather than unilateral opposition, which defined incidences of conflict in other studies (Caplan et al. 1991; Hartup et al. 1988; Hay & Ross 1982; Killen & Naigles 1995; Killen & Turiel 1991; Laursen & Hartup 1989; Sackin & Thelen 1984). Therefore, the cited studies included incidents with a child stated a desire, and the "opponent" refused, but the first child may have not found it that important to persist. This does not entail as clear of a competition over resources as when an aggressor reinstates his desire and mutual opposition is established. Nevertheless, it may be discerned in previous studies that in general toddlers typically dispute

more concrete issues, such as access to objects, where as social disagreements are more representative of conflicts between older preschool children (Caplan et al. 1991; Chen et al. 2001; Hay et al. 2004; Kolominskii & Zhiznevskii 1990; Laursen et al. 2001; Shantz 1987; Strayer & Strayer 1980). This was also found in the current study in the distribution of conflict causes, as *abstract competition* and *psychological harm* together caused more than half of the conflicts, but conflicts caused by *object competition* made up only approximately 1/4 of the conflicts.

In further analysis, four of the five conflict causes were found to be linked with whether opponents socially interacted in the *pre-conflict period*. Conflicts due to *abstract competition* and *physical harm* represented a larger mean proportion of conflicts in which opponents had socially interacted in the *pre-conflict period* than conflicts without social interaction between opponents prior to conflict outbreak (Wilcoxon: $T = 45, p < .05$; $T = 20, p < .005$, respectively). In contrast, conflicts caused by *psychological harm* and *object competition* were more likely to emerge from a context without social interaction than a context with social interaction between opponents in the *pre-conflict period* (Wilcoxon: $T = 27, p < .05$; $T = 45, p < .05$, respectively). These links are illustrated below in Figure 2.

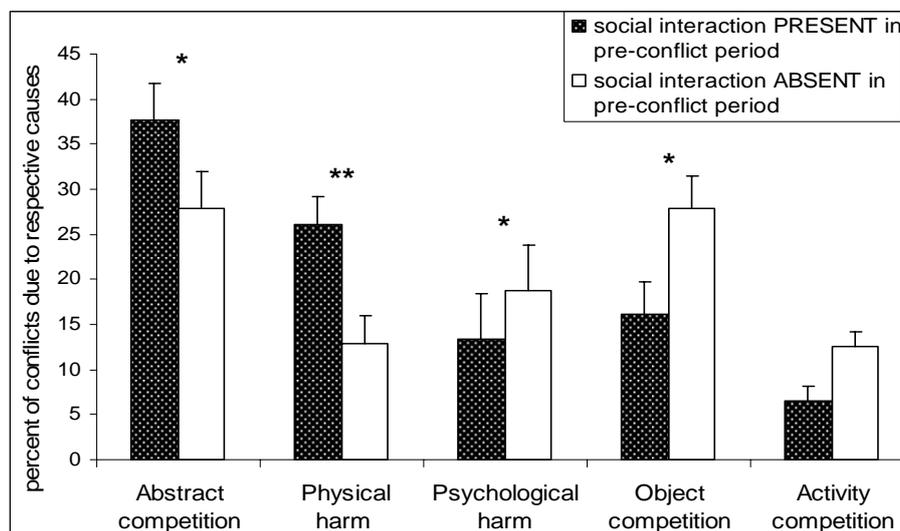


Figure 2. Conflict cause distribution related to whether social interaction existed between opponents in the *pre-conflict period*. Data are shown as Mean + SE.
* $p < .05$, ** $p < .01$

The association between communicative status prior to conflict initiation and the distinctive issues of peer conflict that ensued was established in the current study, but have rarely been investigated previously. However, in more general terms the cause of peer conflict between small children has been reported to be related to whether the opponents had interacted or not prior to conflict outbreak (Laursen & Hartup 1989).

In the examination of post-conflict affiliative, i.e. reconciliatory behaviors, excluding *self-ridicule*, the other five identified reconciliatory behaviors are described in more general behavioral categories, as well as distinct conflict resolution strategies in previous research (Hartup et al. 1988; Iskander et al. 1995; Killen & Naigles 1995; Killen & Turiel 1991; Maccoby 1996; Sackin & Thelin 1984). Comparisons of the distribution of reconciliatory behavior with other studies are difficult due to methodological issues. Different coding systems were used that did not include a distinction between behavior terminating the oppositional exchange, pro-social behavior in a post-

conflict period and pro-social behavior in a succeeding non-conflict period, as was recognized here. Also, in previous studies data were often pooled and unilateral opposition was often the criteria for identification of the conflicts included in statistical analysis. In contrast, in the current study the behaviors of each individual were considered equally, within conflicts entailing mutual opposition. In turn, mutual opposition is theorized to entail a larger investment in the contested resources than when an aggressor relents opposition directly after a victim's protests, and therefore may entail different qualitative types of resolution behavior. Nonetheless, in an earlier study that examined behaviors exhibited to resolve peer conflict, a general trend may be discerned. A large representation of initiations to play was found in resolution of preschool conflict, whereas verbal apologies and symbolic negotiations were seldom exhibited in conflict resolution (Sackin & Thelin 1984). This was also maintained in the current study, as *invitation to play* was the most commonly displayed reconciliatory behavior while *verbal apologies* and *cognitive* reconciliatory behaviors were rarely offered. Further, Göncü (1987) found in conflict free time periods that such behaviors represented in the category *invitation to play* are more functional in effectively initiating play interactions than role negotiations.

A non-random pattern of conflict progression was apparent, indicating that four of the six categories of reconciliatory behavior were related to the conflict cause. A larger proportion of conflicts due to *physical harm* and *psychological harm* than conflicts caused by the other causes were reconciled with *body contact* (Friedman: $DF = 4; \chi^2 = 14.3, n = 14, p < .01$). *Cognitive* behavior was exhibited seldom in attaining reconciliation; however *cognitive* behaviors reconciled a larger proportion of conflicts due to *abstract competition* than conflicts due to the other causes (Friedman: $DF = 4, \chi^2 = 12.2, n = 14, p < .05$). *Object offers* were mainly reconciliatory responses to conflicts due to *object competition* (Friedman: $DF = 4, \chi^2 = 15.6, n = 14, p < .005$). Also, *verbal apologies* were used to attain reconciliation in a larger proportion of conflicts due to *physical harm* than conflicts due to the other causes (Friedman: $DF = 4; \chi^2 = 17.3, n = 14, p < .005$). This relationship is illustrated below in Figure 3.

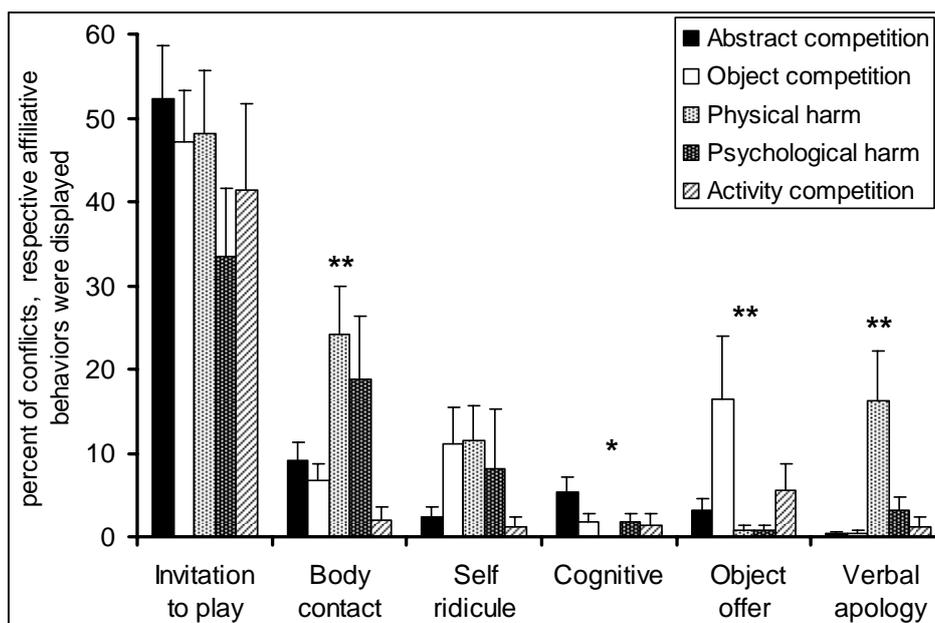


Figure 3. Occurrence of reconciliatory behaviors in relation to the respective conflict cause. Data are shown as Mean + SE.
* $p < .05$, ** $p < .01$

This type of analysis has not been done before and clear links between the types of reconciliatory strategies used and the conflict cause were found. This indicates that the reconciliatory process is sequential, guided by interactions between opponents during the *conflict period*.

In more detailed analysis it was found that the aggressor and the victim initiated reconciliation at similar rates, with the exception of *verbal apologies*, which were offered most often by aggressors (Wilcoxon: $T = 0$, $n = 10$, $p < .01$).

Other studies have drawn conflicting conclusions to whether the conflict aggressor or victim was more likely to initiate reconciliation (Butovskaya & Kozintsev 1999; Botovskaya et al. 2000). However, in the current study the results were based on data calculated on the individual level as opposed to pooled data. Therefore, consideration has been taken to how an individual behaves in a given role of aggressor or victim. Also, *verbal apologies* were the common reconciliatory response to conflicts caused by *physical harm* (see Figure 3), and in this situation most appropriately offered by the aggressor. *Physical harm* in turn represented a larger share of conflicts with, than conflicts without, social interaction in the *pre-conflict period* (see Figure 2). It may be speculated that conflicts due to *physical harm* most likely were due to unintentional offenses, but may entail a greater risk of physical retaliation. Therefore this risk may be lessened by offering a *verbal apology* at a distance. Björkqvist et al. (2000) discussed that children employ conflict resolution strategies entailing the least risk for retaliation from an opponent. However, socialization processes cannot either be disregarded. Children are often encouraged by adults from an early age to say “sorry” when one has done wrong. When someone is physically hurt it can be reasoned that the role of the aggressor is obvious and also is most likely an offence in which adults will model this reconciliatory behavior. For example, if two children argue over the rules to a game, each will assume the other to be in the wrong without analyzing who initiated the conflict. Further, caregivers are unlikely to negotiate or discuss the terms of serious offences against social organizational conventions (for example we eat at the kitchen table, not in the bed) or moral rules (for example intolerance of intentional hitting or name-calling) (Weber 2002). Moreover, when adults hypothetically bump into one another (or their own child for that matter) they are more likely to explicitly say “sorry” than when they may disagree over differences of opinion.

In addition, *acceptance rates* (for the categories of reconciliatory behaviors) differed. Most notably, *verbal apologies* were accepted to a lesser extent than the other reconciliatory behaviors (Friedman: $DF = 5$, $\chi^2 = 13.26$, $n = 6$, $p < .05$).

Others have also found verbal apologies to be least effective in solving social problems with peers (Krasnor & Rubin 1983). In speculation, *verbal apologies* may have been accepted less often because they involve no physical or tangible offering as compared to the original offence, as would be the case when risking *body contacts*, *object offers* or *cognitive* behavior as compromises.

Finally, the data also showed that increased frequencies of social interaction between former opponents in the *succeeding non-conflict period* are positively associated with social interaction in the *pre-conflict period*, both in reconciled conflicts (Wilcoxon: $T = 12$, $n = 18$, $p < .01$) and in non-reconciled conflicts (Wilcoxon: $T = 0$, $n = 7$, $p < .05$). Likewise, former opponents interacted in the *succeeding non-conflict period* following a larger proportion of reconciled than non-reconciled conflicts. This association is consistent both in conflicts with social interaction in the *pre-conflict period* (Wilcoxon: $T = 1$, $n = 18$, $p < .001$), and in conflicts in which social interaction between opponents was absent prior to conflict outbreak (Wilcoxon: $T = 1$, $n = 16$, $p < .001$).

However, a link was not found between the two variables. Conflicts without a communicative exchange between opponents in the *pre-conflict period*, were reconciled at similar rates as the conflicts with social interaction in the *pre-conflict period* (Wilcoxon: $T = 55$, ns).

The relationship between the confounding factors, social interaction in the *pre-conflict period* and reconciliation, and social interaction in the *succeeding non-conflict period* are illustrated in Figure 4.

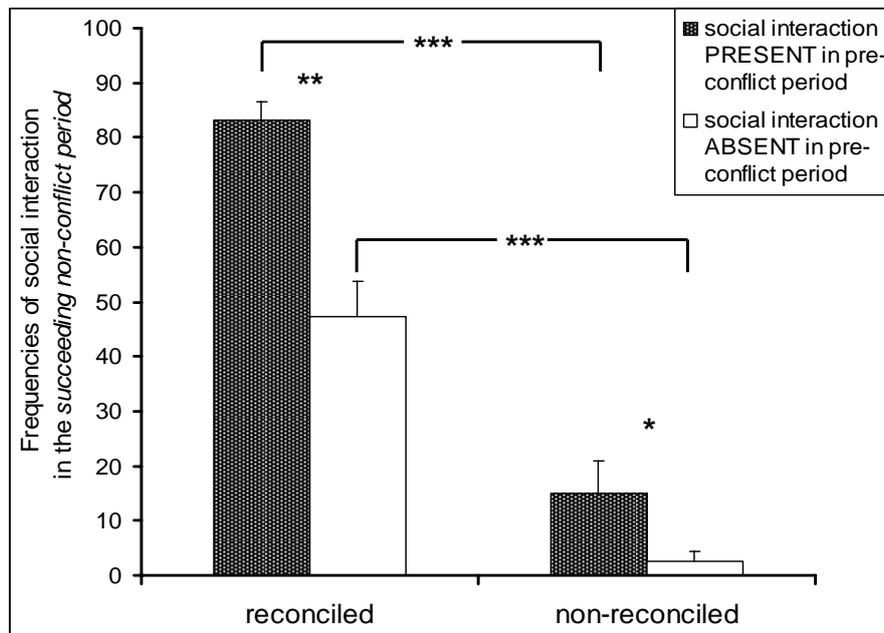


Figure 4. Observed social interaction in the *succeeding non-conflict period* in relation to whether social interaction is present in the *pre-conflict period* and/or whether reconciliation had occurred or not. Data are shown as Mean + SE. * $p < .05$, ** $p < .01$, *** $p < .001$

In previous studies it has been reported that children were more likely to socially interact following reconciled conflicts than non-reconciled conflicts (Sackin & Thelin 1984; Vespo & Caplan 1993). However, the communicative status of opponents prior to conflict outbreak was not considered. Laursen & Hartup (1989) did consider whether opponents interacted prior to conflict and reported that children were more likely to socially interact following conflicts (defined by unilateral opposition), in which the opponents had established a friendly contact prior to the conflict outbreak. Nonetheless, Laursen & Hartup (1989) did not distinguish between behaviors terminating the conflict interaction and reconciliatory behavior in a post-conflict period, therefore methodological issues did not allow a comparison in relation to reconciliatory outcome. Alternatively, Verbeek and de Waal (2001) took a more comprehensive approach and found both social interaction prior to conflict outbreak and successful reconciliation functioned as confounding factors that were positively associated with higher rates of social interaction following the conclusion of the *post-conflict period*. This was confirmed in the results of the current study. Further, it was established here that in the target children, there was not an observable link between social interaction in the *pre-conflict period* and the likelihood of reconciliation. If conflicts were preceded by social interaction and thereafter reconciled, the children engaged in social interactions in the *succeeding non-conflict period* in more than 80% of the cases, in excess of 16 times more than after non-reconciled conflicts in which interactive play was not present in the *pre-conflict period*.

In sum, it was found that the boys with TL exhibit a predictable behavioral pattern in conflict management, in which each behavioral turn was associated with the opponents' previous behavioral interchanges immediately preceding and within the conflict and *post-conflict* interaction. The relationships between the isolated features of conflict progression are summarized below in Figure 5.

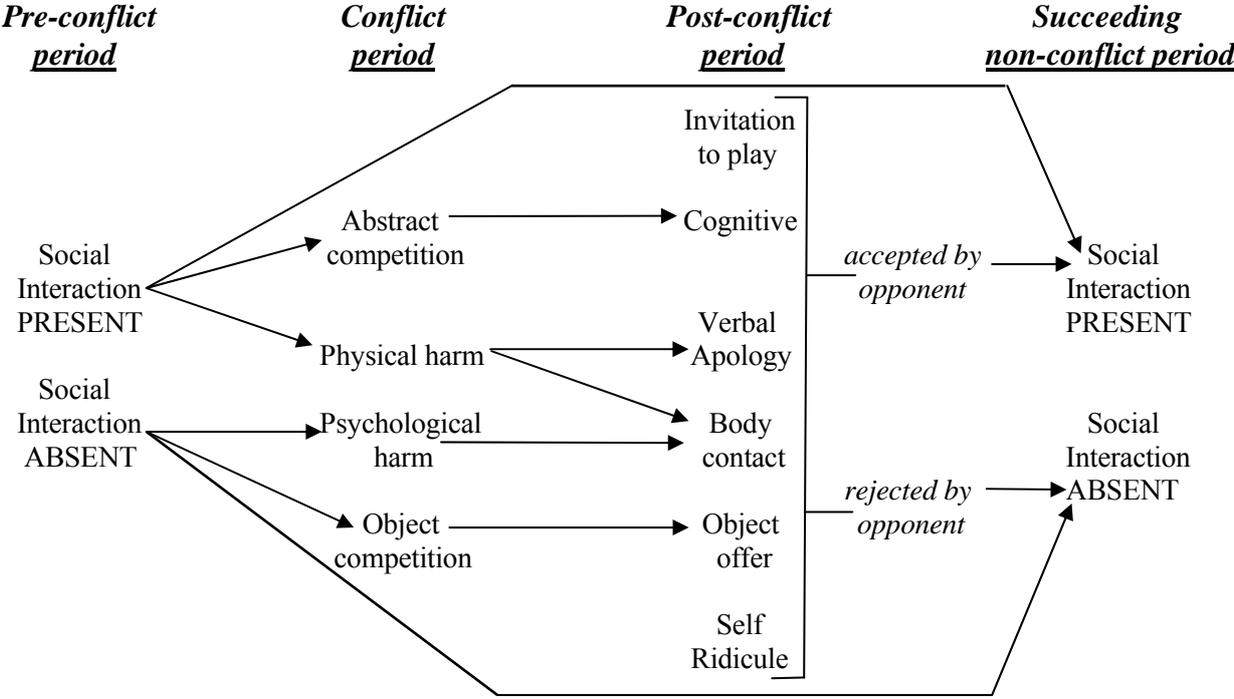


Figure 5. A simplified presentation of paths for the behavioral trajectories observed within peer conflict.

Earlier researchers have put forth that peer conflicts are predictable events of socially organized communicative interaction and not random behaviors or breakdowns of reciprocity, with each behavioral turn influencing the responsive behavioral turn (Hay & Ross 1982; Killen & Turiel 1991; Laursen & Hartup 1989; Lein & Brienneis 1978). Peer conflicts between children in middle childhood have also been shown to represent structured patterns in regard to the semantic content and style of speech use (Brenneis & Lein 1977). The results presented in Paper I indicate that peer conflicts between preschool boys with Language Impairment (LI) should be investigated at the minute level in order to determine which sequentially dependant elements of conflict progression may differ from those found for the boys with TL, and may contribute to the problematic conflict resolution that was reported by the educators.

PAPERS II-IV

Paper II: *Behavioral patterns of conflict resolution strategies in pre-school boys with language impairment in comparison to boys with typical language development*

Paper III: *Reciprocal interaction prior to conflict outbreak in relation to conflict resolution progression in preschool boys with language impairment*

Paper IV: *Aggression and withdrawal behavior in conflict resolution progression in preschool boys with language impairment in comparison to preschool boys with typical language development*

The mean reconciliation rates for overall conflicts were $63.6 \pm 2.0\%$ for the boys with TL and $47.3 \pm 4.5\%$ for the boys with LI, marking a significant group effect (Mann Whitney $Z = -2.913$, $p < .01$) (Paper II). The specific findings in Papers II-IV fall under two main themes of behavioral characteristics of the children with LI, which contribute to the overall lower reconciliation rates of the boys with LI. These themes are first presented in succession. The first theme entails that the boys with LI were observed to have a strong reluctance towards initiating reconciliation and an evident inclination towards withdrawal. This non-assertiveness and withdrawal were found to stem mainly from conflicts in which the opponents had not socially interacted in the *pre-conflict period*, and therefore did not have an immediate common reference point from which to initiate reciprocal interaction. The second theme entails that when the boys with LI had expressed aggressive or more emotionally charged behavior, they appeared to have specific difficulty in concluding the behavioral turn and the aggressive behavior escalated. Thereby reciprocal interaction could not be maintained. Finally, to bring to a close, investigations into the factors that may contribute to whether conflict opponents were able to reconnect in the *succeeding non-conflict period* are presented and discussed.

Theme 1: Non-assertiveness & overt withdrawal

The boys with LI, as compared to the boys with TL, reconciled a comparatively smaller proportion of conflicts through exclusively verbal behaviors (Mann Whitney: $Z = -2.830$, $p < .01$), without non-verbal behavioral compensation (Mann Whitney: $Z = -.599$, ns) (Paper II). These findings are in agreement with other research that did not find children with LI to compensate a lack of verbal pro-social behavior with non-verbal friendly interaction (Bishop et al. 2000; Brinton et al. 1998a; Brinton & Fujiki 1999; Fujiki et al. 2001).

In addition, in a larger share of LI conflicts the individuals did not exhibit reconciliatory behavior that was in any case accepted by the opponent (Mann Whitney: $Z = -2.973$, $p < .01$) (Paper II). In speculation, this may not only be a reflection of lower reconciliation rates or even a suggestion of an inhibition towards attempting reconciliation, given that the individual's opponent may have displayed a reconciling behavior or the individual may have displayed reconciliatory behavior that was not accepted by the opponent. Rather, one may reason that this result indicates that when the boys with LI did display reconciliatory behaviors they did so through unilateral exchanges, i.e. one opponent offers reconciliation and the other opponent accepts, without reversal of reconciliatory roles. This interpretation suggests that the social strategies of the boys with LI may lack a reciprocal quality in comparison to the social strategies of the boys with TL. Social interactions of poor quality, in respect to the reciprocity between partners, may be insufficient to support developmental social training (Hadley & Rice 1991), which may have otherwise been internalized and referred to in subsequent conflict interactions.

Furthermore, behaviors judged to be more cognitively demanding and require perspective-taking skills, have been reported to be suggested and displayed less frequently by children with LI (Brinton et al. 1998b; Cohen et al. 1998b; Fujiki et al. 1997; Grove et al. 1993; Steven & Bliss 1995). *Cognitive* reconciliatory behaviors were hypothesized to require relatively more advanced language and cognitive levels, as they included abstract offerings and negotiation. However, the TL group and the LI group did not differ in the distribution of reconciliatory behaviors (Paper II).

This result indicates that when the boys with LI did display reconciliatory behaviors the pro-social behaviors were of a similar character as the behaviors exhibited by the boys with TL. Therefore, the type of affiliative behaviors that were displayed were not implicated in the LI lower reconciliation rates. As discussed by Schmitt & Grammar (1997), the complexity of a particular behavior is not the factor that influences social acceptance, rather the effects of that particular behavior.

In addition, the *acceptance rates* of reconciliatory behaviors offered by the individuals of the TL group and LI group did not differ (Mann Whitney: $Z = -.271$, ns) (Paper II). However, despite this, a substantial group effect was uncovered in the *attempt rates*, as the boys with LI exhibited reconciliatory behavior in a smaller proportion of conflicts than the boys with TL (Mann Whitney: $Z = -3.733$, $p < .001$) (Paper II). This is illustrated below in Figure 6.

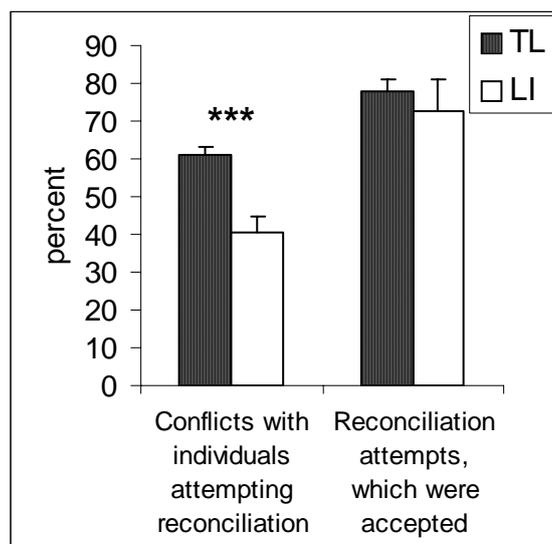


Figure 6. The rate of acceptance of displayed reconciliatory behaviors and the frequency of attempted reconciliatory behaviors. Data are shown as Mean + SE.
 *** $p < .001$

Reluctance towards initiating contact was evident despite findings that the boys with LI were as successful in executing reconciliatory behaviors. Children with communication disorders have been found previously to score low on pro-social behavior measures, but in the cases that they had initiated contact with a peer, they were as successful in attaining social interaction as children with typical language development (Guralnick et al. 1996). Asserting oneself and initiating conversational turn-taking are recognized as problematic tasks for children with LI (Craig 1993). Nonetheless, assertiveness is an important element of negotiation and conflict resolution (Stevens & Bliss 1995; Brinton et al. 1998b).

In further analysis, sometimes, reconciliatory behavior was not an immediately spontaneous response to conflict, and non-affiliative behaviors were commonly exhibited in both groups. However, the boys with TL are more likely to display *aggression* than *active withdrawal*, whereas the opposite was found for the boys with LI. The boys with LI displayed *aggression* in the *post-conflict period* in $19.0 \pm 4.0\%$ of overall conflicts, to a lesser extent than the $30.4 \pm 2.9\%$ conflicts in which the boys with TL exhibited *aggression* (Mann Whitney: $Z = -2.044, p < .05$) (Paper IV). In contrast, the boys with LI conducted *active withdrawal*, i.e. left the room, in $20.9 \pm 2.5\%$ of overall conflicts, more than two fold the $8.4 \pm 1.7\%$ of the conflicts in which the boys with TL conducted *active withdrawal* (Mann Whitney: $Z = -3.348, p < .001$) (Paper IV).

Although, a group effect was not uncovered in the share of conflicts in which the individuals displayed *passive withdrawal*, this type of behavior is reported to be indicative of increased levels of apprehension and to be displayed in situations that are anxiety inducing (Shibasaka 1988). Therefore, the conflicts, in which with either of the withdrawal behaviors were displayed, were further examined. In these conflicts, *active withdrawal* was represented in $34.6 \pm 6.7\%$ of the TL conflicts, a smaller share than $71.4 \pm 9.0\%$ of LI conflicts (Mann Whitney: $Z = -2.956, p < .01$) (Paper IV).

The results presented here are in agreement with other reports that have described children with LI characteristically demonstrating low levels of aggression and pro-social behavior (Brinton & Fujiki 1999b; Brinton et al. 2000; Fujiki et al. 1997; Redmond & Rice 1998), yet high incidence of withdrawal behavior in varying situations as provoked negotiation situations, on the playground in free play, or when faced with joining an ongoing activity between peers (Brinton & Fujiki 1999b; Brinton et al. 1998b; Fujiki et al. 1999b; Fujiki et al. 2002; Fujiki et al. 2001; Redmond & Rice 1998; Stoneham 2001). Also, parent reports reveal that children with LI often leave the room, in response to conflict rather than talking to find a solution with the parent (Goldman 1987). Gallagher (1999) reviewed evidence suggesting extreme withdrawal may be a function of the role language plays in processing of behavioral regulation.

Certainly there is a fine line between disruptive aggression and healthy assertiveness, which preschool children are challenged with balancing. Nonetheless, that the boys with TL experimented relatively more often with aggressive behaviors allowed them to experience the consequences of these behaviors and refer to the experiences in future oppositional interactions. Further, assertive and aggressive behavior establish personal boundaries that are central to the behavioral dynamics of peer groups, even if aggression rarely leads to immediate positive interaction.

The non-affiliative behaviors were further examined in relation to what degree they may influence the reconciliatory process. *Post-conflict active withdrawal* was associated with lower reconciliation rates within both groups (Wilcoxon: TL: $T = 12.5, p < .001$; LI: $T = 3, p < .01$) (Paper IV) (see Figure 7). *Post conflict aggression* was also associated with lower reconciliation rates within the TL group (Wilcoxon: $T = 22, n = 19, p < .01$) (Paper IV) (see Figure 7). However, most notably, reconciliation rates of TL conflicts with *aggression*, the most representative non-affiliative behavior of the TL group, was higher than reconciliation rates of LI conflicts with *active withdrawal*, the most representative non-affiliative of the LI group (Mann Whitney: $Z = -2.794, p < .01$) (Paper IV) (see Figure 7). Following this line of reason, the reconciliation rates were compared between conflicts with the respective groups' most typical form of withdrawal. The reconciliation rates of TL conflicts with *passive withdrawal*

($58.1 \pm 4.7\%$), were higher than the reconciliation rates of LI conflicts with *active withdrawal* ($23.5 \pm 7.7\%$) (Mann Whitney: $Z = -3.191, p < .01$).

The relations between the non-affiliative behaviors *aggression* and *active withdrawal*, and reconciliation are displayed in Figure 7.

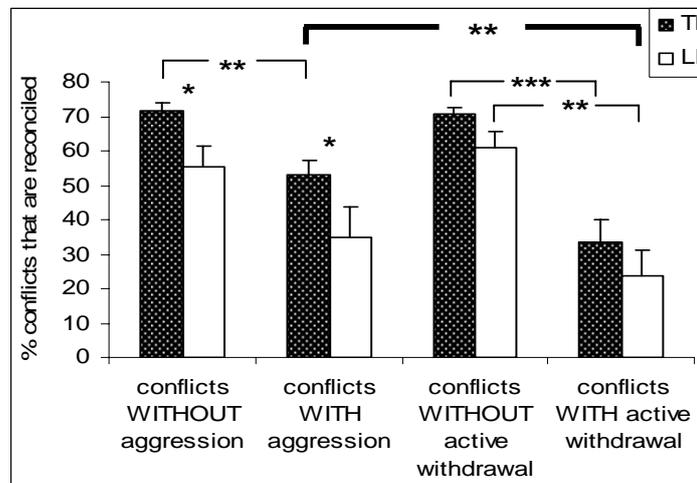


Figure 7. Reconciliation rates of conflicts in relation to whether the individual had exhibited and/or encountered an opponent who exhibited *aggression* or *active withdrawal*. Data are shown as Mean + SE.
 $*p < .05$, $**p < .01$, $***p < .001$

To reiterate, the boys with TL displayed *aggression* in nearly a third of all conflicts, but reconciled over half of those conflicts. In comparison, in over 20% of LI conflicts, an opponent demonstrated *active withdrawal*, but barely 25% of these conflicts are reconciled. Of course, the boys with TL are less likely to attain reconciliation following displays of *aggression*. Nonetheless the boys with TL more often overcame *aggression* and thereafter reconciled, whereas boys with LI in comparison were less likely to overcome *active withdrawal* and then reconcile. Aggressive exchanges may facilitate maintenance of a contact from which reconciliation may be initiated. In contrast, leaving the room, or conducting *active withdrawal*, effectively closes communication lines, or at least complicates establishment of a communicative contact, even in the cases that the child who had conducted *active withdrawal* returned to the conflict scene in the *post-conflict period*.

The differing patterns of displaying non-affiliative behaviors found within the two groups when further investigated, may further suggest that the boys with LI experience difficulties with behavioral regulation. In particular, concluding the expression of emotionally charged behaviors appears to be a specific difficulty facing the boys with LI in relation to attaining reconciliation. This will be discussed further below, however it should be mentioned that it appears that the boys with LI over-regulated emotional intensities and were unable to reduce anxiety levels, but rather progressed to the most extreme form of withdrawal observed with these methods (*active withdrawal*), which is less conducive to reconciliation than the behavior termed *passive withdrawal*. Withdrawal may represent attempts to process and structure more demanding situations (Fujiki et al. 1999b). It may be that in emotionally arousing interactions, as conflicts, short pauses, in the form of *passive withdrawal* may just as well facilitate processing of more complicated linguistic and social information (Cohen & Melson 1980; Stoneham 2001), without terminating communicative contacts as definitively as when *active withdrawal* is conducted.

As noted above, the boys with LI relatively more often exhibited *active withdrawal*. This group effect was restricted to conflicts without social interaction between opponents in the *pre-conflict period* (Mann Whitney: $Z = -2.410, p < .05$) (Paper IV), which is presented in Figure 8.

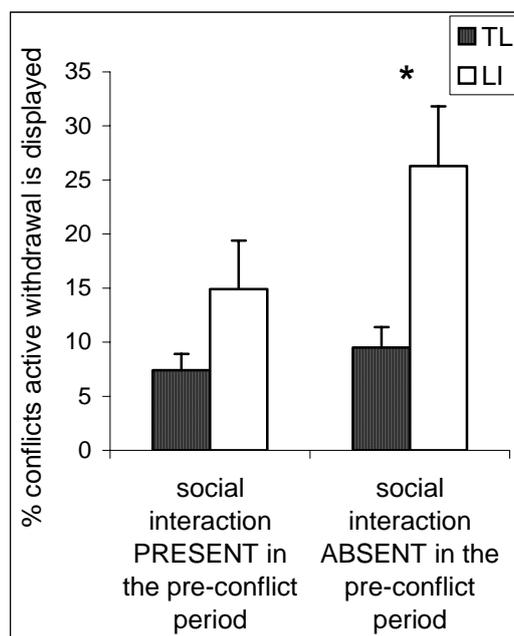


Figure 8. Proportion of conflicts in which individuals exhibited *post-conflict active withdrawal* in relation to whether or not social interaction existed in the *pre-conflict period*. Data are shown as mean + SE.
* $p < .05$, ** $p < .01$

In speculation, when children encountered opposition from an opponent with whom he did not immediately share an interaction, this may have caught the children off guard and caused a deal of anxiety. As noted above, the boys with LI were more prone towards leaving the room than demonstrating *passive withdrawal*, which is speculated here to indicate a more efficient regulation of emotional levels and mitigate what may be debilitating anxiety.

The boys with LI may not only have difficulties in asserting themselves to initiate contact, but will also have limited shared knowledge from which to form expectations of the ongoing *post-conflict* interaction. Children with internalizing behavioral problems use unassertive communication strategies (Hart et al. 2003), and present problem-solving skills of a less reciprocal character than typically sociable children (Adalbjarnardottir 1995).

Furthermore, the boys with LI exhibited reconciliatory behaviors in, and reconciled a comparatively smaller proportion of conflicts than the boys with TL, specifically in conflicts without social interaction between opponents in the *pre-conflict period* (Mann Whitney: attempted reconciliation $Z = -3.389, p < .001$; reconciled $Z = -3.690, p < .001$) (Paper III). In addition, within the LI group, when opponents shared social interaction in the preceding *pre-conflict period*, the boys with LI exhibited reconciliatory behaviors and attained reconciliation in a larger share of conflicts than in the conflicts without social interaction in the *pre-conflict period* (Wilcoxon: attempted reconciliation $T = 0, p < .01$; reconciled $T = 1, n = 10, p < .01$) (Paper III). This effect was not found within the TL group. The relationship between social interaction in the *pre-conflict period* and reconciliatory behavior is displayed in Figure 9.

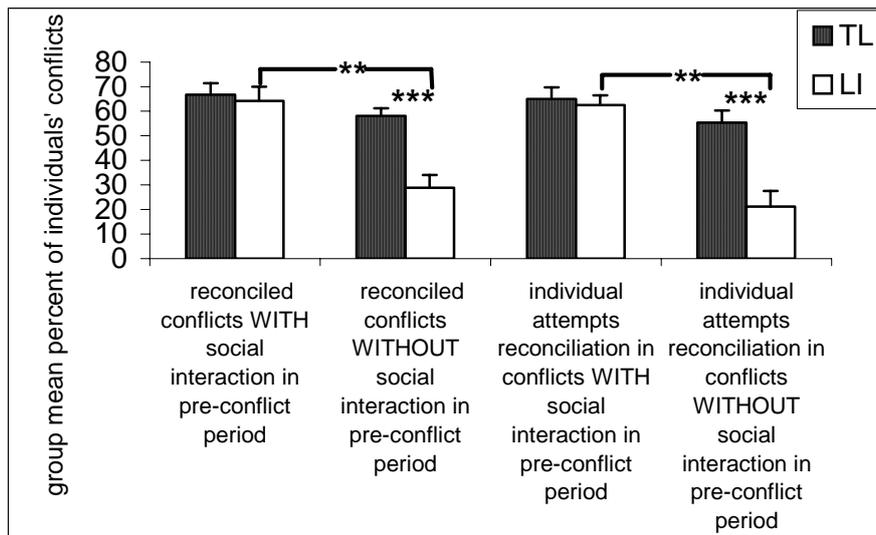


Figure 9. Groups' mean reconciliation rates and rates of individuals attempting reconciliation in relation to social interaction in the *pre-conflict period*. Data were shown as Mean + SE. ** $p < .01$, *** $p < .001$

Once a flow of communication has been open it remains functional in maintaining an available social connection. Even if the ideas being communicated were associated with negative feelings, as in peer conflict, the boys with LI may have utilized this social connection in attaining a subsequent contact, from which reconciliation can be initiated. Craig & Washington (1993) found that children with SLI gained access to an ongoing activity when they recognized a cue from the members of the interacting dyad. Likewise here, the boys with LI may have accessed the interaction prior to conflict outbreak, and recognized this interaction as a potential frame of reference in initiating reconciliation. Children refer to previous interactions to navigate current interactions, which convergently has influence on future interactions (Verbeek & de Waal 2001; Hedenbro & Lidén 2002). Successful navigation of peer interaction entails sharing common knowledge, which allows for common expectations to develop (Goldstein & Gallagher 1992). Communication may be established through referring to this common knowledge (Göncü & Cannella 1996, Malloy & McMurray 1996). In turn, an established communication may serve as a joint focus of attention from which reconciliation may be initiated. Rubin et al. (2001) suggested that children who lack diverse exploration within social interaction effectively lack diversity in social references to serve as frames of reference in subsequent interactions.

A contact just prior to conflict outbreak was more closely related both in time and most likely in subject matter, as opposed to earlier interactions. The boys with TL, in the case opponents had not interacted in the *pre-conflict period*, may use all previous interactions in a relationship with a current conflict opponent as reference points. In contrast, the boys with LI require a more recent and thereby assessable established contact.

It is important to clarify that the boys with TL socially interacted preceding $39.7 \pm 3.7\%$ of conflicts, and the boys with LI socially interact preceding a $46.7 \pm 2.2\%$ of conflicts, which did not constitute a group effect (Mann Whitney: $Z = -1.611$, ns) (Paper III).

Laursen & Hartup (1989) also used event based observations in the study of conflicts between preschool children and found that prior to 46% of the pooled conflicts the opponents had been engaged in social interaction, which is in agreement with the result in the current thesis. This result

clarifies that the boys with LI did not experience a relatively larger proportion of conflicts without social interaction in the *pre-conflict period*, but rather dealt with conflict management ineffectively. Earlier reports describe that children with LI generally become reluctant towards peer interaction (Redmond & Rice 2002). It was therefore initially assumed that an examination of any particular element, as conflict, within the daily activities of the boys with LI, would entail a noticeable lack of social interaction. However, as noted this was not the case, which may be explained by that the language preschool had a high teacher: child ratio and great importance was placed upon promoting social interaction. This result was encouraging, and may suggest that the boys with LI made great progress in the frequency of peer interaction since attending the language preschool. This may also indicate that the difficulties with conflict resolution behaviors that are reported in this thesis were associated more specifically with the challenging task of managing conflict, rather than with an underlying aversion to social contact.

Theme 2: Escalation of aggressive & emotionally charged interactions

Conflicts caused by *aberrance* are conflicts initiated by inappropriate behavioral play and/or protest intensities, in which behavioral turns are no longer directed towards the opponent in a reciprocal exchange, rather play/opposition escalates to sudden, seemingly unmanageable screaming and physical episodes. *Aberrant* caused conflicts are rarely observed as the conflict cause for TL conflicts, but represent nearly 15% of LI conflicts, in conflicts with social interaction in the *pre-conflict period* (Mann Whitney: $Z = -4.631, p < .001$), and in conflicts without *pre-conflict* social interaction (Mann Whitney: $Z = -3.482, p < .001$) (Paper III). This is displayed below in Figure 10.

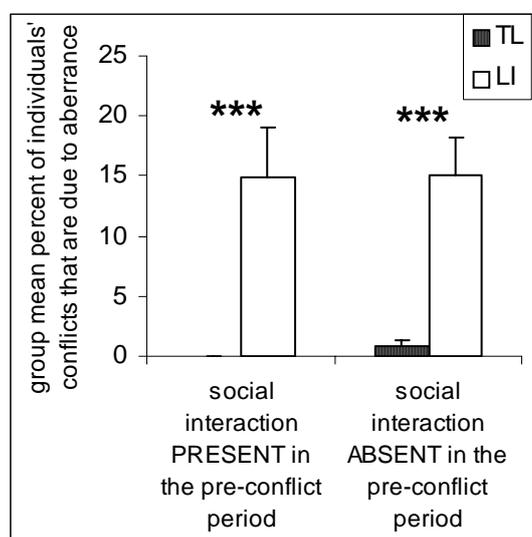


Figure 10. The conflicts that were due to *aberrant* causes, in relation to whether social interaction exists or not in the in the *pre-conflict period*. Data are shown as Mean + SE. *** $p < .001$

One may interpret that the larger percentage of LI conflicts due to *aberrance* indicates that the boys with LI have difficulty maintaining mutual interaction with reciprocal exchanges. Specifically, the children with LI may experience behavior regulation difficulties in concluding more aggressive or emotionally charged behavioral turns. Emotional dysregulation inhibits behavioral regulation (Barkley 1997; Gallagher 1999; McAndrew 1999; Fujiki et al. 2002).

Children with LI have been observed to behave in an objectionable manner caused by a seemingly uncontrollable escalation of aggression (Brinton & Fujiki 1999; Brinton et al. 2000; Craig 1993; Goldman 1987; Stevens & Bliss 1995). Butovskaya & Demianovitsch (2002) observed toddlers to express opposition with tantrum. Fujiki et al. (2001) found children with LI had difficulties controlling aggressive behavior when participating in rough-and-tumble play. This behavioral strategy, involving aggressive outbursts, generally decreases in occurrence as toddlers develop verbal expressions, cognitive abilities and regulation of emotional intensity (Butovskaya & Demianovitsch 2002; LaFreniere et al. 2002). The behavior exhibited in the initiation of *aberrant* caused conflicts, is cautiously interpreted as the inability of the boys with LI to decrease emotional arousal when in more emotionally charged situations or when displaying more aggressive behavior. Thereby behavioral control is hindered and the boys with LI have more difficulty concluding their behavioral turn.

The *aberrant* caused conflicts, as noted represent a substantial deviation in the LI group that may effectively hinder an initiation or resumption of a mutual communicational interaction. In turn, the boys with LI tended to exhibit reconciliatory behaviors in a smaller mean share of *aberrant* caused conflicts than *non-aberrant* caused conflicts (Wilcoxon: $T = 5, n = 9, p < .05$), and consequently the *aberrant* caused conflicts are reconciled in remarkably smaller proportions within the LI group (Wilcoxon: $T = 0, n = 9, p < .01$) (Paper II) (see Figure 11).

The relatively high mean proportion of conflicts between boys with LI that were caused by *aberrance* (see Figure 10), and the low reconciliation rates and *attempt rates* of these conflicts, constituted a strong differentiation in conflict character from the TL standard conflict types. Therefore reconciliation rates and *attempt rates* of these two extremes were also analyzed. Both reconciliation rates and attempt rates were found to be lower in *aberrant* conflicts between the boys with LI than in *non-aberrant* caused conflicts between the boys with TL (Mann Whitney: attempted reconciliation $Z = -3.498, p < .001$; reconciled $Z = -4.202, n_1 = 20, n_2 = 9, p < .001$) (Paper II). This is illustrated below in Figure 11.

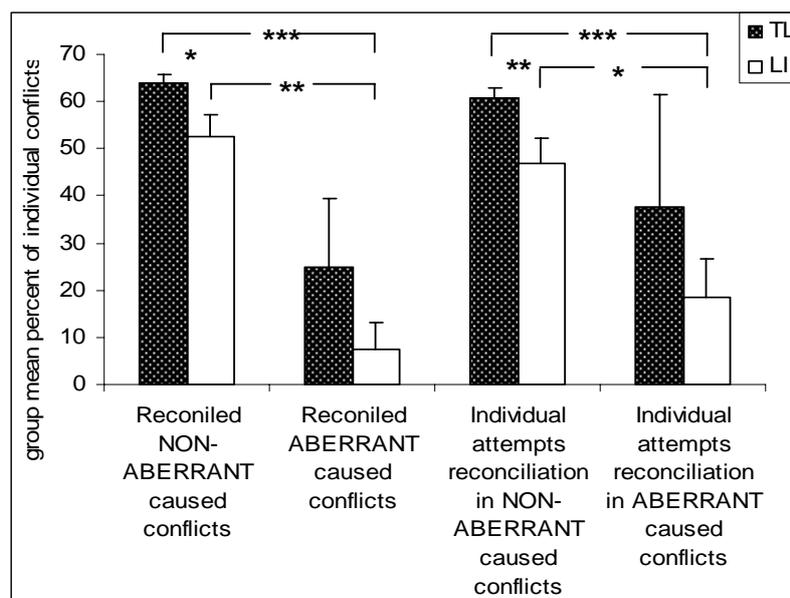


Figure 11. Reconciliation rates and rates of attempting reconciliation in *aberrant* and *non-aberrant* caused conflicts Data are shown as Mean + SE.

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

A possible explanation to the low reconciliation rates of *aberrant* caused conflicts may be that the aggressors experience difficulties concluding play and/or oppositional turns, which results in a seemingly “non-termination” of the *conflict period*. Thereby, the aggressor does not effectively enter a *post-conflict period* when reconciliatory behaviors may be exchanged. The victim, with his own language deficiencies may experience increased difficulties attaining contact with an opponent, whose behavior has escalated to an intensity that effectively obstructs reciprocal interaction and most likely induces increased emotional intensity within the victim (Eisenberg et al. 1992). Establishing reciprocal interaction with an opponent is the prerequisite for reconciliatory behaviors to be functional (Ljungberg et al. 1999).

It may be in exchanges that deteriorate to *aberrant* caused conflicts, that unregulated emotional intensity crosses a threshold in which even recent social interaction becomes inaccessible. Opponents thereby, enter a realm similar to when social interaction was not present at conflict eruption, in which the boys with LI also demonstrated difficulties initiating reconciliation (see Figure 9). Furthermore, deficiencies in emotional regulation have been shown to disturb cognitive processes of accessing referents to and formulation of problem solving strategies (Diamond 2002; Eisenberg et al. 2001; Fujiki et al. 2004; reviewed in Richardson et al. 1994; Rubin et al. 1998). The ability to reduce emotional arousal in more aggressive interchanges and regulate behavior in the direction of reciprocal interaction, as well as potentially compromised cognitive processes may contribute to the difficulties the boys with LI face in attempting to initiate contact with an opponent and reconcile *aberrant* caused conflicts.

In related analysis, *post-conflict aggression* was further examined, in relation to whether the likelihood that reconciliation may be attained was dependant upon the reciprocal or verbal nature of the *aggression*. In exclusively conflicts in which *post-conflict period aggression* had been exchanged, a statistical trend denoted that the boys with LI were unable to cope with *aggression* of a *reciprocal* nature and thereafter reconcile, as compared to the higher reconciliation rates of the boys with TL in these conflict types (Mann Whitney: $Z = -2.496$, $p < .05$) (Paper IV). On the contrary, reconciliation rates of conflicts with *non-reciprocal aggression* were not found to differ between the groups (Mann Whitney: $Z = -1.345$, ns) (Paper IV) (see Figure 12).

In exclusively conflicts in which *aggression* has been exchanged in the *post-conflict period*, the boys with LI were unable to overcome *aggression* and attained reconciliation in a smaller share of these conflicts than the boys with TL, in the case the *aggression* was expressed *only verbally* (Mann Whitney: $Z = -2.945$, $p < .01$) (Paper IV) (see Figure 12). However, the two groups did not differ either in reconciliation rates of conflicts in which *post-conflict aggression* was exchanged *only non-verbally* or with *both verbal and non-verbal* behaviors (Mann Whitney: $Z = -.531$, ns; $Z = -1.800$, ns; respectively) (Paper IV) (see Figure 12).

The reconciliation rates of conflicts, in which *aggression* had been exchanged, are illustrated in relation to the reciprocal nature and the verbalization of the *aggression* in Figure 12.

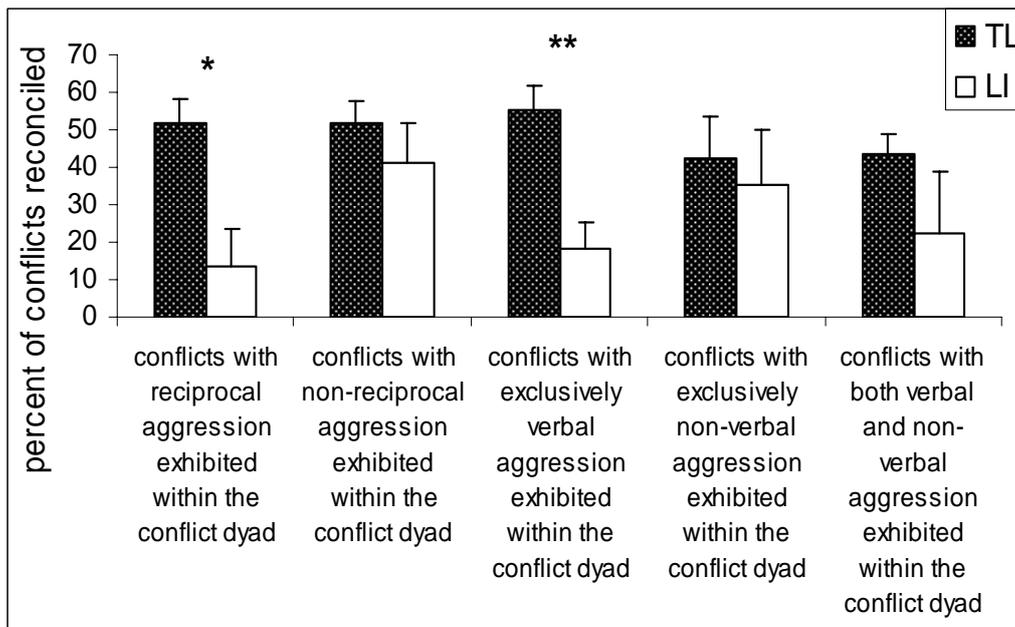


Figure 12. Proportion of conflicts with *aggression*, in which the *aggression* was overcome and thereafter reconciliation was attained, in relation to whether or not the *aggression* was *reciprocal* or not and whether the *aggression* was *verbal*, *non-verbal* or *both verbal and non-verbal*. Data are shown as Mean + SE
 * $p < .05$, ** $p < .01$

This further corroborates that when the boys with LI engaged in reciprocal *aggression*, although both opponents display *aggression*, it may be more a result of *aggression* escalation due to behavioral regulatory deficiencies rather than functional reciprocal interaction. In addition, as mentioned, *aberrant* caused conflicts represent a comparatively larger proportion of LI conflicts and are characterized by an escalation and seemingly unregulated expression of aggressive behavior (see Figure 10). It appears that even in the case of *post-conflict aggression*, the boys with LI experience difficulties expressing themselves verbally, which contributes to the overall lower reconciliation rates. Others have also found that children who are rejected from the peer group, as are many children with LI, respond to aggression with escalated aggression (Coie et al. 1991).

Factors associated with social interaction in the *succeeding non-conflict period*

The boys with LI socially interacted with former opponents in the *succeeding non-conflict period* following $28.2 \pm 3.2\%$ of overall conflicts, which is a smaller share than the $44.3 \pm 2.0\%$ of overall conflicts in which the boys with TL interacted in the *succeeding non-conflict period* (Mann Whitney: $Z = -2.210$, $p < .05$) (Paper III).

Consequently, the boys with LI are at a disadvantage in that during the course of daily activities they appear to relatively less often reconnect and socially interact after peer conflicts, which are common occurrences between preschool children. Thereby the boys with LI engage in less developmental social interaction, following the challenging task of coping with conflicts, which typically provides opportunities for social training and to develop shared experiences that may have served as references in future interactions. Also, as children with LI relatively less often re-connect after conflicts, they undoubtedly are less likely to develop an appreciation that others have unique perspectives and that one may continue satisfactory play interactions despite differing outlooks.

Both groups interact socially in the *succeeding non-conflict period* at a higher rate following conflicts, in which opponents socially interacted in the *pre-conflict period* than those they had not (Wilcoxon: TL: $T = 16$, $p < .001$; LI: $T = 1$, $p < .01$) (Paper III) (see Figure 13). Additionally, the difficulty of establishing of social interaction in the *succeeding non-conflict period* in the conflicts without social contact in the *pre-conflict period* was relatively more severe in conflicts between the boys with LI. Consequently, in conflicts without social interaction in the *pre-conflict period*, despite lowered rates of social interaction in the *succeeding non-conflict period* within the TL group, the boys with TL attained social interaction following a larger share of these conflicts than the boys with LI did (Mann Whitney: $Z = -3.262$, $p < .01$) (Paper III) (see Figure 13).

Within the LI group, it was also uncovered that social interaction between former opponents was reached in the *succeeding non-conflict period* in a smaller share of *aberrant* than *non-aberrant* conflicts (Wilcoxon: $T = 2$, $n = 9$, $p < .01$) (Paper III) (see Figure 13).

There were not any significant differences between the two groups in the shares of conflicts with social interaction between former opponents in the *succeeding non-conflict period* following either reconciled conflicts (Mann Whitney: $Z = -.393$, ns), or non-reconciled conflicts (Mann Whitney: $Z = -.249$, ns) (Paper III) (see Figure 13). However, social interaction occurred between former opponents in the *succeeding non-conflict period* in a larger proportion of reconciled conflicts than non-reconciled conflicts within both the TL group and the LI group (Wilcoxon: TL: $T = 0$, $p < .001$; LI: $T = 0$, $p < .01$) (Paper III). These results are shown below in figure 13.

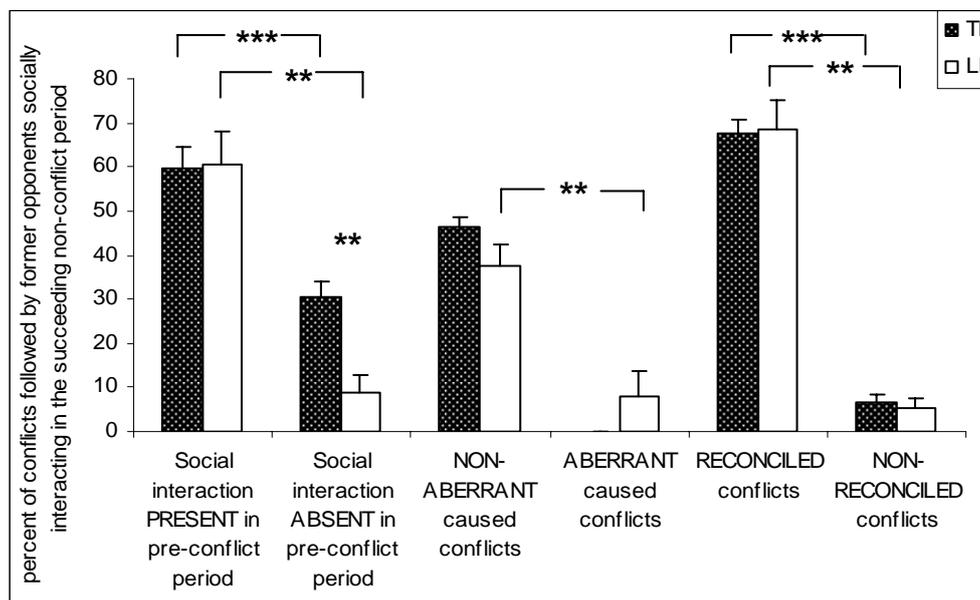


Figure 13. Social interaction frequency in the *succeeding non-conflict period* in relation to *pre-conflict period* social interaction, aberrant causes to conflict and reconciliatory outcome. Data are shown as Mean + SE.
** $p < .01$, *** $p < .001$

The current results confirmed that social interaction in the *pre-conflict* and reconciliation contribute to an increased likelihood of social interaction in the *succeeding non-conflict period* in both the TL and LI groups, as was established in Paper I. In addition, the boys with LI were more likely to socially interact in the *succeeding non-conflict period* following *non-aberrant* than *aberrant* caused conflicts.

However, a group effect was also revealed. Following conflicts without social interaction in the *pre-conflict period*, the boys with LI socially interacted in the *succeeding non-conflict period* relatively less often than the boys with TL. It may be reasoned that social interaction between opponents, preceding conflict, was a primary deciding factor in the likelihood of social interaction in the *succeeding non-conflict period* for boys with LI. If the boys with LI established contact in the *pre-conflict period* and thereafter reconciled, reconciliation was certainly a factor contributing to maintaining contact, enabling them to socially interact following conflict. Nevertheless, one cannot disregard the power of previous interactions. It may be that the initial contact preceding conflict was referred to and motivated the individuals to strive after contact in the *succeeding non-conflict period*. As was found earlier in regards to attaining reconciliation, the boys with LI may have deviated in requiring a more tangible frame as reference, as social interaction prior to conflict, in order to initiate contact.

Notwithstanding, the links within the three elements should also be considered. In the larger proportion of *aberrant* caused conflicts, the boys with LI were less likely to attain reconciliation (see Figure 11). Also, an absence of social interaction in the *pre-conflict period* was negatively linked with attaining reconciliation for the boys with LI (see Figure 9). Therefore, it is interpreted that the difficulties for the boys with LI associated with attaining reconciliation, emerged as confounding factors that are negatively and cumulatively related to social interaction in the *succeeding non-conflict period*.

GENERAL DISCUSSION & CONCLUSIONS

In paper I, it was established that the boys with TL demonstrated distinct behavioral patterns in conflict resolution that were governed by the dynamics of the immediately preceding interpersonal processes of peer conflict. In papers II-IV, it was uncovered that the boys with LI exhibited conflict resolution behavioral patterns that differed significantly from that of the boys with TL. The conflict progression of the boys with LI appeared to be contingent on disorganized communicative and behavioral processes, which included conflict elements that lead to lower reconciliation rates and cumulatively were negatively associated with social interaction in the *succeeding non-conflict period*. The boys with LI mainly deviated in behavioral dynamics from the boys with TL in respect to a lack of assertiveness and strong withdrawal in conflicts without social interaction to refer to in the *pre-conflict period*. Also, the boys with LI exhibited difficulties in behavioral regulation in emotionally heightened emotional and aggressive situations, in which it appeared they were not able to conclude behavioral communicative turns. Consequently, the boys with LI were on course towards a behavioral trajectory that may further hinder the development of communication and social competence. The uncovered typical behavioral trajectories are summarized below in Figure 14. Although, in similar shares of conflicts, the LI group and the TL group had interacted in the *pre-conflict period*, conflict progression of the boys with LI gravitated towards the bottom of the Figure 14, whereas the boys with TL entered behavioral trajectories that centered more towards the top half of Figure 14.

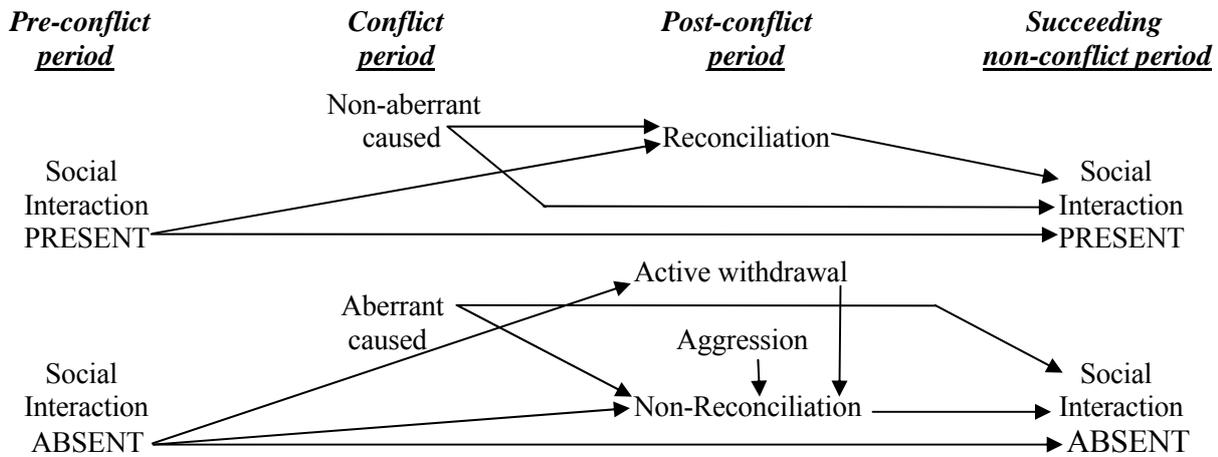


Figure 14. Simplified presentation of the most characteristic behavioral trajectories of each group that was observed within peer conflict. The conflict patterns most representative of the TL group were found to be centered to the top of the figure, whereas the conflict patterns most representative of the LI group were found to be centered to the bottom of the figure.

Overall, the boys with LI repeatedly demonstrated a general social profile of low levels of pro-social behavior and peer interaction and high levels of withdrawal behavior, which is in agreement with previous research (Brinton & Fujiki 1999; Fujiki et al. 2001; Hart et al. 2004; Redmond & Rice 1998). Consequently the children with LI did not assert themselves and initiate communication with an opponent following conflict, as relatively as often as the boys with TL did. However, when reconciliation is attempted it is accepted in similar frequencies in both the TL group and LI group. Nonetheless, rather than asserting themselves in conflict resolution and displaying reconciliatory behavior, the boys with LI left the room, which effectively closed

communication lines. These characteristic behavioral difficulties were restricted to conflicts without social interaction in the *pre-conflict period* to refer to when initiating reconciliation. In contrast, when social interaction exists between opponents in the *pre-conflict period*, the potential frames of reference were more closely related in time and most likely in direct relation to the subject of the conflict interaction, and therefore more assessable.

On the other hand, when aggressive or emotionally charged interaction was instigated, the boys with LI often characteristically escalated aggression which led to the rarely reconciled *aberrant* caused conflicts, as well as difficulties reconciling conflicts, in which *post-conflict period aggression* was expressed in a *reciprocal* and/or *only verbal* manner. This may indicate that rather than connect in reciprocal interaction that the boys with LI escalate aggressive intensity to a level that blocks communicative initiations from which reconciliation may have been initiated. It appears as if the boys with LI experienced particular difficulty concluding the more aggressive and emotionally charged behavioral turns. Children, who escalate aggression rather than exhibit assertiveness in conflict resolution, may imply more severe aggressive intent of others (Coie et al. 1991). In effect, children may also not be able to calm themselves down so that they are receptive to experiment with resolution strategies or access the internal representations of problem-solving skills (Eisenberg et al. 1993).

The combination of seemingly contradictory behavioral problems, as intense aggression and overt withdrawal may be inferred from the results of this thesis to characterize the overall behavioral profiles of the boys with LI. This interpretation is in agreement with the overview of previous research from several scientific disciplines. Parents to children with LI reported that when they attempted to reason through disagreements with their children it most often ended with the child leaving the room or throwing tantrums (Goldman 1987). Also, Brinton et al. (2004) described in a case study that the subject with LI, who had had linguistic and social interventional support since before the age of 5 years, had in junior high developed and relied on two distinctive strategies in peer conversations. He either, withdrew and avoided conversation with peers, or he interjected himself into a conversation and talked excessively, as if there was no termination to his conversational turn. Brinton and Fujiki (2004) observed in another case study a boy with LI, who also often did not relinquish the conversational floor when he had initiated an interaction. Therefore it is reasonable to speculate that the boys with LI escalated aggression because they had difficulties concluding behavioral and conversational turns, which may be reasoned to be an even more difficult task in situations linked to increased emotional intensities, as in peer conflict.

The reoccurring factor found in association with lower reconciliation rates and lower frequencies of social interaction in the *succeeding non-conflict period* for the boys with LI, was failure to establish and maintain reciprocal social interaction. Social interaction is difficult in situations as conflicts and following the terminated conflict processes. However, these situations were valuable opportunities for children to train social behavior, and subsequently develop friendships. Mutual friendships provide regular opportunities for development of social and cognitive skills (Fujiki et al. 1999a; Fujiki et al. 1999b), including reconciliation. The limited experiences of social interaction following these typical peer situations entails that the boys with LI have fewer opportunities for social training, to build positive experiences with peers of positive problem-solving skills or to build a social norm that one can play with peers, despite that the peers may have different perspectives (Katz et al. 1992; Zahn-Waxler et al. 1995). Rather, the boys with LI more often did not resolve conflicts in friendly manners, which may function as frames of reference in managing future conflict interactions.

CLINICAL IMPLICATIONS & PRACTICAL APPLICATIONS

Examining intricate interactions of children during daily activities enables specific difficulties to be identified and treated. Special attention should be focused on helping children requiring special needs, including communication deficits, to re-connect after conflict situations, in order to train conflict resolution skills and facilitate occurrences of social interaction. Education methods encountered by children with LI may be developed to increase reconciliation rates, which subsequently facilitate an increase in social interaction between former opponents following conflict situations. Participation in social interaction is the driving force in the development of language, cognitive, and social competence. Interventions in conflicts between children with LI and other related special needs should facilitate exploration, description and ultimately understanding of emotions and behaviors associated with conflict, including the perspective of the conflict opponent. Thereby, the children may acquire more developed tools for managing peer conflict and navigating peer interaction.

The results of this thesis indicate children with LI may benefit, from encouragement in finding alternative frames of communicative reference for establishing contact. In particular, the boys with LI appear to require support initiating contact from which reconciliation may be initiated, in the case a social contact was not present in the *pre-conflict period*. Children with LI should be encouraged in these situations to confront conflict opponents and train strategies, rather than leave conflict scenes. Intervention methods may include teaching behavioral strategies for spontaneously creating points of reference from which to initiate contact, without such a reliance on timely interactions with the opponent. Also, in the case of *aberrant* caused conflicts and the expression of *post-conflict reciprocal* and *verbal aggression*, intervention may need to focus on reducing emotional arousal so that self-regulation may allow the boys with LI to conclude the communicative turn. Thereby, the conflict opponent has the possibility to take a behavioral turn, which may facilitate reciprocal interaction and serve as a frame of reference for children when initiating reconciliation. Non-affiliative behaviors play a role in the reconciliatory process and the occurrence of seemingly negative post-conflict behavior is common in peer conflict. This should not be ignored in the design of intervention programs; rather regulation of these behaviors should be supported in the delicate and complicated process of conflict resolution. Unregulated non-friendly behavioral reactions that escalate to an intensity, which closes communication lines, hinder the reconciliatory process. However, channeling non-affiliative behaviors towards reciprocal communication may be more conducive to reconciliation. It may also be important to consider the value of less severe withdrawal, characterized in this thesis as *passive withdrawal*. Behavioral strategies that allow a redirection of focus may prevent or mitigate an escalation of aggression, without constituting a complete termination of the communicative contact, as often is the case when *active withdrawal* is conducted. Moreover, the behavior observed as *passive withdrawal* may allow a pause, in which emotional arousal is reduced, access to internal representations may be facilitated and more complex, emotionally challenging linguistic and social information may be processed.

In addition to intervention methods that target behavioral strategies, intervention should also target the interpersonal goals of behavioral strategies (Chung & Asher 1996). The boys with LI, who were the subjects of this thesis, and undoubtedly the majority of children with socio-emotional and behavioral problems, have most likely experienced a range of negative peer

relations and developed negative internal representations of social interaction. Thereby, the goals of conflict management are characterized by avoidance and distance, maladaptive goals. Accordingly, intervention should aim to provide children with positive experiences of peer interaction.

The above considerations were applied in psychotherapy group sessions for three school boys with aggressive behavioral problematic, which met weekly for one year. In this group therapy the therapists focused on facilitating positive peer interaction, providing socio-emotional referents for the group, putting words to the different perspectives of the three boys and the therapists, as well as, exemplifying that disagreement does not need to entail a termination of play. At the end of the year, according to the teachers, the parents and the three boys themselves, aggressive behavior was reduced, and peer relations and social functioning in school improved significantly (Forsbeck Olsson 2003).

LIMITATIONS, STRENGTHS & FUTURE DIRECTIONS IN RESEARCH

It is cautioned to not draw far-reaching conclusions or ignore individual linguistic, socio-emotional or behavioral profiles in remediation. This exploratory and descriptive research cannot be generalized to the LI population as a whole, as the samples were small and contain subjects within a wide age range. There were great changes in children's social and communicative skills between the ages of 4 and 7 years. In addition, the specialized language preschool entailed a lack of peer model behavior and the difficulties exhibited by the boys with LI were certainly compounded by the language impairment of the conflict opponents. This was a factor that the boys with TL did not encounter. Furthermore, despite that all the subjects with LI suffered from combined expressive and receptive language impairment, the boys with LI constituted a heterogeneous group in regards to the specific language disabilities, which may have varying impact on social behavior.

Even so, the smaller sample, excluding subjects under 4 years of age and examining distinct groups allows for an investigation of more depth than breadth in naturalistic settings. This provides a general picture of the group dynamics, yet revealed specific difficulties of a more subtle nature. The information gained was valuable to exemplify the complexity of social behavior and highlighted factors to be considered further in the future. Also, observations of peer interaction and peer conflict in natural contexts is sorely lacking in the literature. This research project has contributed to filling in this dearth of information, validates the methods used and provides a foundation for similar studies to be conducted in the future.

In light of the limitations presented above, there are certainly several avenues for future research. In particular, naturally occurring conflicts between preschool children should be further studied from multiple research disciplines, in larger samples and in groups with smaller age ranges. Also valuable information will be acquired in studying child interaction and peer conflict in children with different disabilities (such as ADHD or autism spectrum disorder), as well as children with LI. Further it would be beneficial to study children requiring special needs in mainstream, as well as specialized settings, and in relation to specific dimensions of individual language impairment or individual social and behavioral profiles. It is also important to examine younger children, who are not suspected to suffer from developmental disabilities in order to further tease out the origins of the behavioral mechanisms that have been described here.

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