Dynamics of Preschoolers Self-Regulation:

Viewed through the lens of Conflict Resolution Strategies during peer free-play

by

Bernard A. Polnariev [1]

A dissertation submitted to the Graduate Faculty in Psychology
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy, The City of New York

July 2006

UMI Number: 3241978

Copyright 2006 by
Polnariev, Bernard A.

All rights reserved.

UMI Microform 3241978
Copyright 2007 by ProQuest Information and Learning Company.
All rights reserved. This microform edition is protected against
unauthorized copying under Title 17, United States Code.

ProQuest Information and Learning Company
300 North Zeeb Road
P.O. Box 1346
Ann Arbor, MI 48106-1346

© 2006

Bernard A. Polnariev

All Rights Reserved

This manuscript has been read and accepted for the
Graduate Faculty in Psychology in satisfaction of the
dissertation requirements for the degree of Doctor in Philosophy.

Date	Anna Stetsenko Chair of Examining Committee
Date	Joseph Glick Executive Officer

David Bearison

Colette Daiute

Edward F. Meehan

Gary Winkel
Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

Abstract

Dynamics of Preschoolers Self-Regulation:

Viewed through the lens of Conflict Resolution Strategies during peer free-play

by

Bernard A. Polnariev

Advisor: Anna Stetsenko

The process of self-regulation (SR) qualitatively transforms children's cognitive, social, and emotional capacities. Based on Vygotsky's (1978) theory, it can be argued that SR comes into existence, materializes, and is practiced during play. The main purpose of this study was to further the understanding of preschoolers' SR dynamics during social free-play.

There were three waves of naturalistic observations involving 19 NYC preschoolers during classroom free-play. Several coding schemes were used as markers of group SR. An in depth understanding of group SR was achieved by analyzing the types of conflicts children engaged in, their frequency, and patters of how children resolved these conflicts during social play. *Children-in-conflict activity-in-context* was the key unit-of-analysis as well as the major result of this investigation.

Advanced play, conflict and conflict resolution strategies during preschool free-play were conceptualized as leading level activities for complex SR. As children engaged in many more complex conflicts over dramatic play and sharing of the play constructs, play became more sophisticated and peer interactions became more collaborative and vice versa Fantasy play was the most common play level at which conflicts occurred, especially likely so during associative and parallel peer interaction. Comparatively, younger children demonstrated simpler and less

social peer play than older children. Almost allof the conflicts revolved around rules and regulations and sharing of play artifacts. Dilemmas over object distribution apparently decreased across time as children's play became more sophisticated. As a frequent conflict issue, play ideas was the topic associated with more advanced play and peer interactions. Younger preschoolers were much more likely to physically harm other children as compared to the older ones. Quite surprisingly, there was complete lack of psychological harmduring free -play. Almost all of the conflicts were resolved; children predominantly used prosocial conflict resolution strategies for the observed disputes. An 'expectancy effect' was possibly found with one teacher's perception of individual behavior which was based on sex and age. Moreover, was the realization that SR dynamically changes as a function of the group along with many the momentary contextual variables. A video montage of conflicts during free-play is attached.

Acknowledgements

Dedicated to my supportive family:

THE ROSE IS WITHOUT WHY;
IT BLOOMS BECAUSE IT BLOOMS.
IT CARES NOT FOR ITSELF;
ASKS NOT IF IT IS SEEN.
-ANGELUS SILESIUS

I'd like to thank the 'little people' that made this possible; specifically, these preschoolers granted me an exclusive window into self-regulation. I'm grateful for all the support and guidance from my superb faculty team, the teachers at the CUNY Graduate Center *Child Learning and Development Center*, and the parents who have realized the importance for research. There was incredible intersubjectivity development with Anna, going back and forth building on knowledge – encouraging me to go further. Colette helped to bring out the qualitative richness of the data. David created cognitive conflict as only he could. Gary is a brilliant statistical pianist – creating harmonious melodies on the keyboard; the approach taken here would not have been possible without his tremendous input – he went above and beyond his responsibilities. Ed is the coolest intellectual who has inspired my life path; he helped me to see the big picture for the dissertation. The work was without doubt, a collaborative effort.

…thank you

Table of Contents

Committee……..…..…….....**iii**

Abstract……...…….....**iv**

Acknowledgement……...…….....**vi**

Chapter One: Introduction and Literature Review…….……1
1.1 Self-Regulation ……..…….....…….....1
1.2 Self-Control versus Self-Regulation…….…….....…….....5
1.3 Self-Regulation and Play …….……...……..……...8
1.4 Rules & Regulations. ……..……...…….....14
1.5 Conflict …… ……..…....……..……....15
1.6 Role of Age……....…….…….....23
1.7 Conflict Resolution & Self-Regulation...…….……...27
1.8 Context and Self- regulation…….…….....….34
1.9 Psychological Tools.……..….....36
1.10 Speech……..…..……..……....38
1.11 Internalization…….....41
1.12 "The Zone"……..…..……..…….....43

Chapter Two: Questions & Hypotheses ……..…….....48
2.1 Purpose …….....48
2.2 Research Questions……..……49
2.3 Hypotheses…….....50

Chapter Three: Methodology…….…….....……..….....**59**
3.1 Participants…….....59
3.2 The Child Development & Learning Center ……..…….60
3.3 Procedure…….……..…..……....62
3.4 Measures...…….…….....66
3.5 Advantages of Naturalistic Observations……...…….....71
3.6 Limitations of Naturalistic Observations…….……..….....72
3.7 Reliabilities……...……..…….....73

Chapter Four: SR in motion: A Penetrating Gaze.…….....…….…..……**75**

Chapter Five: Results ……..…….…….....**90**
5.1 Analysis ……..…….....……....90

Chapter Six: Discussion……..…….…..……..**134**
6.1 Future Directions ...……..…….....……..…….154
Notes.……...…….....**156**

References……...…….....**165**

Appendices

Appendix A: Self-Control Rating Scale..…… …….....…..…….……...157

Appendix B: Conflict Resolution Strategies coding scheme.… …….……...……..…….....159

Appendix B2: Dominant CRS coding scheme …….…..…….…..161

Appendix C: Conflict types coding scheme….…….…….162

Appendix D: Play Variables coding scheme …….....……...……..…….....163

Appendix E: Context coding scheme ……..…….……..164

Appendix F: Time Code coding scheme …….……....……..164

Appendix G: Culture coding scheme ……..….…….....164

List of Tables

Hypothesis 1 results……96

Table 1 – Play Context during conflict…..……..……..97
Table 2 – Play type during conflict……..……..……99
Table 3 – Peer Play type during conflict……..……..……..100
Table 4 – Teacher / Adult Play type involvement during conflict……..……..100
Table 5 – Conflict type during social play……..……..……....103
Table 6 – Distribution of resources conflict as a function of Time, Class, & Interaction…….....105
Table 7 – Play type a function of Conflict type controlling for dominant CRS & time –DLSM...107
Table 8 – Play type as a function of Conflict type & controlling for time- DLSM……..……108
Table 9 – Peer Play type as a function of Conflict controlling for time – DLSM……..……108
Table 10 – Teacher Play involvement as a function of Conflict type controlling for dominant CRS & time – DLSM …….……..……..……...110
Table 11 – Teacher Play involvement as a function of Conflict controlling for time – DLSM….111
Table 12 – Dominant CRS in response to conflict……..…….…….112
Table 13 – Total Number of Teachers involved in CR……..……..…….112
Table 14 – Play type as a function of Dominant CRS & controlling for conflict type & time – DLSM……..……..……..……..115
Table 15 – Prosocial CRS as a function of Time, Play type, & Interaction …….....117
Table 16 – Hostile CRS as a function of Time, Play type, & Interaction …….....117
Table 17 – Peer Play type as a function of Dominant CRS controlling for conflict type & time DLSM…….……....…….118
Table 18 – Hostile Dominant CRS as a function of Peer Play type & Social order conflict…….119
Table 19 – CRS Mix as a function of Time, Peer Play type, & Interaction ……..120
Table 20 – Teacher CR as a function of Time, Peer Play type & Interaction……....120
Table 21 – Teacher Play involvement as a function of Dominant CRS & controlling for conflict type & time - DLSM……..……..……..…..122
Table 22 – Between Conflicts & Dominant CRS correlations……..…….....123
Table 23 – Dominant type of CRS * Conflict type during play - Crosstabulation Count……..124
Table 24 – Teacher CR involvement & Conflict type correlations……..……124
Table 25 – Number of Conflicts as a function of Dominant CRS - DLSM…….....125

Hypothesis 2 results ……..…….....125

Table 26 – SCRS scores breakdown.……..……..…….……..127
Table 27 – SCRS 2 as function of Teacher Play involvement while controlling for SCRS 1, & Interaction.……..……..…….…….130
Table 28 – SCRS 2 as a function of Conflict type & controlling SCRS 1 – DLSM…….…….131

CHAPTER ONE
Introduction and Literature Review

This chapter reviews the literature that has guided the study of self-regulation and how it is understood through conflict and conflict resolution during free-play within a socio-cultural and activity theory framework. The essential theoretical and empirical findings in this area are detailed.

1.1 Self-Regulation

"I am, indeed, a king, because I know how to rule myself" Pietro Aretino (in a letter written to Agostino Ricchi on May 10, 1537; both were great writers and thinkers in the 16th century).

Broadly speaking, self-regulation (SR) is not only the cornerstone of child development but also, and more importantly, of human civilization. SR is an indispensable feature and product of development. Flavell (1977) described SR as a fundamental developmental hallmark of early childhood (cf. Kopp, 1982). The process of SR qualitatively transforms children's cognitive, social, and emotional abilities (e.g., Diaz, Neal, Amaya-Williams, 1990; Garvey, 1990; Smilansky, 1968; Vygotsky, 1978).

Those children who have mastered self-regulatory abilities are not only more academically advanced but also are more often sought after as friends and play partners (e.g., Connolly & Doyle, 1984; Dodge, 1983; Shantz, 1986). Campbell (1995) for example, found that 10-15% of preschoolers have some form of behavioral issue most of which involved problems with SR (cf. Elias & Berk, 2002). Some researchers have made the case that behavior can be predicted from knowledge of earlier behavior (e.g., Carlson & Sroufe, 1995); while others have, on the contrary, claimed that development is so extremely variable that it is, in fact, not predictable (e.g., Sameroff, 2000). This theoretical disagreement notwithstanding, it has been well documented that children's capacity for SR is predictive of current and later adjustment and maladjustment (Denham, 1998; Eisenberg, Gershoff, Fabes, Shepard, Cumberland, Losoya, Gutherie, & Murphy, 2001; Kopp,

1982; Olson & Hoza, 1993), as well as future delinquency (Shoda, Mischel, & Peake, 1990). Coie, Dodge, and Kupersmidt, (1990) have claimed that preschooler's behavioral difficulties often persist which puts them at a greater risk for peer rejection, isolation, and school failure in middle childhood and adolescence. Many children who suffered from difficulties in interaction with peers have demonstrated low social competence (Boivin & Begin, 1989). By and large, SR skills underlie many behaviors linked with successful school adjustment (Blair, 2002). Dennis (2001) noted that"it remains unclear how young children learn to regulate emotio ns and behavior" (p. 1). Given such consequential points and findings, it is of particular importance to understand how SR develops early on in life by identifying contextual factors that help to foster self-regulation.

SR is composed of at least four ingredients: (1) inhibition of automated responses, (2) motor control, (3) delay of gratification, and (4) sustained attention (see McCabe, Rebello-Britto, Hernandez, Brooks-Gunn, 2004, for an extensive review of these components and many instruments that have been used in this field to identify SR). Note that some research approaches would also include (5) goal-directed behavior, as part of this system (e.g., Zimmerman, 2000). Kochanska and her colleagues (2000) remarked that the capacities for SR are, in fact, interdependent, and the boundaries among them are often ill-defined. Moreover, McCabe and her colleagues (2004) argued that much of our existing knowledge of early childhood SR development is derived from studies of small, nonrepresentative samples of parents and children often with data collected using laboratory observations.

Luria also recognized the great importance of neurological mechanisms (especially the maturity of the nervous system) in fostering SR (cf. Crain, 2005). Socio-cultural approach researchers (e.g., Kopp, 1982; Vygotsky, 1978) have assumed that there is a gradual shift from social- to SR starting from birth. Moreover, these authors asserted that the progression includes

sequence from external to internal factors which mediate self-control (SC). Kochanska and her colleagues (e.g. 1997) and Dennis (2001) have claimed to support this social position; however, their works have seemingly classified preschoolers' SR as a result of internal qualities (e.g., temperament, inhibitory control), rather than fully appreciating tools and strategies that children use to self-regulate emotions and behavior. Critically, they regarded the social world (i.e., the context) as a separate entity; alternatively, the social world can be conceptualized as intertwined with children's development. Development is an "aggregate of social relations, embodied in an individual" (Vygotsky, 1929, p. 60, cf. Moran & John–Steiner, 2003, p. 6). While I agree, in part, with this Vygotskian position, I take the position that development is a transformative process and not simply an 'aggregate' of several variables.

Nature has long been posited as vitally contributing to the development of SR (see Rothbart, Ahadi, & Evans, 2000). Biologically speaking, "cognitive control has been linked to the anterior cingulated cortex, the premotor cortex, and the "nonmedial" frontal cortex … while animal models suggest that the medial septum, posterior hippocampus, and orbitofrontal cortex may be involved in the ability to delay gratification…the right frontal lobe may be particularly relevant to the ability to sustain attention" (McCabe et al., 2004, p. 497). At this point in time, most researchers appreciate the role of both 'nature and nurture' in human development. Siegler and Crowley (1991) stated that "development and learning, like genetics and environment, are so complexly intertwined that usually no clear separation of their influence is possible" (p. 607). The present study certainly acknowledges the role of nature (e.g. temperament) in predisposing children to environmental stimuli which may have a profound effect on SR abilities. However, my interest is in describing and exploring the role of social conflict and context as it profoundly affects SR.

SR is structurally and functionally a multidimensional, unique, and transformative process. It involves behavioral, cognitive, emotional, and motivational factors (Grolnick & Farkas, 2002). "Werner maintained that achievement can not be empirically dissociated from process" (cf. Bearison, Dorval, LeBlanc, Sadow, & Plesa, 2002, p. 18). Similarly, SR achievement cannot be empirically dissociated from its process. SR develops from the interaction of many factors including, but not limited to, the appropriation of information from parents (both via genetic inheritance and nurturance), teachers, peers/ playmates, classroom, and constructs (such as books, toys, and music, for example) in the classroom. Hence, understanding the child's social environment is vital to better understanding the process of SR.

Luria (1928) emphasized the social origins of SR. First, children submit to the commands of others; then they command themselves (Luria, 1928). SR is an activity that is not simply located within children but rather created and developed through continuous interactions between the children, artifacts in the setting, and the setting itself (Paris & Byrnes, 1989). Stetsenko and Arievitch (1997) reasoned that the development of SR is not a natural process but rather a co-created social artifact— and thus, it is continually mediated by a cultural and historical context. SR is a life-long process – thus never truly achieving a "product" status. Contextual elements were privileged as leading to SR. From a sociocultural and CHAT (i.e., Cultural and Historical Activity Theory) approach, a valuable and effective method of capturing the importance of the context for SR development was to make use of the activity. The main focus in this study was to explore SR during conflict and its resolution during play; accordingly, *children-in-conflict activity-in-context w*as the central unit of study for this investigation. SR was assessed by conflict and conflict resolution approaches during group activity. A major realization and implication of this unit-of-analysis is that SR is dependant upon the many participants involved in the conflict and the

resolution during the interaction in a particular situation. I, accordingly, was not interested in individual responses per se; rather, responses were understood as a function of the group and the play context. To begin to comprehend SR, a vast array of factors should be taken into account and consistently explored as they collectively and transformatively lead an individual child to develop SR. Children's abilities to employ SR are in fact inextricably intertwined with the context.

1.2 Self-control versus Self-regulation

In the *Handbook of Self-Regulation,* Boekaerts, Pintrich, and Zeidner (2000) noted that "self-regulation is a very difficult construct to define theoretically as well as to operationalize empirically" (p. 4). Baumeister and his colleagues (1998) offered one distinction between self-control (SC) and SR by discussing the results of one set of studies (see Boekaerts, et al., 2000). These researchers stated that "some internal resource is used by the self to make decisions, respond actively, and exert self-control" (p. 1263). In this sense, SC and SR can be considered in the broader sense; both concepts involve active engagement and cognitive functions. In the same article, however, Baumeister and colleagues (1998), as have many other researchers, used the terms "SC" and "SR" interchangeably at times and made no clear distinctions between them. In a study of SC development with ADHD children, Russell (1997) also used the two terms interchangeably, remarking that this has been the norm in the literature. The term 'SC' has been interpreted by these and many other authors in a broad sense and has not been recognized as equivalent to impulse control (although the latter is clearly one part of SC and SR). Baumeister and Mick (2002) asserted that both SC and SR "refer to the self's capacity to alter its own states and responses" (p. 670-671). SR is vital for effective performance in many ways – for example, for impulse regulation, time management, and coping with emotions and stress. Many clinical

conditions such as ADD / ADHD, anxiety and depression may be viewed as limiting the individual's capacity to resolve conflicts and to self-regulate (see Barkley, 1997).

Kopp (1982) outlined an integrative and useful model of how SR develops. She theorized that SR entails a reactive shift from the commands and demands of others to the use of speech and other cognitive tools to plan, monitor, and direct ones' activities. The development of SR undergoes five sequential phases: (1) *Neurophysiological modulation*, (2) *Sensorimotor modulation*, (3) *Control*, (4) *Self control*, and (5) *Self-regulation* (see Kopp, 1982 for a full account). The major difference between the last two phases in her model is that the latter is a more flexible and adaptive capacity than the former. In other words, for Kopp (1982), "what sets self-control apart from self-regulation is a difference in degree, not in kind" (p. 207).

Kopp (1982) distinguished SC as rigid behavior encompassing "compliance, and emergent abilities to delay an act on request and to behave according to caregiver and social expectations in the absence of external monitors" (p. 206). Often, there is repetition of commands by adults and instructions for a specific task which clearly indicates functioning at the SC level (Diaz et al., 1990). Following a cognitive and information-processing approach (e.g., Piaget, 1952; Case, 1985), the concept 'SC' signifies a <u>self</u>-initiated modification of behavior afforded in part by an increased memory and attention span. However, children have a limited cognitive flexibility in adapting to meet new situational demands and a capacity for delay. SC is often indexed by compliance with parental commands and the ability to defer acts upon request. The development of SC occurs at around two years of age and marks the onset of internalized socialization. Hence, the ability to regulate one's behavior starts off externally and is mediated by external factors. The emergence of SC coincides with the development of representational thought – where the child uses a symbol to stand for an object (Piaget, 1952).

Diaz and his colleagues (1990) have defined SR "as the child's capacity to plan, guide, and monitor his or her behavior within and flexibly according to changing circumstances" (p. 130). The child behaves in ways to achieve self-imposed, dynamic goals within dynamic situations, using tools from the environment to attain the goals. Cognitive tools like consciousness, introspection, and metacognition afford SR (Kopp, 1982). The emergence of SR marks a qualitative transformation from SC (Diaz et al., 1990). The shift from SC to SR structurally changes the child's capacity and ways of engaging in the world.

Some researchers have critiqued Kopp's SR description for not differentiating between the phases of SR as possessing "qualitatively distinct levels of behavioral organization" (Diaz, et al., 1990, p. 132). Diaz and his colleagues (1990) further re-evaluated Kopp's (e.g., 1982; Vaughn, Kopp, & Krakow, 1984) account since she did not clearly and concretely illustrate the actual process of how SC develops into SR. SC and SR are two qualitatively different constructs (Diaz et al., 1990). The concrete developmental processes that account for the cognitive and behavioral flexibility with respect to SR were not discussed in Kopp's theoretical review. But where does SR come from and how does it develop? SR is a skill that occurs via the process of internalization (Kopp, 1982) as a result of assimilation and accommodation achieved by social and cognitive mechanisms (e.g., Piaget, 1962); this skill is in part a function of neurological predispositions (Blair, 2002). Note that this viewpoint does not imply that internalization of information and meaning is unidirectional; nor is it a facsimile. Rather, SR is a skill which is a transactive activity integrated social norms and standards. The dimensions of the social world and the child's SR abilities are in fact transactional.

1.3 Self-Regulation and Play

"Superficially, play bears little resemblance to what it leads to, and only a profound internal analysis makes it possible to determine its course of movement and its role in the preschooler's development" Vygotsky (1933/1966, p. 18).

The impetus for the present study was Vygotsky's (1978) claim that young children accomplish their "greatest self-control" in sociodramatic play (p. 99). In accordance with the importance of context for behavior, children's play capacities are dependent upon their partners. Dramatic play is the process by which "children assume an identity in role enactment, relating to other persons or objects as if they are other than themselves, or altering time and space in the form of situational transformations" (Johnson, 1998, p. 148). Hughes (1995) defined sociodramatic play as a "form of pretend play that involves intense group interaction, with each group member taking a role that complements the roles played by all others in the group" (p. 230). McDevitt and Ormrod (2004) identified sociodramatic play as involving children taking on "assumed roles and [acting] out a scenario of events (p. 137). The label 'sociodramatic' is often used interchangeably with 'symbolic,' 'pretend,' or 'fantasy' play in the literature. This confounding of the term sociodramatic with those listed above is unfortunate because sociodramatic play is much more complex and socially involved than the above definitions seem to reflect.

Sociodramatic play has very powerful developmental implications. Garvey (1990) stated that sociodramatic play profoundly augments cognitive and social development. Smilansky (e.g., 1968, 1990) more specifically regarded sociodramatic play as greatly contributing to creativity, intelligence, social skills, and speech. In collaborative discussions with Anna Stetsenko and my own observations, I came to realize thatsociodramaticplay involves children initiating and engaging others in play, collaborating and coordinating play with partners, having the same goals

during play, reciprocating, questioning and/or commenting on the activity, developing a story plot (or narrative), assigning roles, creating rules, adhering to rules, and demonstrating intersubjectivity, among other aspects. David Bearison and his collaborators (2002) contended that the hallmark of any form of collaboration is in fact 'intersubjectivity': children should be able to coordinate and elaborate upon shared ideas, goals, and actions if they are to be valued as a play partner. Intersubjectivity establishes a common ground for communication as each play partner adapts to the other (Berk & Winsler, 1995), as well as modifies the perspective itself. Children develop and expand upon these sociodramatic play qualities with continued social play and collaboration.

Peer interactions become more common and complex as children mature. Through play activity, children learn to be active, full-fledged members of a society. Children who engage in sociodramatic play are recognized as more socially competent than those who do not participate in such activity. Advanced social play may begin with a request to play together. Those who can actually engage others into play are recognized as more socially competent than those children who simply request to play with others. The degree of these play qualities is the key to understanding how SR develops; simply measuring the presence of these qualities limits, to some extent, the understanding of SR dynamics. The play elements listed above encompass qualities that more fully capture sociodramatic play. Play is indicative of a social aptitude and SR capacity.

As the first empirical research of its kind, Elias and Berk (2002) showed strong support to the idea that complex sociodramatic (CSD) play greatly contributes to the development of SR. They found that the frequency and persistence of CSD play was associated with development of SR as indexed by children taking responsibility for cleaning up materials after free-play. However, the total observed CSD play, irrespective of its complexity, revealed no significant

relationship with any SR measures (including clean-up and/or circle time). These authors adapted the *Smilansky scale for evaluation of dramatic and sociodramtic play* (Smilansky & Shefatya, 1990), which codes for the maturity of a child's sociodramatic play indexed through several parts (as discussed in Elias & Berk, 2002). The elements adapted by Elias and Berk (2002) from the 'Smilansky play scale' include: imitative role play, make-believe with objects, make-believe in regard to actions and situations, interaction, verbal communication, and persistence during the play period. Each play dimension, except for persistence, was coded as either absent or present. The play interaction (i.e., the 4th play element listed above), was taken to mark play as indeed sociodramatic. The frequency and persistence scores were obtained by Elias and Berk (2002); if four elements were present during a child's play, then the play was recognized as CSD. The problem with the sociodramatic scale that was used by Elias and Berk (2002) is that it does not seem to fully capture the complexity of children's CSD play. Instead, a scale assessing the dynamics of play is necessary in order to more fully understand CSD. Moreover, the scale should address the play components on a continuum, as opposed to only its presence or absence – which only captures part of its complexity. Although not necessarily an outdated coding scheme, the Smilansky scale seems to miss the sociocultural point of appreciating the dynamics of CSD play.

James Joyce once wrote that play is "an epiphany of the ordinary, an idealization, a pure dilemma." For Vygotsky, "play is not a recollection of past experience but a creative reworking that combines impressions and constructs from them new realties addressing the needs of the child" (Smolucha, 1992, p. 51). Play is a dynamic phenomenon. Quite often, play activities shift dramatically during preschool. For example, Elias and Berk (2002) observed that children's play episodes changed several times during a five-minute period. Preschoolers "move implicitly in and out of play episodes with relatively few explicit invitations and termination statements" (Fein &

Schwartz, 1986, p. 103). Play is distinct from other phenomena; by its definition, it is an active process, which is intrinsically motivated, and free from externally applied rules (see Rubin, Fein, & Vandenberg, 1983).

Play is a real-life process that prepares children "to meaningfully contribute to the ongoing social collaborative practices in the world" (Stetsenko & Arievitch, 2004, p. 493). Play provides preschoolers an opportunity to expand their world. As Rogoff (1990) articulated, "children are active participants in understanding their world, building on both genetic and sociocultural constraints and resources" (p. 37). Stetsenko and Arievitch (2004) further added that individuals purposefully transform something in and about the world as they engage activity such as play. In fulfilling an activity, the participant also transforms her- or himself (Engestroëm, Miettinen, & Punamaki, 1999). Making sense of the world, and therefore becoming an active member within it, appears to be the critical foundation for children's SR.

Vygotsky (1933/1966) explained that play provides a power for the formation of deliberate goals and the creation of real-life plans and motives – all of which materialize in play and allow for the highest level of preschool development. On these grounds, during the preschool years, according to Leontiev, play takes on the role of a 'leading activity' – one that becomes a major source of social, cognitive, and emotional advancement. Because play allows for, and may lead to learning and development, play itself has been widely accepted as a leading activity and a paramount educational tool of early childhood (e.g., Berk, 1994; Leontiev, 1959/1981; Vygotsky, 1978). This position does not necessarily mean that play is the only activity that enhances children's development; however, play is the root that drives the restructuring of psychological capabilities (Nicolopoulou, 1993).

In Vygotsky's (1925/1971) dissertation on *the psychology of art*, he argued that emotion and fantasy are one in the same process, with "fantasy as the central expression of an emotional reaction" (p. 210; cf. Moran & John-Steiner, 2003, p. 15). Furthermore, children's "play constitutes the realization of unrealizable desires through use of fantasy" (Nicolopoulou, 1993, p. 10); this account of make-believe play seems to have been inspired by Freud's (e.g., 1922) *psychodynamic* perspective (though without giving formal credit to Freud). From a *psychodynamic* perspective, play is the central means to mastery of desires, impulses, inner conflicts (e.g., Freud, 1920), and interpersonal conflicts (e.g., Erikson, 1977; cf. Keren, Feldman, Namdari-Weinbaum, Spitzer, & Tyano, 2005). Leontiev (1959/1981) proposed that children aspire to act like adults (cf. Nicolopoulou, 1993). Children realize that accomplishing this "imaginary satisfaction requires a level of 'self-control' and the need to act against immediate impulse' – that is, it requires a voluntary submission to rules… The rules of play therefore become, as 'Piaget [stated], rules of self-constraint and self-determination' [Vygotsky, 1933/196[6], p. 10" (cf. Nicolopoulou, 1993, p. 10). Many theorists agreed that, as children develop, so do their play skills (see Rubin, Fein, & Vandernberg's, 1983).

Leontiev (1959/1981) suggested that as children play with others, socio-cognitive processes become generalized, condensed, and further developed retaining a greater self-regulative role (cf. Pacifici & Bearison, 1991). Play helps children learn to delay gratification and abide by social rules (Berk & Winsler, 1995). The process of SR through play transforms not only the children's behaviors but also, and perhaps more importantly, their mental operations. Furthermore, SR cannot fully materialize without experiences gained from play. Children learn, develop, create, and transform knowledge, meaning, and understanding from dynamic interactions and internalizations of social and cultural practices via the process of language. "Competence arises

from the collaboration between person and context, with competence changing when context changes" (Fischer, Bullock, Rotenberg, & Raya, 1993, p. 93). Individuals utilize speech to communicate ideas (for themselves and others) – from which they create and re-create knowledge, meaning, and understanding.

From a sociocultural standpoint, a primary quality and consequence of play is that it leads to conflict and, thus, the need for self-restraint. Vygotsky (1933/1966) reasoned that play is a 'paradoxical activity' — play constantly demands that children behave against their pressing desires since they must yield themselves to the imposed rules and limitations of 'reality.' A consequence of this paradoxical reality is often occurrence of conflict — if play interactions are to be continued, the conflict should be resolved. Effectively resolving conflict requires a decentered ability to at least appreciate the perspectives of others – in particular, the perspectives of play partners and perhaps the teacher. From a Piagetian viewpoint, the primary quality of play is that it abates egocentrism and, thus, allows for greater perspective taking (DeVries & Zan, 1994). Interpersonal skills are necessary in order to recognize other children's perspectives.

Interaction with peers during play allows friendships to flourish (Laursen & Hartup, 1989). Selman (1980) insisted that conflict resolution (CR) plays a vital role in the maintenance of friendships. The great philosopher David Hume once stated that"truth s prings from argument among friends." Hartup and his colleagues compared conflicts between "friends" and "nonfriends" in preschool children (Hartup, Larsen, Stewart, & Eastenson, 1988). They found that friends were more likely than their (non-friends) counterparts to resolve conflicts more peacefully; friends more often utilized forms of compromise and consequently remained sociable thereafter. According to ethological research by De Waal (2000) and Verbeek, Hartup, and Collins (2000), young children cooperate far more than they fight with each other (cf. de Haan & Singer, 2003).

Additionally, children often show restraint when they encounter strong resistance; they frequently withdraw and try again at a later point – trying to resolve the conflict in order to preserve the camaraderie. The trend to resolve conflict peacefully is based on the quality of friendship before the conflict occurred (Hartup, 1992).

Rende and Killen (1992) found that children who played together before a dispute were more likely to resolve their conflict and continue play than those who didn't play together before the conflict. Prior interactions, especially among friends seemed to promote continuation of children's relationship by allowing them opportunities to resolve conflictual issues. It has been well documented that older children (i.e. pre-adolescents), who participated in high-quality friendships suffered less loneliness than other children, in part due to companionship, intimacy, conflict, and ease of CR (e.g., Crick & Nelson, 2002; Parker & Asher, 1993). While I do recognize that the type and quality of friendship changes with age, research by Parker and Asher (1993), for example, corroborated that conflict is a key, stable marker of quality friendship. Given that conflicts often bring about learning, Schaffer (1997) argued that "participation in conflicts provides children with a natural opportunity to learn 'the art of reasoned argument'" (p. 261; cf. Chen, Fein, Killen, & Tam, 2001, p. 524).

1.4 Rules & Regulations

"The golden rule is that there are no golden rules" George Bernard Shaw, *Man and Superman*, 1903.

Durkheim (e.g., 1925/1973) theorized that rules function to both "regulate and integrate the social group – that is, to maintain cohesion" (Nicolopoulou, 1993, p. 14). Group cohesion, as a result of rules, affords more orderly and peaceful play situations with others. Accordingly, rules are integral for social interactions. Human interactions entail an ongoing and concurrent practice of internalizing and externalizing rules of activity (Engestroëm, Miettinen, & Punamaki, 1999).

"Internalization and externalization are the dialectical mechanisms that allow an individual to construct higher psychological structures … [which] lead to the production of new tools" (Moran & John-Steiner, 2003, p. 23).

Vygotsky (1933/1966) stressed that play contains two key interrelated elements: an imaginary situation and implicit rules; these components are present in both fantasy play and game with rules. He argued that during cooperative make-believe play, children develop rules that direct their activity. For Vygotsky, make-believe play is the supreme activity for cultivating early childhood aptitudes. He added that all games with imaginary situations are concurrently games with rules. Towards the finale of play development, rules materialize; the greater the rigidity of the rules, the greater the demands on the child's purpose, the greater the regulation of the child's activity, and in turn the more tense and acute play becomes (Vygotsky, 1933/1966).

From the perspective of children, rules allow them to make sense and partake in the adult world. Adhering to rules was of great importance for Vygotsky (1978); he claimed that rule adherence leads to approval from both other people and, consequently, oneself. Obeying the rules of play keeps children within the boundaries of "reality." Attempting to stay within this boundary of reality allows the children to develop and practice self-regulatory abilities. Again, children should inhibit the desire to act on their impulses. The lack of action inhibition may in turn lead children into peer conflict.

1.5 Conflict

"No doubt there are other important things in life besides conflict, but there are not many other things so inevitably interesting. The very saints interest us most when we think of them as engaged in a conflict with the Devil" Robert Lynd (1923).

Children engage in a wide array of interpersonal contacts, including with other children and teachers. One feature of this developing social realm is confronting conflicts that occur with interactions, especially with peers. Historically, the concept of 'conflict' has been embedded as the root of development in many prominent theories, including those by Baldwin, Freud, Lewin, Piaget, Skinner, and Vygotsky.

From Piaget's 'Constructivist' perspective, conflict and its resolution are imperatives components of the education curriculum rather than a problem to be dealt with (DeVries & Zan, 1994). Furthermore, a Constructivist approach encourages teachers to engage students in conflict resolution, reciprocal reasoning, and sharing of experiences and emotions (see DeVries & Zan, 1994). DeVries and Zan (1994) suggested that social conflicts are considered opportunities for children to develop their cognitive, moral, and social skills by appreciating the viewpoints and intentions of others and for advancing mutually agreeable resolutions to problems. "Constructivist classrooms focus instruction on a student's individual meaning-making process. There is an assumption that students bring an understanding into the classroom that need to be adjusted, added to, or altered. The teacher's role is to facilitate cognitive alteration through designing challenging tasks/ questions" (Richardson, 1997, p. 7). Piaget (1923/1955) claimed that children's socialization is more likely to be facilitated when they interact with peers than with the adult. Furthermore, peer interactions grant children a greater chance to face conflicts and come up with resolutions by using negotiation strategies (Kamii & DeVries, 1980). Raver and Zigler (1997) stated that SR may not be part of formal preschool curricula, however, "teachers are supporting children's development of optimal emotional SR when they intervene in peer conflict with recommendations to "use words rather than fists" or when they encourage an angry child to "take some quiet time" in order to avert an emotionally explosive episode" (p. 368).

Conflict is a key mechanism for change and development (Shantz, 1987). Shantz and Hartup (1992) claimed that "conflicts – between people and within people – are part and parcel of everyday living, and to such an extent that they must be regarded as intrinsic to the human condition" (p. 1). Research on conflict and CR in non-human primates has revealed numerous similar patterns of behavior that children also utilize (see Aureli & de Waal, 2000; White, 1942). As individuals (and perhaps certain primates) spend time engaging in social activities, conflicts often arise (Caplan, Vespo, Pedersen, & Hay, 1991). Children's conflicts become increasingly more social during the preschool period (Chen, Fein, Killen, & Tam, 2001). In addition, conflict is an omnipresent reality of play (Polnariev, 2002), which should be viewed within a socially dynamic context (Caplan, et al., 1991).

This field remains filled with methodological issues. The primary issue is the operationalization of key terms. The term 'conflict' (*conflictus*) comes from the Latin word meaning "to strike together" (see American Heritage Dictionary, 2000). The same dictionary (2000) defines conflict as synonymous with "contest, combat, and fight…These [terms] denote struggle between opposing forces for victory or supremacy" (p. 1). In some previous research, the word 'conflict' has been used interchangeably with terms such as 'aggressive behaviors,' 'aversive,' 'coercive,' and 'disruptive' (see Shantz, 1987). The terms 'conflict' and 'aggression' are often confounded. Shantz (1987), a pioneer in the field, defined *conflict*as an interpersonal episode involving clear behavioral opposition, which includes several discrete functions, including oppositions and resolutions (also see Hay, 1984); this social conflict involves two or more partners that engage in incompatible activities (Deutch, 1973). Conversely, *aggression* is behavior aimed at intentionally harming another individual. Furthermore, Shantz (1987) argued that opposition is transformed into conflict when it becomes mutual — when the opposition of one child is in turn

disputed by the child whose actions were first objected to. Many dictionaries use the term 'hostile' behavior (or issue) as a synonym for 'aggression' (e.g., The American Heritage® Dictionary of the English Language, 2000). Conflict is methodologically understood in static terms, for example, those of frequency, duration, intensity, strategy, outcome, or impact on relationship. Hay (1984) claimed that a protest or resistance to the action of another person usually signals the onset of conflict. Such relationships do not appear to take into account the dynamic process of conflict. Defining conflict as a process captures the active nature of this construct. Therefore, a new dynamic way of reconceptualizing conflict should be sought.

Unfortunately, conflict is still typically negatively perceived (Killen & Turiel, 1991; Shantz, 1987) even after decades of research establishing the positive outcomes of conflict. Chen and her associates (2001) claimed that many parents, teachers, and researchers alike believe conflicts must be terminated as soon as possible rather than recognize them as a natural and common context for children to develop necessary social skills. Deutsch (1963) suggested that conflict be understood as a socially constructed process with positive consequences (cf. Marcus, 1985). From a Constructivist perspective, social conflicts are regarded as opportunities for children to develop their cognitive and social skills by appreciating the perspectives of others and for generating mutually agreeable solutions to problems (DeVries & Zan, 1995). Conflict is in fact an extremely beneficial and advantageous phenomenon; for conflict to occur there should be some level of candidness and intimacy with the other person. Social interactions with peers facilitate metacognitive skills like planning since children should verbalize their goals and display their behaviors in order to coordinate play activities (Hartup, 1985). Flavell (1979) theorized that metacognition influences not only CR abilities but also facilitates the avoidance of conflict

altogether. As such, since older children have greater metacognitive skills, they can better resolve and prevent intense conflicts.

Peer conflicts have been recognized as a means of abating egocentrism, expanding social skills, and advancing cognitive functions (DeVries & Zan, 1994; Genishi & DiPaolo, 1982; Killen & Turiel; Shantz, 1987; Shantz & Hartup, 1992). This outlook reflects Piaget's 'theory of equilibration.' Chapman and McBride (1992) expanded on Piaget's contention that (cognitive) conflict leads to "disequilibrium"– both intrapersonally and interpersonally. Chapman and McBride (1992) effectively argue that cognitive conflict is facilitative though it may not be sufficient for cognitive development. Conflicts are generated within the context of peer interactions. To the degree that persons engage in negotiations kinds of argumentation, they do not simply express their disagreements but also cooperate in discussing them (cf. Bearison et al., 2002, p. 87). These conflicts can lead to children's increased ability to cooperate with others (Piaget, 1932/1965).

Kamii and DeVries (1980) contended that "when Piaget uses the term co-operation, he means "co-operating," "operating together," or negotiating" to work out an agreement which seems right to all participants (p. 16). 'Cooperation' is the method of interaction which makes children's socialization process possible. Cooperation allows children to continue friendships and to play with one another. When children work together in cooperative relationships, they must 'decenter' their egocentric viewpoint. These authors defined decentering as "viewing something from a point of view that differs from one's original viewpoints" (p. 18). Decentration is strongly believed to be pivotal to cooperation.

Conflicts evolve across time (Chen et al., 2001). Conflict and CRS are recognized and consequently treated here as indices of SR; conflict issues largely determine the CRS. For

example, Ross and Conant (1992) noticed that conflicts over objects tend to involve physical resistance, although, as children grow older, they become more likely to utilize assertive verbal remarks. One goal of both parents and teachers is to guide young children's CRS "from physical to more culturally appropriate and approved verbal strategies" (de Haan & Singer, 2003, p. 95). Children ought to make the shift from behavioral to verbal methods of CR; teachers should promote children to 'use their words' instead of their physical power by pushing or hitting (p. 98). When teachers propose that children utilize verbal strategies of CR (for example, 'use your words'), instead of using physical means, children often accept this idea. However, when their attempts of asking for permission, for example, are met with resistance, children often revert back to more basic and effective means such as brute force (de Haan & Singer, 2003). de Haan and Singer (2003) further pointed out that "children [probably] have interpreted asking as a formulaic means of getting their own way rather than initiating a negotiation as their teachers intended" (p. 106). de Haan and Singer (2003) stressed the importance of experiencing negotiation as a tool which will eventually enable children to better control their abilities in the environment. The preschool period is a seminal period for the development of skills necessary for perspective taking and CRS (DeVries & Zan, 1994; Hartup et al., 1988).

Remarkably, Killen and Turiel (1991) observed children's conflicts to be more aggressively resolved in the presence of adults, while also displaying more negotiation strategies in teachers' presence. This finding may suggest that teacher supervision may in fact inhibit the development of some social skills. In our society, we expect older children to require less supervision than younger children. Although this expectation may still hold, younger children perhaps should also be granted more freedom from supervision.

Conflicts episodes are usually brief (Chen, 1998; Dawe, 1934; Eisenberg & Garvey, 1981; Hay, 1984; Shantz, 1987). For most preschooler, the average duration of conflicts was about 23.63 seconds (Dawe, 1934) to 31 seconds (Shantz, 1987). Only 15.38% (n = 13 out of 200) of conflicts in Dawe's (1934) study lasted more than 1 minute. Although salient, conflicts have been argued to occur relatively seldom (as compared to total amount of time spent interacting with others; e.g., Hay, 1984; Shantz, 1987). Killen and Turiel (1991) observed that, for preschoolers, conflicts occurred every 8.26 to 9.34 minutes while Bakeman and Brownlee (1982) calculated its occurrence to be at every 12.5 minutes. Genishi and DiPaolo (1982) observed one conflict occurring every 3.3 minutes during free-play. Bayer, Whaley, and May (1995) recorded a peer conflict incidence during free-play every 2.6 minutes (cf. Chen, 1998). Surprisingly, Dawe (1934) found conflict very rare, one evident every 3.4 hours. Note that the frequency of conflicts varies as a function of the method of investigation as well as the definition of conflict.

Killen and Turiel (1991) found thatobject -oriented conflicts concerning the *distribution of resources* (for example, violation of turn-taking or sharing) were the most common issues for preschoolers; this claim was supported by Chen (1998); in fact 58.4% of the conflicts were about *sharing* toys and other classroom artifacts. The next most important issue in Chen's research was found to be about *play ideas* (25.5%). In Hay's (1984) review of preschool conflict, he found that with an increase in age, there was an increase of more socially-oriented conflict, focused on issues such as *access to play* (Shantz & Shantz, 1985), *psychological harm* (e.g., teasing), *physical harm* (e.g., pushing, hitting, or biting), and *social order* (e.g., classroom rule violations; Killen & Turiel, 1991). Killen and Turiel (1991) further found that for older preschoolers' conflicts revolved around issues of morality (i.e., *individual rights*) and *social order* (i.e., rules). Some noteworthy results from my masters' thesis (2002) included: most conflicts revolving around *social order*

issues (i.e.,. class*rule violations* in that the study) were followed by *physical aggression*; interestingly, these two categories co-occurred in many cases. The least common conflict type was *verbal aggression* which was followed by *distribution of resources* (i.e., *access / object violations*). They also observed that four-year-olds engaged in twice as many *social order* issues than the three-year-olds, eight as compared to four issues, respectively.

Chen (1998) observed 400-target middle to upper classpreschoolers (193 girls and 207 boys); almost three-fourths of the children were "Caucasian" (72.8%), 20.5% were "Black", and 6.8% were classified as "Other." These children were from 25 "different" classrooms within two centers; both centers were near the University of Maryland. Peer conflict event was used by Chen (1998) as the unit-of-analysis. Her exploration revealed that about 19.5% (n = 78: 23 out of 95 two-year-olds, 29 out of 155 three-year-olds, and 26 out of 150 four-year-olds) of children were not involved in any conflicts (note that 60.9% of two-year-olds, 41.4% of three-year-olds, and 46.2% of four-year-olds were, however, involved in at least one conflict). Nonetheless, 90.5% (n = 360: 86 two-year-olds, 138 three-year-olds, and 136 four-year-olds) of children in her study were involved in at least one conflict; 71.8% (n = 287) were involved in 2 conflict events; 14% (n = 56) were in 3 conflict events; only 4.2% (n = 17) of the 400 children were involved in more than 3 conflict events. In her analysis, Chen (1998) only included the first peer conflict event produced by each target child observation. Chen (1998) reasoned that since some children may contribute multiple conflicts to the data, some children would be therefore over-represented. I[2] argue that since conflict (i.e., conflict in the group as the unit-of-analysis) was investigated and not individual children, I should utilize all of the conflicts observed. In this way, I can more fully understand the dynamics of conflict. As such, for our method of investigation, I utilized and analyzed allof the conflicts generated during observations.

Of the observed 322 conflicts (reported in Chen's, 1998 study), 35.7% were mixed-sex events, 34.7% were boys-only events, and 29.6% were girls-only events – the sex make-up of conflict episodes was not significantly different. Two-year-olds had the lowest incidence of peer conflicts (75.8%), while those of three- and four-year-olds were slightly higher (81.3% & 82.7%, respectively). Two-year-olds had the highest percentage of mixed-sex events (45.8%), while three- and four-year-olds had about the same (33.3% & 32.3%, respectively). Although age differences with conflicts were expected based on some previous research, Chen (1998) found no significant differences. Miller, Danaher, and Forbes (1986) investigated sex differences in CR with five- and seven- year-olds. The results indicated that, once in a conflict, boys were more inclined to initiate both *physical* and *psychological* harm, whereas girls more often tried to tone down conflicts especially during same-sex play. With respect to aggression, Laursen and Hartup (1989) found no significant gender differences. Elias and Berk (2002) also did not obtain any significant sex main effects with respect to conflicts. Teachers reliably rated boys as more impulsive on the SCRS (Elias & Berk, 2002). In other words, teachers consistently perceived boys as more conflictual than girls. Based on the literature, the role of age in children's conflict seems to be more important than the role of sex. As girls and boys become older (and mature), they are expected to have developed a more refined cognitive, social, and emotional awareness.

1.6 Role of age

"Pretty much all the honest truth-telling there is in the world is done by children" O. W. Holmes.

Why study SR development in preschoolers? With preschoolers, SR expands daily. The most honest and authentic reality show is captured in the preschool classroom. Capturing children's interactions reveals true development. Age is often considered an "empty marker of development;" although it is an important correlate of development, especially with respect to

abilities (from reflexes to complex thinking and SR). Age was negatively correlated with self-reported conflict frequency; however, age was positively correlated with severity of conflict (Smetana, Yau, Restrepo, Braeges, 1991). Astington (1993) for example, reported that cognitive and social abilities change with age. Children's conflicts qualitatively change with age (Caplan, et al., 1991; Killen & Turiel,1991; Laursen & Hartup, 1989). During the preschool period , children come to better connectthe link between intention and action along with a greater capability to use more sophisticated reasoning skills to evaluate ever-growing social situations (Crane & Tisak, 1995). SR has been theorized and tested to develop between the ages of three– to four — the preschool period (Bronson, 2000; Elias & Berk, 2002; Kopp, 1982, 1987). Luria (1961) found that, by age three, children could adhere to specific adult instructions fairly well. He argued that by five years-of-age, they can verbally regulate much of their own behavior. In his book on verbal regulation of behavior, Luria (1960) stated that words (especially commands) excite action but have an ineffective inhibiting effect (cf. Crain, 2005). In other words, adult speech can stimulate behavior but is less effective in terms of regulating it. Moreover, Luria (1960) observed that for younger preschoolers (around three-years-of-age) sometimes inhibitory commands further intensified misbehavior. According to Luria (1960), SR in a 'normal' individual (i.e. without frontal lobe damage) is ultimately developed from internalization of the semantic content (or meaning) of commands from the social world coupled with the ability for *inner speech* (verbally guiding oneself) during potentially demanding moments.

The prevalence and form of conflict, CR, and SR changes as children mature (Caplan, Vespo, Pedersen, & Hay, 1991). Utilizing clean-up scores, Elias and Berk (2002) confirmed that age was indeed associated with greater SR. Caplan and her colleagues (1991) observed that infants, under most conditions, demonstrated more prosocial CRS than other approaches. More

recent research has confirmed this positive finding. Most children resolved conflicts prosocially in my pilot study. Also, Elias and Berk (2002) found that four-year-olds indeed demonstrated greater levels of SR than three-year-olds during clean-up sessions.

The preschool period (i.e., ages between two and five) marks a key and unique time, when children engage in numerous peer interactions. If children wish to be accepted as play partners in the classroom, they should learn to regulate activities with multiple partners – each with their own beliefs, desires, and intentions. Laursen and Hartup (1989) found age differences for CR and post-conflict reconciliation. They observed older preschoolers to be more willing to continue playing with one another as long as the conflict was not very intense. Younger preschoolers were much less flexible in resolving disputes and consequently playing together – illustrating a deficit in interpersonal skills (Laursen and Hartup, 1989).

Social interactions afford the development of a wide range of abilities, including self-restraint. Barker and Wright (1955) found that the proportion of time spent in social activity increased two-fold from age two (about 10%) to age four (about 20%). The amount of time spent engaging in sociodramatic play increased as children matured. CSD play, in particular, is an ideal context for the development of these indispensable skills (Fein & Schwartz, 1986). Pepler and her associates found age trends with slightly older peers: younger children (i.e., six-year-olds) spent more time in solitary play than their older counterparts (i.e. 12-year-old children).

James Wertsch and his colleagues (1980) observed 18 mother-child dyads at various ages (i.e., children were separated into three groups: two-and-a-half-, three-and-a-half -, and four-and-a-half-year-olds). He and his colleagues (1980) watched the children copy a truck jigsaw puzzle. Examination of children's gazes showed an increase in SR with age. The older children's gazes were also more effective for SR. Wertsch and Hickmann (1987) demonstrated how the transfer

from social to SR took place within a single episode of puzzle-solving; this finding led the team to propose a number of factors as being conducive to SR transformation: children's cognitive readiness, the adult's willingness to transfer strategic responsibility, the adult's use of 'reflective assessments,' explicitness of adult directives, and appropriate separation of language functions (Wertsch, 1985).

Our education system is in large part based on age and the accompanying expectations of age appropriate abilities; children are to fit within a developmental "norm." Accordingly, social interactions provide the first step towards social competency: children develop their own perspectives while realizing that others may have differing perspectives, they comprehend and apply rules, develop language abilities (especially pragmatics), and value a sense of self and identity as well as developing friendships (Raver & Zigler, 1997). This advancement and transformation is afforded in part by interactions with the world. Dewey (1938/1997) alleged that schools depend on a sense of community and affirmed that "most children are naturally 'sociable.'…A genuine community life has its ground in this natural socialability" (p. 61). Therefore, individuals are not only part of a community but are also intertwined with it.

In line with Vygotsky's (1967) stance, Gowen (1978) observed preschoolers interactions during free-play. Gowen found that older children (i.e., four- to six-year-olds) were in fact better able to detach thought from object and action as compared to their two- to three-year old counterparts (cf. Rubin, Fein, & Vandenberg, 1983). This separation illustrated a sophisticated ability on behalf of the older preschoolers. It appears as if age, practice, and maturity all transformatively contribute to the development of a number of important skills, especially SR and advanced play.

1.7 Conflict Resolution Strategies (CRS) and Self-Regulation (SR)

"The only way for us to live together successfully as a human species is to figure out how to deal with diversities of all sorts. If young children learn to do this in their small classroom group, perhaps they will be able to expand it to larger groups in society" DeVries & Zan, 1995, p. 13.

Vygotsky (1978) argued that children develop SR from a need to deal with conflicts which arise from play's pressures. Peer conflicts present genuine opportunities for children to develop conflict resolution skills (Chen, 1998; DeVries & Zan, 1994; Hartup et al., 1988; Shantz & Shantz, 1985). In the literature, CRS has been used as an indicator of social competence. CR abilities are very much connected to and display social intelligence (e.g., Österman, Lagerspetz, Landau, Fraczek, & Pastorelli, 1997). Social competence is theoretically and empirically related to the capacity to regulate both behavior and emotions (Eisenberg & Fabes, 1992; Raver & Zigler, 1997). "Behavioral regulation directly predicted socially appropriate behavior" (Eisenberg et al., 1997, p. 308). The regulation of behavior during peer interactions in general has been hypothesized to play an important role in determining children's social competence and peer acceptance across time (Hubbard & Coie, 1994). Killen and de Waal (2000) claimed that the experience of resolving peer conflicts provides a social foundation on which children attain cognitive, moral, and social knowledge. Social competence depends on the situation (Chen, 1998). Researchers typically have measured CR as either a strategy or an outcome. Cavell (1990) argued that "conflict resolutions is a skill in so much as it is a specific ability that enables one to perform competently within social tasks" (p. 118). Fabes and Eisenberg (1992) noticed that socially competent and popular preschoolers were less likely to be involved in 'heated' conflicts.

CRS is a function of the conflict issue. Chen (1998) pointed out that "children are quite capable of resolving their own conflicts with very little aggression" (p. 134). In a study of 69

preschoolers from three different preschools, Killen and Turiel (1991) found that during semi-structured peer group play activity (i.e., children were instructed where to sit and what to play with), most conflicts remained unresolved, and among those that were resolved, many of the resolutions were generated by children. In Killen and Turiel's (1991) study, the adult generated most of the resolutions in the free-play settings, including 60% of conflicts that involved *physical harm* and *social order*. Children resolved only 19% of their conflicts (or at least had the opportunity to resolve the conflicts on their own) and 23% of conflicts went unresolved. There were 201 conflicts recorded in the peer groups with an average of 4.19 conflicts during 15-minute sessions across a total of 48 sessions [ranging from 1 to 10 conflicts per session]. However, there were only 61 conflicts in the free-play session with a mean of 10.5 conflicts observed in the free-play session (ranging from 4 to 40). In Killen and Turiel's (1991) study, they reported greater conflicts in the peer group setting, more than three times the number during free-play conflicts. Overall, findings indicated that the frequency of teacher intervention in preschoolers' conflicts ranged from 11% to 38% (Bakeman & Brownlee, 1982; Killen & Turiel, 1991. Bakeman and Brownlee (1982) found that teacher intervention is prevalent with younger children. Laursen and Hartup (1989) concluded that children took responsibility for their interactions and created their own resolutions more frequently when a teacher was not present. This finding suggests that perhaps adults should grant children more autonomy when playing and resolving conflicts – basically, giving them 'room to grow.'

Killen and Turiel (1991) utilized three types of CRS for their study: child generated, adult-generated, or topic dropped (the topic that initiated the conflict was dropped and the play moved on to a new topic). Although perhaps allowing for greater reliability of codes, these three CRS do not seem to fully reflect how children actually resolve conflicts. Furthermore, this approach does

not consider the importance of CR as a key indicator of SR. I provide a more detailed CR coding system to address this gap while focusing on the group activity as the unit-of-analysis (see Appendices B1 & B2).

Arsenio and Killen (1996) stated that "differences in settings can be a substantial influence on preschoolers' behavior" (p. 55). Two settings explored (i.e., peer group in the lab and free-play group in the classroom, cf. Killen & Turiel, 1991) resulted in more conflicts that ended without active resolutions than in the ones resolved by children. Children themselves settled conflicts more frequently in the peer (lab) groups than in the free-play group setting. Killen and Turiel (1991) also noted that there were more conflicts involving *physical* and *psychological harm* in the free-play setting than in the peer group setting; in contrast, there were greater amounts of conflicts over *distribution of resources* in the peer group setting. Furthermore, in this study, children demonstrated competency and a capacity to resolve conflicts on their own if given the opportunity; adult interventions have often led to adult-generated resolutions when they were involved in the CR (Killen & Turiel, 1991). Killen and Turiel (1991) further found that teachers produced more solutions to those conflicts thatconcerned *physical harm*, the *distribution over resources*, and *access* to objects and space rather than *psychological harm*. Resolution of these conflicts happened more readily perhaps because these physical issues require immediate attention and affect children psychologically more than verbal types of conflicts. It is possible that teachers' decisions about conflict intervention were dependant on a number of factors such as age of the child, conflict issue, and CRS previously employed. Hence looking only at the frequency of teacher intervention provides a partial account of the teacher's role in the developing appropriate CRS (Chen, 1998). Wheeler (1994) acknowledged that when teachers provided and implemented resolutions, they occasionally made mistakes, were inconsistent, or unfair. Although teachers may

have good intentions, they may inadvertently blame an innocent child because they are not fully cognizant of the entire dynamics of the play interactions.

In some research (e.g., Chen, 1998; Killen & Turiel, 1991), actions that did not result in an explicit dispute with another child were not qualified as 'conflicts' (cf. Laursen & Hartup, 1989). This treatment of conflict neglects some ways of how children resolve issues – in fact, many times, children (and adults alike) do not actively protest actions. This lack of active CR does not mean absence of CRS; instead, it quite clearly demonstrates a *passive* CRS. Although not a proactive attempt at CRS, a *passive* strategy indeed requires SR – for some children, this strategy may be quite difficult; the difficulty level is dependent upon the context. Most conflicts ended as a result of compliance byone party, while others ended because both parties dropped the issue (Killen & Turiel, 1991). Ross and Conant (1992) found that most children who complied with a peer did so due to force and/or threat.

Based on my masters' thesis (2002) of naturalistically videotaped interactions among preschoolers (n = 12) during free-play (one 15-minute observation per child), slightly more than half of the conflicts were resolved by children themselves (17 of 30, or 56.67% of conflicts); 30 conflicts yielded 35 total solutions from both children and adults. Children employed both verbal and behavioral *assertive* CRS, 10 and 6 respectively (16 out of 22 CRS, or 73%). Many conflicts were resolved by teachers (13 out of 35, or 37.14% of total CRS involved adult intervention; note that one child requested the aid of a teacher). Four-year-olds were more *verbally assertive* (for example, stating "I don't like that") than their three-year-old counterparts and were also given more freedom to practice CRS (7 verbal assertive strategies versus 3, respectively). Eight children engaged in all 30 conflicts (thus 4 children engaged in no conflicts). Most conflicts involved *class-rule violations* and *physical aggression* (12 and 11 out of 30, respectively or 76.67%

collectively); four-year-olds were involved in these conflicts significantly more than were three-year-olds (16 versus 7 in total, respectively).

Chen (1998) found that 120 out of the total 322 conflicts were resolved by children, while the rest were either unresolved or resolved by a teacher: 26.1% (n = 19) of two-year-olds conflicts', 33.3% (n = 42) of three-year-olds conflicts and 47.6% (n = 59) of four-year-olds conflicts. There was a positive linear progression of child-generated CR with age. Chen, Fein, Killen, and Tam (2001) argued that older children seemed to be more autonomous (having resolved more conflicts on their own) and at the same time more dependent (having solicited more teacher aid). Chen and her colleagues (2001) indicated that two-year-olds typically resolved their conflicts with *behavioral assertive* CRS (e.g., grabbing another child's hand) or *verbal assertive* (e.g., "Don't do that"). Three-year-olds CRS involved slightly more verbal elaboration (e.g., "No, I had it first"). Four-year-olds, in contrast, employed much more elaborative CRS – they, as a group, frequently attempted negotiation (i.e., suggesting alternative solutions to conflicts). Despite much progress in the field, there remains paucity in understanding how children resolve conflicts during play in relation to their age. The preschoolers in Chen's research frequently referred to teachers or authority figures (i.e., *appeal to authority* in my coding system, see Appendix B) in their verbalizations (e.g., "The teacher said everyone can play here"; see Chen, 1998 or Chen et al., 2001 for a full review). While the solicitation of teacher help revealed increased understanding of the function and power of teachers as enforcers of social rules, it also served as indication of learning and development (see Dunn, 1987).

Other CRS such as *prosocial* actions have been detected to be relatively stable across age (e.g., Eisenberg, 1990; Radke-Yarrow, Zahn-Waxler, & Chapman, 1983), though relatively rare in young children. *Physical aggression* (or *hostile behavior* in my coding system; see Appendix B)

as a means of CR has been observed to be a rather rare event for preschoolers' conflicts (5-20%), whereas *hostile verbal* strategies occurred more frequently (Polnariev, 2002; Shantz & Shantz, 1985). Aggression has been consistently shown to be moderately stable (typically in the 0.50-0.60 range) across age (e.g., Coie & Dodge, 1998; Huesmann, Eron, Lefkowitz, & Walder, 1984; Olweus, 1991). Arsenio, Lover, and Gumora (1993) documented an amazing and disconcerting amount of aggression during conflictual episodes; specifically, more than 1/3 of conflicts involved some level of aggression during free-play behavior (cf. Arsenio & Killen, 1996). Somewhat surprisingly, children's conflicts were likely to be more *hostile* when a teacher was present (Killen & Turiel, 1991), suggesting that SR was more likely to be enforced when the teacher was either not watching or not present.

Pepler and her colleagues (1998) suggested that "aggressive children" may be at risk primarily because of deviant behavior rather than the lack of prosocial behavior. Interestingly, Pepler, Craig, and Roberts (1998), using playground observations of older children, found that aggressive children acted more often prosocially than nonaggressive children during peer interactions. Pepler and her associates (1998) observed 39 children in their study; the ages ranged from six- to twelve (mean age = 9.4, standard deviation = 2.0). The children were recruited from two schools — both groups were from a large metropolitan city in Canada. Note that the above study relied on observations at a playground during lunch and recess times - which were unstructured and had minimal adult supervision (roughly 1 adult per 100 children). Lack of child supervision, especially in a large and open setting may have dramatically influenced the occurrence of both conflict and aggression.

There are many approaches to measure SR. For example, Elias and Berk (2002) used naturalistic classroom observations and the *Self Control Rating Scale* (Kendall & Wilcox, 1979).

However, during the observations, Elias and Berk focused on preschoolers' clean-up and circle-time periods (children were videotaped at two points in time). During clean-up, the observers assessed the degree to which children took responsibility for cleaning up the resources used during free-play; the children were assessed on the degree to which they were cooperative and attentive. As noted by Elias & Berk (2002), this method of assessing SR was first developed by Huston-Stein, Freidrick-Cofer, and Susman (1977). Since then, the clean-up method has been used by many researchers in the field (e.g., Allessandri, 1992; Elias & Berk, 2002; Kochanska, Murray, Jacques, Koenig, & Vandegeest, 1996). Does this necessarily mean that the above method ideally captures the full scope of SR? Elias and Berk (2002) stated that this "coding system for self-regulation …taps the extent to which the child takes responsibility for picking up his or her toys and assisting others during clean-up periods and the extent to which the child is attentive during circle time" (p. 224). This investigation into SR is only a piece of the complicated puzzle. In addition, Elias and Berk (2002) utilized a modified version of Alessandri's (1992) SR observation scheme (cf. Elias & Berk, 2002). They measured the degree of cooperation and SR on a scale of 1 to 6, which included the following codes: (1) obstructs efforts to pick up; (2) refuses to stop or give up toys; (3) does not participate; (4) assists in routine pickup with supervision; (5) picks up cooperatively with other children without direct supervision; and (6) picks up without supervision and without help from other children. This coding scheme allowed them to illustrate the development of SR (as presented in Kopp's, 1982 model) during free-play – from low to high functioning levels of SR. Elias and Berk (2002) collected these SR scores from two observations. Summarizing their findings, they stated that only "CSD play frequency and persistence accounted for future [SR], despite the fact that children approached the play situation with widely varying initial self-regulatory capacities" (Elias and Berk 2002, p. 231). CSD play frequency and

persistence showed no significant relationships with circle time activities at Times 1 and 2. Clean-up and circle-time SR action was significantly related to one another; however, CSD play frequency and persistence were related with clean-up performance.

While I do agree that the methods mentioned above tap into some self-regulatory functions, I argue that they appear to only tap into simple ones and therefore ignore the more advanced functions. For example, the approach that Aletha Huston-Stein and her colleagues (1977) developed may work well with very young children (i.e., children younger than two) but in order to fully understand SR of older preschoolers, more cognitive and higher order thinking should be examined. In addition, 21st century preschool classrooms tackle more difficult issues than ever before. As such, more developmentally and currently appropriate methods can be applied to today's issues. Problem-solving skills are of primary concern for teachers and parents alike. In order to resolve issues effectively, children should maintain emotional and behavioral self-restraint. CR calls upon a number of complex abilities. I assume that CR draws upon and therefore demonstrates the capacity for SR. Raver and Zigler (1997) pointed out that, while preschoolers may be able to rationalize effectively about conflict, young children might not be able to apply the necessary socio-cognitive tactics "in the heat of the moment" (p. 370). This point illustrates the crucial role of concurrent behavioral, cognitive, emotional, and social regulation. For example, behaviorally, children should control their own behavior (e.g., leaving a conflictual situation), cognitively, they should make use of memory (e.g., short-term memory); emotionally, they should monitor their negative outbursts; socially, children should obey classroom rules.

1.8 Context and Self-Regulation

The context is a key component for appreciating the amount and the type of behavior children exhibit. Children's CRS differ by type and frequency – their occurrence is tested by

circumstances including the familiarity of environment and peers, presence of teachers and/or parents, emotional status (e.g., anger, fear, sadness), and intentionality (e.g., to maintain friendship). Bronfenbrenner's (1977) seminal work can be used to better understand how the context (via various systems in the social environment) can affect children's behaviors. The setting plays a crucial role in providing children with a number of play options with many partners (and/ or friends) which may lead to conflicts and resolutions. Environmental psychologists have maintained that smaller and more restrictive play spaces may increase the number of conflicts. As a case in point, conflicts are more likely to occur in spaces with only a single doorway which may implies that poor accessibility to play space contributes to various types of conflicts (Wheeler, 1994). Caplan and her team (1991) argued that a lack of space led to many of the observed conflicts.

The development of CRS is ultimately most influenced by children's experiences in actual conflictual situations (Arsenio & Lover, 1997; Killen & Turiel, 1991). Laursen, Finkelstein, and Betts (2001) insisted that, in order to understand children's competencies, researchers should take into account the physical context. The organization of one's environment is in fact not random but instead reflects and can be understood only within the context of a culture's practices and values (Toelken, 1996). "Historical conditions dynamically create new contexts and opportunities for development and creativity" (Moran & John-Steiner, 2003, p. 24). It is essential to consider the effect that space has on individuals' activities and how others shape their space through their practices (Latour, 1987). Furthermore, Babcock (1992) remarked that because individuals constantly shape and reshape their space in many ways, an artifact can take on different functions and meanings in various contexts. Space is regarded as being either insignificant and is overlooked, or as something that should be regulated in order to shape individual actions within an

environment. Merkel (1999) properly and succinctly argued that"space cannot be considered outside the context of the value structure and practices of a folk group" (p. 6, online version).

> In many ways, the classroom is a curious setting. Assigned to classes that may contain strangers, perhaps even adversaries, students are expected to interact harmoniously. Crowded together, they are required to ignore the presence of others. Urged to cooperate, they usually work in competition. Pressed to take responsibility for their learning, they must follow the dictates of a dominant individual — the teacher (Weinstein, 1991, p.1 or 493).

From a sociocultural and activity approach, fully appreciating social interactions requires examining not only the child-in-context as the unit-of-analysis but, I argue, more specifically, examining the group-in-context activity. Since activity occurs within a group setting, it is only appropriate to assess the activity as a function of the group. Behavior is not simply an artifact of nature; instead, it is a complex artifact of both nature and nurture. Human behavior is profoundly dependent upon the context in which it occurs. As such, given varied contexts, each activity could potentially yield varied behavioral outcomes. Although no activity may ever be the same, patterns of behavior can be expected to occur as the number of examined groups and episodes increases. This research practice, at least within this field, has yet to be used; this study will be an attempt to approach this goal.

1.9 Psychological Tools

"Neither hand nor mind alone suffice; the tools and devices they employ finally shape them" Vygotsky. (Epigraph from Francis Bacon; used in Vygotsky's, 1962 book, *Thought and Language*).

Vygotsky alleged that individuals and their cultural environments represented a dynamic, interactive social system. Through their communications and actions, individuals (including

teachers, parents, and peers) implicitly and explicitly teach and learn tools (e.g., speech, symbols, signs) they need in order to acquire SR (Schunk, 2004). For Vygotsky, children first learn to produce and manipulate symbols and signs during play; children's pretend play becomes internalized as fantasy which in turn becomes a consciously directed higher mental function as inner speech develops (Smolucha, 1992). Vygotsky believed that individuals learn to self-regulate themselves by two main mechanisms: speech and scaffolding through the zone of proximal development (cf. Schunk, 2004).

Vygotsky distinguished the principal task of childhood to be an as being encounter with cognitive tools developed by humans through history and culture (Kerr, 1997). Cole (1988) argued that there are no context-free tools, "rather, all tools embody simultaneously a theory of the activity they have been designed to fulfill and a theory of human beings who must carry out the activity. Tools vary from highly specialized to relatively general with respect to the tasks they can fulfill" (p. 148). Tools are initially external and gradually become internal with socialization and practice. Appropriately applying tools is the key to self-regulatory development. Initially, children require the tools to help them regulate behavior but later can self-regulate using internal operations (Vygotsky, 1978, p. 73). Using analyses from group conflicts and CRS allowed us to understand the tools of SR. From a sociocultural perspective, children participate in cultural activities with experts and come to internalize tools for CR. The application of tools changes with children's growing competencies. To understand the development of SR, one should not only acknowledge the existence of tools but also examine how these tools are used within specific contexts as well as how they change through social interactions.

From a Marxist and socio-cultural perspective, one of the main determinants of development is human labor characterized by the use of tools. Marx highlighted the human

aptitude for tool use and production – both as social processes. It is by creating and operating tools that humans master their surroundings, fulfill their needs, and, ideally realize their creative potentials (Crain, 2005). Marx and Engels (1846) wrote that to understand humans, then, we must understand history and the dynamics of historical change; historical development (especially technological development) has changed human competence (cf. Crain, 2005). Individuals transform themselves, the environment, and objects in it with the aid of tools. "Psychological tools perform their functions on the basis of their distinct meaning. The meanings of things and actions are acquired through external and internal tools" (Bedny, Seglin, & Meister, 2000, p. 171). Through imitation and the application of tools (or objects), children advance ready-made modes of action and learn to master the very principle implicated in the activity at hand (Vygotsky & Luria, 1994). "With tools, humans no longer had to accept the environment as they found it. They can change it" (Crain, 2005, p. 221). Vygotsky (1978) theorized that as children develop speech and higher psychological processes, they will be able to better control their behaviors (cf. de Haan & Singer, 2003). Furthermore, this advancement allows children to use words as a tool to resolve conflicts (Vygotsky, 1978).

1.10 Speech

Speech is an indispensable tool of thinking – as it is the principal means for directing and regulating one's own attention and behavior (Vygotsky, 1987). Stetsenko (2004) referred to language as "the tool *par excellence"* (p. 505). Based on Vygotsky's account, Stetsenko (2004) further suggested that "the use of speech radically changes and even creates *a whole new system of behavior*, allowing the child to plan for future actions, to … select the actions that are most efficient in a given situation, to integrate others into the solution of the problem (for example, by asking adults for help and clarification), and so on" (p. 506). This results in a capacity to act

purposefully and in a self-regulated manner. Vygotsky (1987) stated that "speech frees the child from the immediate impression of an object. It gives the child the power to represent and think about an object that he has not seen" (p. 346). Vygotsky (and his colleagues) beautifully concluded the first chapter of *Mind in Society* on Tool and Symbol (1978):

> If analyzed dynamically, this alloy of speech and action has a very specific function in the history of the child's development; it also demonstrates the logic of its own genesis. From the very first days of the child's development his activities acquire a meaning of their own in a system of social behavior and, being directed towards a definite purpose, are refracted through the prism of the child's environment. The path from object to child and from child to object passes through another person. This complex human structure is the product of a developmental process deeply rooted in the links between individual and social history (p. 30).

Speech, and to a lesser extent, other, non-verbal social interactive artifacts are the primary tools that profoundly contribute to SR. A sociocultural stance positions children as active participants who "integrate adult prompts, demands, explanations, and strategies into their private speech. In turning this speech toward themselves, children use language to control such complex cognitive processes as attention, memory, planning, and self-regulation and to redirect their own behavior" (Elias & Berk, 2002, p. 218).

Vygotsky (1934/1987) considered private speech to be the principal method for transmitting regulation of behavior from others to oneself. Speech aids the child to master her or his own behavior (Vygotsky & Luria, 1994). As children get older and master a particular task, private speech goes underground as it takes on a self-regulating function and is transformed into verbal thought (Krafft & Berk, 1998). Current research strongly supports Vygotsky's theory based

on observations of children utilizing private speech to regulate their actions (e.g., Berk, 1992; Berk & Garvin, 1984; Diaz & Berk, 1992). Wertsch (1998) argued that children apply speech to mediate action and activity. Children appropriate speech by using specific verbal scripts to regulate their own thinking and to guide their involvement in classroom free-play. Moreover, since speech is the major dimension in socio-cognitive development, verbalizations during play are accordingly recognized as more sophisticated than behavioral actions. In other words, if a child verbally expresses an idea to further the play activity in some way, this is viewed as a more sophisticated action and thus considered more self-regulated. Vygotsky concluded his book, *Thinking and Speech* (1987) with the following concern: to fully understand an individuals' speech, it is not enough to understand her or his words – we have got to understand her or his thinking; even this is not sufficient – we have also got to recognize its motivation.

Bakhtin (1981) highlighted that sign meanings, like tools in the Vygotskian analysis, are complex and transformative. Vygotsky (1978; 1981) identified mastery over one's behavior through the use of signs as the major milestone of cognitive development for a child. Vygotsky explained the process of how signs are utilized to afford SR: Initially, the social environment provides signs in order to control behavior. "Signs, unlike tools, do not change the objective properties of the external environment but rather are meant to alter the subject's operations on that environment…the signs changes the nature and structure of the activity itself" (Diaz et al., 1990, p. 134). Then, children actively influence the environment by operating with culturally mediated signs; this process allows the child to control and guide others. At this point, children utilize speech (and its shared meanings) to manipulate the social environment. Lastly, speech is transformed and consequently mastered when children exploit words and meanings as tools for planning and guiding their activity (e.g., during play). However, mastery of speech is necessary

but not sufficient for the achievement of SR (e.g., Diaz et al., 1990; Kopp, 1982; Vygotsky, 1978). Research on speech is obviously recognized as essential to study SR; however, for this exploratory study, I combined verbal and behavioral CRS as a way to better assess how it related to conflict. As such, analyses of how speech transforms SR are beyond the scope of this study. Further investigations should delve into differences between verbal and behavioral CRS if we are to better understand SR.

1.11 Internalization

Based on Vygotsky's (1978) theory, all cognitive functions are first occurring socially, through interactions with others and then internalized to be performed psychologically without the need for external support. Internalization (or sometimes translated from Russian as *interiorization*, e.g., Berk & Winsler, 1995) takes place because dialogues with others allows for the transference of psychological processes and skills from the intermental to the intramental plane (Vygotsky, 1934/1987). Leontiev (1959/1981) claimed that"the process of interna lization is not the transferal of an external activity to a pre-existing internal plane of 'consciousness': it is the process in which this plane is formed" (p. 57). From an activity perspective, there cannot be externalization without internalization. Furthermore, internalization is defined as "a transformational process with changes in the structure of activity…According to Vygotsky, internalization is the transformation onto an internal mental plane of external performances during social interactions" (Bedny et al., 2000, p. 171). One comes to appreciate the world through continuous metamorphoses of others' speech and actions via cultural tools. We learn and create artifacts, grant them with meaning and through this process, come to master ourselves, including our behaviors. This dialectical process allows the person to go beyond simple adaptation and change the self and the world (Moran & John-Steiner, 2003). In Vygotsky's (1978) approach, he acknowledged " the influence of nature

on man, asserts that man, in turn, affects nature and creates through his changes in nature new natural conditions for his existence" (cf. Moran & John-Steiner, 2003, p. 5).

Internalization begins when children start "to use for themselves the signs that adults used to regulate their activity. Internalization refers to the child's final mastery and control of social signs, especially of those signs used in the social regulation of behavior" (Diaz et al., 1990, p. 147). Gal'perin viewed internalization as also including the means by which new information was acquired (cf. Arievitch & Stetsenko, 1997). Vygotsky considered higher mental operations as internalized social processes; they are not the consequence of children simply imitating qualities of social interaction (Wertsch, 1985). This idea suggests that the mental and social operations are transformed because of interaction – emphasis is on the root of the word, action. V.P. Zinchenko argued:

> The transition from the inter-individual (shared) object-related action to intra-individual (personal) does not mean that action is internalized. What is central in the [internalization] process is the emergence of an independent action—nothing above or beyond this… [Furthermore, initially,] there is simply nothing to internalize. It is only after higher mental functions are objectivized, exteriorized, and emancipated from object-related activity that they can return to where they belong, while at the same time always keeping the vestiges of the initial activity… [Vygotsky (1984) argued that] immediately before taking an action, the child begins to formulate in words a pattern, a plan of action that thereby anticipates the further course of preferred action" (Zinchenko, in Robbins and Stetsenko, 2002, p. 18-21).

Many theorists have argued against using the term 'internalization' since it does not accurately depict Vygotsky's intention (e.g., Lave & Wenger, 1991; Rogoff, 1990). Instead, A. N. Leontiev used the term *appropriation*. The term 'appropriation' is often preferred over

'internalization' due to the unfortunate connotation of internalization as a simple and passive transmission of knowledge and skills (Lawrence & Valsiner, 1993). Rogoff (1990) further argued that children actively appropriate cultural tools they encounter during shared collaboration in ways that correspond to their specific goals. Although the differences between the terms may be significant, my intention is not to fully discuss the issues surrounding internalization versus appropriation.

1.12 "The Zone"

Vygotsky (1933/1966) proposed that play is the root of development and that it constructs the zone of proximal development (ZPD) – a hypothetical, dynamic region in which learning and development occur. ZPD is defined as the distance between what a child can achieve during independent problem solving and what she or he can achieve with the aid of a more knowledgeable member in a culture (Berk & Winsler, 1995). Children learn to manage and control their own behavior as social play scaffolds them through the ZPD.

Vygotsky (1978) himself maintained that play (especially make-believe) creates a ZPD in the child. "In play, the child always behaves beyond his daily behavior; in play it is as though he were a head taller than himself" (p. 102). Elias and Berk (2002) further proposed that "sociodramatic play allows preschoolers to engage in tasks and set challenging goals in accord with their individuals abilities" (p. 219), allowing children to move beyond their level of mastery – thus advancing them through the ZPD. Pacifici and Bearison's (1991) study revealed the benefits of appropriate scaffolding. They noted that the transition from other social - to SR was radically improved by adults' use of commands which consistently entailed children understanding the task situation at levels slightly beyond their present level of task mastery. The activity of play affords emotional, cognitive, motivational, and social scaffolding (e.g., Smilansky, 1968; Vygotsky,

1978). Moreover, the research on ZPD allowed Vygotsky to articulate a key tenet, '— learning precedes development' (Bedny et al., 2000). Development is an open system. Moran and John-Steiner (2003) argued that "development is not an unfolding of maturational processes, but the continual reformation of complex connections and conflicts that arise in experience as a result of the interdependence among the individual and the social" (p. 7). This perspective is in sharp contrast to the once highly accepted behaviorist view of 'development as equivalent to learning' (e.g., Skinner, 1974).

Vygotsky (1978) developed the concept of ZPD in the context of instruction and testing (Bedny et al., 2000). Hence, educational applications were central to him. Teachers and parents alike capitalize on the play situation as an ideal opportunity to educate children, often through *guided participation* – active participation by children in structured activities with direction and support, usually maintained by an expert (see Rogoff, 1990), or *scaffolding* – a metaphor that implies a support system by experts who provide children with momentary assistance for task mastery while encouraging children to take a greater responsibility for the task as their skill increases (see Wood, Bruner, & Ross, 1976; Berk & Winsler, 1995). Through guided participation, children internalize dialogic exchanges and become able to take responsibility for self-regulatory behavior. Vygotsky argued that instruction is high-quality only when it proceeds ahead of development — thus scaffolded and just ahead of the child's actual level of development. "It then awakens and rouses to life those functions which are in a stage of maturing" (Rogoff & Wertsch, 1984, p. 3). Vygotsky (1997) described ZPD as characterized by conflict between the individuals: "the very essence of cultural development consists in a confrontation of developed cultural forms of behavior which confront the child and primitive forms that characterize his own behavior" (p. 99).

As children become more socialized and competent – having internalized rules and strategies for CR, the teacher's role becomes harder. The teacher should refrain from fully resolving classroom conflicts – thus allowing children a greater role in resolving the conflicts given the tools that have been learned. Slowly, "the zone" is narrowed, allowing children a more autonomous role in CR and thus displaying a greater capacity for SR. If a teacher is hesitant to reserve their command (with respect to CR), children may not have opportunities to practice these necessary SR skills, thereby possibly hindering development. Appropriately teaching SR is a scientific art and requires self-restraint.

Teachers are often classroom referees. Being good at managing a team without shortchanging the players is a complicated endeavor. Managing a large class size (e.g., 6 or more preschoolers) makes it an arduous task for any teacher. It is much easier and sometimes safer to command the team resolution responses; conversely, it is more difficult to teach certain skills like CR and SR and stand back and hope that children not only have learned these skills but also will in fact apply them when necessary. Therefore, teachers often find themselves solving conflicts that arise in the classroom without allowing the children opportunities to employ what has been taught and resolve the conflict on their own. Given such societal and cultural realities, our findings may have been quitedifferent if teachers were no t as preoccupied with worries that children would get hurt and consequentlyhave to face parental and perhaps legal consequences. Certainly it is much easier to criticize than to actually control a class.

Genishi and DiPaolo (1982) made a case that children often do not resolve conflicts on their own because teacher intervention is readily available during classroom disputes. I argue that to become full-fledged members in a society, children should be given appropriate opportunities to resolve conflicts on their own — the taught skills ought to be practiced. Conflict and CR are both

essential for socialization and SR. When teachers are preoccupied with conflict behaviors that may lead to harm or a breach of rules, the inclination is for teachers to associate the conflict with aggressive behaviors and to connect it with a negative experience for children (Shantz, 1987). In contrast, when conflict is seen as a chance for children to learn to control their actions and to develop CR skills, the trend is for teachers to allow children to resolve their own conflict and to mediate only when necessary (DeVries & Zan, 1994). Some teachers normally vary their classroom management strategies consistent with children's developmental abilities and individual needs (DeVries & Zan, 1994); however others consistently use limited strategies with the majority of children, regardless of the situation or individual differences.

In accord with Vygotsky's theory of the ZPD, and the related concept of scaffolding as a way to support children's development, some researchers (e.g., Bredekamp & Copple, 1997; Killen & Nucci, 1995; Tudge & Rogoff, 1990) highlighted the significance of varying the degree of direction according to the needs and abilities of the children involved, thereby reflecting sensitivity to children's developmental abilities (cf. Chen, 1998). There is a lower teacher intervention occurrence for older preschoolers (ranging from 11% to 38%) than for toddlers (ranging from 20% to almost 50%; Bakeman & Brownlee, 1982). The philosophy of frequent intervention is not universal. In fact, Lewis' (1984) investigation of Japanese nursery schools revealed that teachers encouraged children to manage their own and other children's conflicts without teacher intervention (cf. Chen, 1998; also see Genishi & DiPaolo, 1982). However, note that Lewis' (1984) study coded for teacher's proximity to children within the classroom to assess teachers' control. This study looked at both teacher presence, quantity of teachers, and teacher(s) involvement in the conflicts. Lewis (1984) equated teacher 'presence' with 'intervention' – which is certainly not necessarily true; teachers frequently supervise conflicts and CRS without getting

involved either verbally and/or behaviorally. Surprisingly, Lewis' coding practice was not uncommon in the literature (e.g., Bakeman & Brownlee, 1982; Genishi & DiPaolo, 1982).

CR skills should indeed be scaffolded. I am not suggesting letting the children into the classroom ring and hoping that things just work out. Quite to the contrary, I am recommending that parents and teachers provide children with the necessary tools and the opportunity to practice them in many varied situations. Interestingly enough, up until the early 1960's, the teacher's role, according to Spodek (1977) was 'noninterventionist.' "The noninterventionist view held that the teacher's role was to provide a stimulating, attractive environment in which young children could play. The teacher would then step aside and let children play without adult interference" (p. 7). In contrast, a sociocultural approach to guiding social interaction entails that teachers tailor their intervention to children's existing competencies and use techniques that facilitate and regulate children's own actions. Brown and Campione (1994) properly insisted that the teacher's role should be to guide and orchestrate students' discovery processes by directing the child's actions with demonstrations and suggestions. Smilansky (1990) highlighted the importance of proper adult (i.e., teacher or parent) involvement in fostering pretense play. Smilansky (1990) optimistically expected educators to develop their expertise in order to adequately facilitate and support children's play activities. A self-regulated teacher holds back from dominating a conflictual situation and instead allows children to resolve their own conflicts given the tools that they have provided for them along with proper guidance.

CHAPTER TWO:
Questions & Hypotheses

As a former preschool teacher, my interest in this topic came from my daily classroom engagements and observations of children playing. Peer conflict was an omnipresent reality especially evident during free-play. Across time, I began noticing patterns of conflict and CR which became apparent when comparing preschoolers' play interactions with one another, particularly in the presence of a teacher. The engagement of conflict and the application of CRS in essence can be used as a marker of SR capacity which, I theorized, unfolds in the course of social interactions.

2.1 Purpose of the study

My intentions for this study were threefold. The first was to examine trends and factors that influence the development of SR among preschoolers during classroom free-play. Through observations of children's real (life) activities, I illustrated that social conflicts, advanced play, and peer interactions facilitated SR. This research was the first to explore SR across time as a function of conflict and CRS during play. The second goal was to explore conflict and CRS as effective means of illustrating mature levels of SR. Thirdly, as an overarching goal, my goal was to demonstrate that the sociocultural and CHAT approaches can be effectively applied to study SR. In particular, I utilized *children-in-conflict* episodes as the unit-of-analysis; to my knowledge, this approach within the field of SR is surprisingly the first of its kind.

2.2 Research Questions

This study was guided by theoretical analysis of the gaps in previous research as well as by reflections of my personal experiences interacting with and observing numerous young children in the classroom over the years. All of the following research questions were based on preschoolers' group activity during school free-play.

1a. How did contextual play variables (i.e., play type, peer activity, and adult presence) covary with the types of conflicts and with CRS?

1b. How did the relationship between play, conflicts, and CRS change across time (over the course of half-a-year)?

1c. How did the two (age-based) classes compare with respect to the types and complexities of their play, styles of conflicts in which they engage in, and CRS that they implemented?

2a. How did the two classes differ based on the *Self Control Rating Scale* results?

2b. Which collected variables, if any, predicted *Self Control Rating Scale* 2 scores?

2.3 Hypotheses

1a. Role of contextual play variables with the types of conflicts and with CRS

Development of SR is a dynamic, socially created artifact, mediated by a cultural and historical context (Stetsenko & Arievitch, 1997). SR can be understood as a transactive process. Based on the Vygotskian literature, play fosters SR (Leontiev, 1981, Berk, 1994). Taking it one step further, examining activity such as conflict and CRS which transpire during play should provide insight into SR development (e.g., Chen, 1998; Krafft & Berk, 1998) – collectively, play, conflicts, and CRS were recognized as leading level activities for children's SR development.

Utilizing a contextual play variables coding scheme (discussed in the methods section below, see Appendix D), I hypothesized that the greater the number of observed conflicts, the more complex and elaborate the play level (i.e., *fantasy* and *sociodramatic* play) in which children engaged, the greater in turn the number of observed conflicts; as opposed to less complex play styles (i.e., *functional* and *constructive* play) which would conversely have lead to fewer conflicts. Based on Chen's (1998) results, I expected that conflicts would have occurred often – approximately 80% of target children should have participated in at least one conflict. Conflict rates may also be indicative of SR development since they are practicing socially coordinated interactions. Based on investigations by both Fabes and Eisenberg (1992) and Laursen and Hartup (1989), I maintain that an increase in conflict frequency, although perhaps minimal, reveals the development of children's social competency, mature friendships as ultimately their SR capacity.

More importantly more complex conflict types (such as *play ideas* and *social order* conflicts) as well as advanced CRS (*prosocial* and *mixed*) were expected to have been associated to more sophisticated play styles(i.e., fantasy and sociodramatic play) . Similarly, I expected that advanced conflicts and also CRS would have resulted in more socially involved peer play (i.e.,

associative and *cooperative* play) as compared to basic social peer play (i.e., *parallel* play whereby children have minimal interactions with others). Research has helped to establish that preschoolers quite frequently engage in complex play interactions. Hence, I hypothesized that many of the conflicts, especially the more socially acceptable types would have occurred during advanced play and peer interactions. In applied terms, I expected more sophisticated types of conflicts such as *play ideas* to transpire during *fantasy* and *sociodramatic* play and *associative* and especially *cooperative peer* play (based on research by Chen et al., 2001; and Hay, 1984 for example). By definition, children who were highly self-regulated should have behaved well regardless of teacher supervision. Although, Killen and Turiel (1991) observed children's conflicts as being more aggressive when an adult was present, Chen (1998) found that the adult's presence actually inhibited the incidence of conflicts. I hypothesized that during *physical harm* conflicts, at least one adult would have *observed* or have been *directly involved* in the play (which was expected to have occurred most often).

Overall, protests involving *physical harm, play ideas*, and *social order* were expected to have made up a large bulk of conflicts that occurred during preschooler free-play. It seems certain that the types of conflicts that children deal with directly affect the CRS thatthey utilize. Killen and Turiel (1991) found out that the types of CRS significantly differed in accordance with the source and context of the conflict. The CRS could be conceived of as either children- or teacher-dominated. Research has found teacher CR in the free-play setting to have dominated the overall CRS (Killen & Turiel, 1991); they found that teachers at partially intervened in conflicts involving *physical harm* and *distribution over resources*. As such, I expected a stronger correlation of teacher CR involvement during aggressive and sharing controversies. From my previous observations, teachers in this school did in fact appear to quite frequently, quickly, and perhaps

prematurely intervene during conflicts – thereby not allowing children a chance to utilize the CR tools that they have learned; this finding transpired regardless of the children's age and experience in both social play and CR. On a positive note, Caplan and her colleagues (1991) observed that *prosocial* CRS was the most common child-generated CRS. My (2002) findings supported the above *prosocial* (both behavioral and verbal) CR result which occurred regardless of the conflict type**.** Therefore, I anticipated that the teachers would have resolved many of the conflicts; though when granted the chance, I expected that *prosocial* or at least *mixed* CRS (which could encompass *prosocial* CR) would have prevailed. Killen and Turiel (1991) observed that almost one-quarter of free-play conflicts went unresolved. Therefore, I also expected that roughly one-quarter of conflicts in this study would have remained unresolved where children in large part use the *passive* CRS.

Factors in an environment certainly have a powerful effect on children's behaviors. The context in which the activity occurred was hypothesized as integral to appreciating SR; in fact, SR can only be understood as an inextricable function of the context. From an environmental psychology perspective, the play context was conceived as playing a pivotal role in children's SR. There has not been any research investigating the role of these three play contexts (i.e., *blockroom*, *classroom*, and *playroom*) specifically on SR; however, based on the minimal research that has been done (e.g. Wheeler, 1994), children who had less physical space and freedom for free-play (especially) in the *blockroom* (as the smallest of the three rooms) were expected to have engaged in more conflicts, less sophisticated types of conflicts, and also less acceptable CRS.

1b. **Role of contextual play variables with the types of conflicts and with CRS across time.**

Based on the literature, children's social competency progresses throughout the preschool age period (e.g., Astington, 1993; Parten, 1932; Vygotsky, 1933/1966). Accordingly, across time,

preschoolers' peer activities, conflict issues, and CRS were expected to not only to show increases but also to become more social, complex, and self-regulated as they developed. In applied terms, as preschoolers became older during this period, they were expected to have indulged in more *fantasy* and *sociodramatic* play (assigning characters and roles, and collaboratively developing intricate story plots); continuing off of this theme, *cooperative* and *associative* play can be expected to dominate peer play activity – which is marked by increased levels of intersubjectivity. From a Vygotskian perspective on ZPD, as children developed their CR skills and became "better" (i.e., more cooperative) players, teachers should have ideally lessened their CR input and direct play involvement – thereby granting children more flexibility and freedom during play. As a result, by the third observation, I had hoped that teachers would have allowed children more opportunities to resolve conflicts on their own while also viewing play from a distance more regularly instead of directly playing with them. Advanced play interactions (both play types and peer play levels) were hypothesized to result as a function of sophisticated conflicts, CRS, and time. Thus, as time continued and children became more experienced in conflict and CRS, they were expected to also have engaged in more advanced play. Conversely, simple and less social play was expected to have continued promoted less acceptable conflicts, and also less socially advanced CRS across time.

I suspected that since more social play would have occurred later in the year than earlier (in part due to increased familiarity with peers), social play would in turn have lead to an increased total number of conflicts across observation times. Although a variety of conflict types should have occurred, based on research findings, socially-oriented forms were predicted to have dominated the play across time (Chen et al., 2001; Hay, 1984). All five conflict types were expected to arise throughout the half-year; though as time continued, conflicts over *social order*

and *play ideas* were expected to have increased in frequency while *sharing* issues and *physical harm* should have lessened.

Ideally, child-generated CRS should have prevailed by the third observation given the hypothesis that teachers should have been less directly involved in children's play and conflict, and also allowed them greater CR opportunities. However, as stated in the previous hypothesis (1a), I suspected that teachers would have continued hastily resolving conflicts without providing children many chances (this was the expected CR at least in this preschool program); moreover, this precipitate CR by teachers was hypothesized to have occurred regardless of the observation period – therefore adult generated CRS should have dominated resolutions as a whole. On occasions when teachers allowed children-generated CRS, I expected children to do so in a self-regulated manner: whereby they would have largely exercised *prosocial* and *mixed* strategies without external commands to do so. In turn, I also expected less *hostile* CRS. As the year progressed, I also expected greater occurrences of socially appropriate CRS and fewer unacceptable CRS.

1c. **Role of contextual play variables with the types of conflicts and with CRS between classes.**

Age as a variable per se does not necessarily account for development. However, an increase in age is generally associated with a greater ability to engage in more complex and socially involved play, to become less involved in physical confrontations, and more involved in issues of play activity and social rules, and to resolve conflicts both peacefully and collaboratively (Chen et al., 2001; Laursen & Hartup, 1989; Eisenberg & Garvey, 1981). Since conflicts develop as children mature and gain experience playing socially, I expected not only agreater frequency of conflicts, but moreover, more advanced conflicts in the class with older children. In a sense, older

children therefore should have engaged in more conflict episodes than their younger counterparts.

Surprisingly however, most researchers have found no significant differences in peer conflict frequency as a function of age although occasionally age differences have been acknowledged (e.g., Chen, 1998; Elias & Berk, 2002; Hay, 1984; Killen & Turiel, 1991). Younger preschoolers have been documented as employing more object-oriented conflicts involving issues such as *distribution of resources* and *physical harm* (e.g., pushing, hitting, or biting in order to obtain some goal; Chen, 1998; Killen & Turiel, 1991). In general, older children engage in more socially-oriented conflicts, for example, those involving *play ideas*, *social order* (e.g., classroom rule violations) and *psychological harm* (e.g., teasing) problems (Chen, 1998; Hay, 19984; Dawe, 1934). The results from my pilot study (2002) were varied: preschoolers engaged in both social- and object-oriented conflicts in relatively equal proportion; I found older children having engaged in more conflicts than their younger peers. Based on Hay's (1984) findings that socially-oriented conflicts were positively correlated with an increase in age, I anticipated younger preschoolers, especially early on in the school semester (and data collection) to have engaged in mostly object-oriented conflicts; however, by the end of the data collection, I expected socially-oriented conflicts to have dominated play, especially from the older preschoolers (in Class B). Older children, who had more experience with conflict and CR, should have provided greater rates of advanced CRS (i.e., *prosocial* and *mixed* CRS).

Based on research findings, I also expected the older and more experienced children (from classroom B) to have demonstrated somewhat more advanced play styles (i.e., *fantasy* and *sociodramatic* play during peer *associative* and/or *cooperative* play), conflict types (i.e., *play ideas* and *social order* issues), and CRS (i.e., *prosocial* and *mixed* approaches), than younger children (from classroom A). Overall, 4-year-olds were expected to have exhibited greater SR (as

demonstrated from advanced conflicts and CRS), social play, and play abilities than 3-year-olds. However, I also suspected that both classes would have increased in these capacities across time.

2a. ***Self Control Rating Scale*** **(SCRS) differences between the two classes.**

The SCRS has been statistically validated as a means of SR assessment (see Kendall & Wilcox, 1979) and still used in research on SR (e.g., Elias & Berk, 2002; Kaplan, 1985; Robin, Fischel, & Brown, 1984; Rohrbeck, Azar, & Wagner, 1991). Based on research findings (e.g., Kopp, 1987), younger children should generally be less self-regulated than older ones. Accordingly, younger children (i.e. those from Class A) were expected to have had higher levels of SC as compared to the older ones (i.e. those from Class B) – thus children from Class B should have been perceived as more self-controlled than children from children from Class A.

Teachers were given a survey at two points in the semester (in October and February) to evaluate individual children's behavior. There were therefore two teachers who separately answered the SCRS questions twice; the two teachers were assumed to be similarly fair and free from bias. Given that with time (almost six months), teachers had more exposure to children's play, conflict, and CRS, I expected SCRS 2 scores to actually be a more representative evaluation of their SR than score 1 and accordingly used score 2 for the analyses. With additional time, children should have had more opportunities to learn and apply properschool behaviors and to appropriately engage in play with others; hence, I expected that both classes would have achieved a lower score on the SCRS – indicating greater overall SR.

2b. **Role of other variables on** ***Self Control Rating Scale*** **results.**

Even though the SCRS measures individual scores, the perception of SC is shaped from group interactions (i.e., from social play, conflict, and CR). Another assumption made is that SCRS can indeed be appropriately applied as a means of SR evaluation. Although the SCRS

measures individual behavior as judged by the teacher and the SR indices that I used (i.e., play complexity, peer play quality, conflict type, and CRS) are based on group activity, I hypothesized that these SR measures would have been associated with the SCRS scores. In other words, I thought that since both sets of SR indices would have assessed the same functions and thus could have used them to help explain SCRS results.

As you may recall from hypothesis 1a, those children who often engaged in social and complex play were hypothesized to consequently have engaged in more conflicts than those who generally played alone and spent most of their play time carrying out simple activities. Those preschoolers who frequently demonstrated advanced peer play (e.g. *associative* and *cooperative* play), were liable to get into more conflicts but should have been recognized by their teacher as more controlled and less impulsive given the circumstances – which in turn would have revealed a lower score on the SCRS. Although teachers should have deciphered between acceptable conflicts and CRS, I predicted that teachers would have judged those children who were more conflictual (regardless of socially approved conflict types), as more likely to have received higher scores on the SCRS (thus recognized as simply less self-controlled). SCRS scores (especially at time 2) thus should have strongly correlated to the total number of conflicts that children were involved in. Conceptually, teachers' perceptions should have been more accurate by the second set of SCRS evaluation than bythe first one given the greater time of rapport which could have been developed with several months of daily interactions.

Furthermore, children who engaged in more advanced and socially interactive play were also hypothesized as more likely to have acted upon more acceptable conflicts and CRS. It was assumed that measuring conflict types and CRS could be effectively used to understand SR (see hypothesis 1a). As such, I expected that those children who engaged in advanced types of both

conflict and CRS would also be perceived by the teacher on the SCRS 2 as highly self-controlled. In correspondence, children who were more likely to have utilized more complex play levels and group play interactions, sophisticated conflicts, and more socially acceptable CRS should have recognized these children as more self-controlled than those who engaged in *functional* and *parallel* play. Moreover, I anticipated that these measures would have been highly correlated given that they were theoretically assessing the same phenomena.

Additionally, age was believed to reveal differences in SR. Older children have been found to demonstrate more self-regulated behavior and were expected to have been judged so by their teachers. A more self-controlled perception of all children was expected for SCRS 2 given the amount of opportunity that children had to practice self-control and impulse control during play, conflict, and CR episodes. Sex differences were expected to be minimal (if any) since research findings are ambiguous. From an environmental psychology perspective, the play context was conceived as playing a pivotal role in children's SR. There has not been any research investigating the role of these three play contexts (i.e., blockroom, classroom, and playroom) specifically on SR; however, based on the minimal research that has been done (e.g. Wheeler, 1994), children who had less physical space and freedom for free-play (especially) in the *blockroom* (as the smallest of the three rooms) should have engaged in more conflicts, which would have positively correlated to SCRS 2 scores. As such, I expected that those children who received higher SCRS 2 scores would have entertained more conflicts in the *blockroom* as compared to the other two rooms (which were both larger). If the size of the room does matter, then there should have been fewer conflicts in the *playroom* given the greater space to run around and play. While teachers were in the playroom, they were much less apt to directly play with the children; less teacher involvement was speculated from research to have been associated with both fewer *physical harm* conflicts and *hostile* CRS.

CHAPTER THREE
Methodology

"The search for method becomes one of the most important problems of the entire enterprise of understanding the uniquely human forms of psychological activity. In this case, the method is simultaneously prerequisite and product, the tool and the result of the study" Vygotsky, 1978, p. 65.

3.1 Participants

The participants included nineteen two-, three-, and four-year-olds from *The Child Development & Learning Center* at the CUNY Graduate Center. There were a total of fourteen girls and five boys in the study. All but four of the children at the preschool participated in the study (83% consent rate). Obtaining consent proved time consuming and difficult, requiring not only "selling" the study, but myself as worthy researcher and as a past teacher at the preschool as well. All of children who were granted consent participated in the research. Note that there is a "potential bias of conducting research with children who have obtained permission to participate in studies. Nonparticipant children were described by their peers as being less socially accepted, more aggressive and less academically competent" (Noll, Zeller, Vannatta, Bukowski, & Davies, cf. Rinaldi, 2002, p. 89). In other words, children that I did not have access to (due to the lack of consent) may be more valuable for understanding SR than those that were accessible.

The study included 19 total children from both classrooms (the overall mean age = 3.896, SD = 0.74). The two classrooms were established well before this research was launched; they were comprised of a two- and three-year-old classroom, I have referred to them as 'Class A' for convenience; and the three- and four-year-old classroom, has been referred to as 'Class B.' In this investigation, the average age for a child in Class A was 3.16 (SD = 0.47, range = 2.48 to 3.89) and included, 3 two-year-olds: all girls; and 4 three-year-olds: 2 boys and 2 girls; the average age for a

child in Class B was 4.34 (SD = 0.46, range = 3.56 to 5.09) and included 4, three -year-olds: all girls; and 8, four-year-olds: 3 boys and 5 girls. Eighteen children were observed three times; the one case where the child was observed twice occurred as a result of emigration before the third observation.

The preschool director, Linda Perotta, and her troupe of ten (part-time and full-time) teachers generously offered full cooperation by granting me complete access to the center. Consent was gathered from all of the participating parents. September 2004 began the new wave of entering preschoolers. I began forming rapport with the children by intermittently sitting in and simply observing activities from both classrooms during the month of September and also meeting parents and telling them about my research project. Note that a prerequisite for enrollment into the preschool (at the CUNY Graduate Center) is that a parent must be either a student or an employee of the institution. This may be an important consideration since findings from this sample may not be fully representative of allNew York City preschoolers due to its homogeneity. This homogeneous sample should however work to my advantage by allowing for stronger results of group activities for this population. In other words, although the generalizations may suffer, the conclusions that I will draw from the results will be more powerful within such a setting.

3.2 The Child Development and Learning Center

As part of its philosophy, the center is dedicated to affording a high quality, developmentally appropriate early childhood education. One of the center's key objectives is to create an environment of trust in which each child is appreciated as an individual. Free-play and exploration are recognized as major elements of learning and development. The child is an active member in the learning process via play. The classrooms are divided into well-defined work areas, which include blocks, dramatic play, art, manipulatives, books, and a meeting area. Curriculum

themes are developed from the interests of the children and urban issues (due to the Center's location in midtown Manhattan). Emphasis is on the interaction with peers, parents, and classroom materials. The teachers work collaboratively with parents and peers to resolve major childhood issues including parental separation, SR, sibling rivalry, and toilet training. Routines are recognized as essential for encouraging feelings of security in the young children and sustaining opportunities for their interactions; this belief is especially true for younger children.

The schedule for Class A was as follows: classroom free-play (9 to 10:30); playroom free-play (11 to 12); lunch (12 to 1); classroom free-play (2:30 to 4); and playroom free-play (4:30 to 5). Another philosophy of the school is that children should be separated by age thereby allowing for (relatively) same age play – hence, there are two age-segregated classrooms. There are limited periods of interaction between the two classrooms. Both classrooms and the playroom offered the children (within each class) opportunities to interact with one another during free-play –allowing for cognitive, social, and emotional interaction (i.e., Classes A and B).

The typical schedule for the Class B was similar to Class A and was as follows: children engaged in free-play when they first arrived to the preschool (range from 9 to 11 am); all individuals (including the teachers) helped with clean-up; snack time; circle time —songs and book reading; free-play (usually indoors, approximately from 12 to 12:45 pm); Lunch (about 30 minutes); quiet activities (either reading and/ or drawing); nap time; snack time and quiet activities; free-play (2:15 to 3:30 pm); clean-up and snack; playroom free-play (4 to 5); and the center closed at (5:30 p.m.).

Most of the time, children during free-play were allowed to play with any toy and person as long as it did not lead to much unruliness and/or resources (for example, if a child did not want to share a popular toy, and it led another child to tears and perhaps aggression, restrictions were set).

This imposed classroom rule could have potentially limited my results; however, this rule was rarely an issue in this particular preschool. Nonetheless, such a rule is in fact part of dealing with naturalistic observation issues. This rule would have been accounted for as part of the *distribution of resources* conflict issues (see Appendix C) if a peer protested the lack of sharing.

According to the *2000-2001 Occupational Outlook Handbook*, to ensure that children receive proper supervision in the classroom, State regulations require certain ratios of teachers to children; the ratio varies with the age of the children. Child development experts generally recommend that a single caregiver be responsible for no more ten preschool-age children (between two to five-years-of-age). Cotton and Conklin (1989) were somewhat more proportionally generous; they concurred that the student-teacher ratio should not be greater than 16:1, though preferred a 10:1 ratio for preschoolers. At the Graduate Center's preschool, there was at least one teacher (usually two and sometimes three teachers) constantly present with eight to ten children – this is a good quality ratio.

3.3 Procedure

"You can discover more about a person in an hour of play, than in a year of conversation" Plato.

To more fully capture children's self-regulatory abilities, a number of theoretical and methodological issues had to be addressed. What is the operational definition and what are the indices of SR? How does one assess a complex behavior such as SR? Moreover, how does one make sense of this development during authentic, dynamic social activity (such as play)? And at the same time, how does one capture 'the moment' of SR during play while maintaining research composure and vigor? Multiple complimentary methods are necessary to understand a more comprehensive account of the role that children's conflict and CRS during various types of play and social interactions have on the SR. The observation approach is perhaps the "oldest" method

of understanding human behavior, and arguably, the most suitable for studying the dynamics of SR. Although lacking in scientific vigor, Aristotle proposed the earliest approach to the observation method. Darwin in the 19th century also made use of the observations for understanding children's adaptive behaviors; though like many of his predecessors, lacked qualitative detail and objectivity which in turn made validation unrealistic.

Two techniques were utilized for this study, including 1) longitudinal, naturalistic, and repeated observations of preschoolers' activity during classroom peer free-play and, 2) a repeated child SC- Likert based scaled questionnaire. According to Lett and Kamphaus (1992), a Likert scaled design completed by either a parent or a teacher is the most widespread approach for behavioral assessment (cf. Kenny, Ninness, Rumph, Bradfield, & Cost, 2002). However, Kenny and her colleagues (2002) stated that "the use of rating scales, independent of direct observations of student behavior, may not provide an adequately reliable measure of a student's problem behavior" (p. 42). Several additional instruments which were used in the study are discussed below.

One major implication of Vygotsky's research is the unit of analysis for psychological investigation should be the adult child and/or child-child activity rather than the individual child. With slight modification, I accordingly used the *children-in-conflict activity-in-context* as the central unit of study for this investigation. The reason for utilizing conflict as the unit-of-analysis was that it allowed us to focus on the actual activity. Many of the studies reviewed here which investigated social activity (e.g., Krafft & Berk, 1998; Elias & Berk, 2002), have attempted to utilize a Vygotskian / CHAT approach; however, these studies have unfortunately not fully captured the inherent nucleus of group activity. In particular, such research has only studied the child interacting with others and within the activity. This investigation is the first one that applies

a Vygotskian approach towards researching group SR behavior during activity – thus more fully appreciating children's activity as a whole and not separate from one another and other contextual factors. An examination of social play in "real" child settings yields a finer understanding of SR dynamics than one investigating solitary play in a laboratory for example; in part, because conflict is defined as a social phenomenon; there is greater appreciation of SR as a social construct when it is observed in naturalistic setting given that SR arises out of social interaction. Vygotsky's method aimed to study 'development in motion' – which is the essence of activity. I attempted to capture a dynamic moment in children's lives, analyze it, and then interpret it.

Pellegrini (1996) contended that there is a need for quality descriptions of children in settings where they spend significant amounts of their time (for example, the school). The preschool classroom affords unique opportunities for assessing the quality of young children's social adaptation (Sroufe & Rutter, 1984). The preschool is one of a few venues in which children should develop and negotiate relationships with peers and teachers and learn to abide by classroom rules while sustaining well-regulated emotional states in order to conform to expectations within a context that has both limited quantity and quality of resources (Miller & Olson, 2000).

Previous research indicated that by six weeks into preschool, children should be fully adjusted to a new setting (e.g., Chen et al., 2001; Elias & Berk, 2002; Killen & Turiel, 1991; Roopnarnine, 1985). This extra delay in observation better ensures that peer-to-peer and peer-teacher interactions are less prone to reactivity – making it in fact more authentic and representative of their dynamic relationship. Based on this finding, videotaping began in mid October of 2004 (children's schooling began in the first week of September). In early December, the second wave of videotaping started – allowing opportunity for greater peer- and teacher interaction and hopefully, development of SR. The series finale (i.e., the last wave of videotaping)

took place early to mid February. This method allowed for close analysis while concurrently allotting opportunity for internalization and practice of tools, which ultimately should have fostered the development of SR. Coding and analysis of data occurred throughout the entire period from the start of the taping until March 2005.

Each target child was observed for a total of one hour during free-play. Children were randomly videotaped on three separate twenty-minute periods (for total of one hour) during the morning and/or the afternoon free-play periods. However, before the start of the final observations, I was told by the director of the school that there would be no more videotaping in the afternoon sessions. Ms. Perotta stated that new rule was imposed because the main teacher in Class B only worked during the morning shift and if videotaping was to occur without her presence, it might make the rest of the day more chaotic for both the teachers and children – this rule was adhered to. Four to five target children were videotaped per day yielding one observation of all 19 participants within a few days (encompassing a period of two weeks). As indicated above, one child (from Class B) was not included in the last observation because she left the country before the start of final recording – her parents were visiting scholars during the fall 2004 semester. Collectively, this study yielded a total of approximately 18.4 hours of sampled naturalistic observations of target preschoolers during group free-play. As the primary investigator, I was the sole recorder of the classroom observations.

With the aid of a small, handheld digital video-camera (*Panasonic Mini DV* - PV-DV103D with 700 x Digital Zoom), I was able to freely and inconspicuously maneuver within the preschool setting. Based on the work and standard established by Laursen and Hartup (1989), target children were observed at relatively close distances (within range of approximately 1-25 ft., and with the aid of digital zooming), as is the case for most current research in this field. Again, children had

the opportunity to interact with any children or adults during free-play, and without many restrictions.

3.4 Measures

The study entailed three coding instruments which allowed for analysis of SR: conflict types, CRS, and the SCRS: (1) the types of conflicts that children engage in with other peers are essential to the study. 'Conflict types' is the first tool that I used in measuring the degree of SR displayed by children in the episodes. The start of a conflict marks an episode's official beginning. For the sake of coherence and comparability (i.e. standardization), I integrated a 'conflict issues' category (see Appendix C), taken from Chen (1998). The current 'conflict issues' were equivalent to those that I have identified for my pilot study (see Polnariev, 2002; also see Appendix C); though, her (1998) categories are more refined and have well-established reliability scores; thus capitalizing on Chen's conflict scheme permitted me greater comparative consistency across research. There are five types of conflictsin which children may be involved ; these conflicts were arranged on a nominal scale; attempts were made to arrange 'conflict' types on a continuum scale but have yet to be empirically refined. In other words, conflicts would at some point, based and supported by theory be arranged on continuous scale just as the contextual play types were ordered. Nonetheless, some conflict types were recognized as more acceptable than others. Whether or not a specific child initiated the conflict is not crucial for understanding group SR since this study is focused on the conflict episode and not the individual child. Based on previous research methodology, the end of a conflict episode was signaled by either a clear resolution (e.g., Eisenberg & Garvey, 1981; Genishi & DiPaolo, 1982), or a delay in CR for over ten seconds in which neither party continues to pursue the issue for greater than that time limit (Russon, Waite, & Rochester, 1990, cf. Chen, 1998). I conformed to this unofficial "ten second rule" for the sake of

standardization within this field. Although I struggled with coming up with a "better" resolve. I have not come across an improved standard of judging conflict ending. Note however, that conflicts can and sometimes do continue beyond the ten-second pause. In addition, the idea of termination of CR may be a misnomer since they are not always "final." Children often replay or continue the same (or similar) conflicts at a later point even though they were technically "resolved." In fact, while examining "contradicting routines", Boggs (1978) stated that "once a dispute has begun, it is rarely resolved to the mutual satisfaction of the participants" (p. 333).

(2) After the conflict episode was defined, the process of resolution was analyzed. I applied a revised version of the *Conflict Resolution Strategies* coding scheme that I developed for my second year research project (2002; see Appendix B1). This observational coding scheme assisted me in understanding how children controlled and regulated their behaviors by allowingfor interpretation of resolution techniques that they employed during free-play conflicts with peers. Thus, the CRS were used as a qualitative index of SR. The ten (overall) strategies were set up on a nominal scale. In order to analyze these conflict exchanges which occurred throughout the entire episode, the strategies needed to be somehow clustered rendering it statistically manageable. Grouping the CRS codes allowed us to coherently and reliably interpret the findings as it related to conflict types and contextual play variables (see table 12). The dominant CRS was determined by clustering the strategies into their prime function (regardless of whether they were verbal or behavioral). For example, a *prosocial* verbal and/or a *prosocial* behavioral action were condensed as one *prosocial* strategy (i.e. the dominant CRS; see Appendices B1 & B2). Although this approach allowed for greater reliability of the coding system and a more manageable way of dealing with the analyses, we may lose out on vital information by condensing these categories. As a result, six central modes of dealing with conflicts were established; five of the dominant CRS

were child-generated, and one was teacher-generated. Hence, only the dominant CRS was taken into account and analyzed as they were associated to other variables. Children who resolved conflicts more *prosocially* for example, were deemed more self-regulated than children who used *hostile* CRS, based on only that particular conflict episode. The dominant CRS were used as indices of SR. However, much more information is needed to make a judgment about SR.

(3) The head teacher from both classes independently completed the *Self-Control Scale* (SCRS) for each child in their class (regardless of the child's participation in the study). The battery was completed twice: at the start of the data collection (i.e. SCRS 1), and once after all of the children have been observed at the end of data collection (i.e. SCRS 2). Teachers returned the survey within two weeks. None of participants (including children, parents, and teachers) were explicitly privy to which subjects were observed, the research questions, nor the hypotheses.

Phillip Kendall and Lance Wilcox developed the SC battery in the late 1970's. The SCRS is a psychometric tool that provides a generalized measure of children's SC and impulsivity. Kendall and Wilcox (1979) used a cognitive-behavioral definition of SC; the scale includes factors such as deliberation, problem solving, and the ability to execute appropriate behavior. The 33 questions used in the SC battery are behaviorally anchored items that include impatience, breaking things, rule-breaking, and distraction (see Appendix A, for all survey questions used). There are 10 SC questions (e.g., 'Does the child stick to what he or she is doing until he or she is finished with it?'). There are 13 questions indicative of impulsivity (e.g., Does the child grab for the belongings of others?). There also are 10 questions that would denote both SC and/or impulsivity (e.g., 'Does the child interrupt inappropriately in conversations with peers, or wait his/her turn to speak?'). The teacher completing this questionnaire rated each child on a 7- point Likert scale, 1- indicating maximum SC (i.e., always), and 7- indicating maximum impulsivity (i.e., never). The

scores range from 33 to 231. Therefore, the lower the score, the lower the impulsivity and SC perception and evaluation of the child. It should have taken 10 to15 minutes to complete the survey. Teachers rated children according to the items listed on the scale by writing the "appropriate" number on the left of the each question. Teachers were asked to rate children's behavior during the last 30 days. Although memory problems may have factored into the results, I kept this time frame in accordance to the way that the scale was developed. I think that one month gave the teachers a fair and adequate time structure to evaluate children's behaviors.

Conflicts and CRS were both evaluated during peer free-play. In addition to the above SR instruments, a play instrument was applied (Appendix D). Krafft and Berk (1998) investigated the role of make-believe play on preschoolers SR. They incorporated a coding scheme based on both Parten's (1932), and Smilansky's (1968) research which assessed the types of preschooler play (Appendix D1); peer play activity (Appendix D2; also from Parten, 1932); and a system to account for the adult or teacher role in play (Appendix D3; based on Berk & Garvin, 1984). These three play measures were organized on a continuum scale (i.e. an ordinal scale).

Children along with the teachers choose which room was going to be used during the particular time of day. Occasionally, free-play occurred in more than one room at a time. Only those play events that associated with (social) conflict were evaluated – thus some level of play interaction with others was a prerequisite for observation. Target children were picked at random though based on their availability. The following information was gathered for all 19 target children's 67 total conflict episodes: play style, peer play quality, adult (i.e. teacher) play participation, conflict issue, and CRS. In addition, demographic data such as sex, culture, number of siblings, teachers involved in play and CR, and observation time (morning or afternoon session) were collected with the intention for analysis. Conflict episodes were watched repeatedly

(eventually becoming reruns). Observations occurred during both parts of the day (see Appendix F); however, in large part, many of the episodes were recorded during the morning shift because of the rule permitting for 'morning only' observations took effect by time 3. Culture was thought of as a possible covariate of behavior. Five 'culture types' were represented at the preschool: *White, European, Spanish, Asian,* and *other / Mix* (see Appendix G). The sex of the participants along with the number of siblings that children had was documented. The quantity and specific teachers that were involved in the play episode were noted along with which teachers were involved in CR, if any. The exact ages of the children were recorded; age obviously varied throughout the observations and was accounted for.

In a discussion of the observation technique and "expectancy effects" during Science education, McComas and Moore (2001) provided a brilliant précis:

> Norris (1985) correctly states that observation is fundamental in scientific investigation and discovery, but warns that it is a misconception that observation is "the simplest of all intellectual activities of scientists" (p. 817). To the contrary, the act of observing is far from uncomplicated, automatic or trivial. All observations are directed by advance notions of what is likely to be observed, although the observer typically does not appreciate the role played by this advance expectation. Observation, therefore, is an active rather than passive process… [Furthermore,] observations … mark the beginning points of reasoning in the area of knowledge in question, the basis upon which other knowledge rests" (Norris, 1985, p. 824); observation is more complex than the simple act of looking at or measuring something. Rather, observation depends on inferential procedures (Duschl 1985; Norris, 1985;" cf. McComas & Moore, 2001, pp. 246-247).

3.5 Advantages of Naturalistic Observations

Conflicts occur frequently in the form of arguments or struggles over objects (Chung & Asher, 1996). Peer conflicts often take place during free-play in the classroom making classroom naturalistic observations an ideal method for capturing both conflict and CR. Observations in classrooms have been used to analyze preschool conflicts (Dawe, 1934; Laursen & Hartup, 1989). Vygotsky held that researchers should "collect rich data over a sufficient period of time in naturalistic settings to capture the full spectrum of the development of a function, then [be] interpreted in terms of theory …[He] preferred observational studies to experimental designs" (cf. Moran & John-Steiner, 2003, p. 8). Pepler and Craig (1995) discussed the numerous methodological advantages of naturalistic observations relative to previously widespread use of adult-, self-, and/or peer-reports, and the traditional laboratory paradigms. For example, Pepler and Craig (1995) have insisted upon the importance of observing children in an appropriate ecological context; such real-life evaluations should increase external validity. Because I employed naturalistic observations in a "real" and natural child setting, the behaviors observed were more typical and genuine as compared to using the laboratory setting which may lead to observed atypical behavior. Teachers and researchers alike have acknowledged that laboratory observations have neither sufficiently nor efficiently improved our understanding of children's free-play (Nicolopoulou, 1993).

Naturalistic observations offer many advantages towards discovering children's development. This method exerts minimal constraint on children's interaction from which the findings can be generalized with more conviction. Also, it allows an observer an exclusive opportunity to gain access to a world not typically privy to adults (Pepler & Craig, 1995). Naturalistic observations allow one to expose exceptionally valuable information such as issues of

children's conflict responses that are not ordinarily revealed by typical methods (e.g., interviews, lab observations). The issue of reactivity is greatly reduced by observing children via video recordings. Preschoolers, after becoming familiar with the video camera and the camera-person, typically become indifferent to the recording of their behavior. The technology of the zooming option on the video camera affords one to observe a child at a distance thereby being less intrusive. The low reactivity of the study adds to the higher internal validity. Consequently, the use of remote audiovisual observational approach allows consecutive event sampling that may be studied according to the frequency, the sequence, and the intensity of behaviors initiated by the target children (Pepler & Craig, 1995).

Audiovisual observations yield the opportunity to review tapes thus increasing the ability to code the behavior with greater intra- and inter-reliability. Viewing tapes repeatedly allows one to more adequately grasp the dynamics of children's behavior more adequately. However, it may also be the case that watching repeated footage of a particular action leads to varied appreciation of every episode. In other words, although repeated video viewing probably leads to greater accuracy, it may also allow the researcher time to reveal different perspectives upon each viewing. Naturalistic observations through audiovisual recordings allow one to witness subtle forms of conflict and their response(s) – covert conflict is usually the case.

3.6 Limitations of Naturalistic Observations

There are drawbacks to every method. The major impediment to the audiovisual procedure is the audio aspect itself where occasionally meaningful conversations become difficult to distinguish. The issue of inaudibility becomes particularly problematic with the study of SRwhere children often communicate via speech – after all, many of the CRS areverbal. Without controlling elements within the environment, including the number of children interacting with the

target children, the noise levels can and often have blurred children's verbal communications – data can be lost without good quality technology.

The naturalistic observation inherently sacrifices experimental control in order to yield higher ecological validity and generalizability. Another related issue stems from the fact that there is an age curb with videotaping. Presumably, teenagers for example are typically more cognizant of the videotaping and the researchers' presence than are preschoolers; this in turn may lead to more reactivity. Reactivity probably skewed the authenticity of the data. Finally, the instrument used, namely the video-camera, has certain inherent limitations. There is a limited range of possible physical observation. It was difficult to constantly maintain the target children within the same frame – thereby capturing the entire conflict episode even with a wireless and non-stationary video-camera. This dilemma is especially true when children engage in free-play. Normally, during playroom free-play children are constantly on the move, hustling and bustling, bumping into people and things, screaming and yelling – a seemingly chaotic state-of-affairs, understood only when the slow motion, pause, and stop buttons are used on the VCR and/or DVD machine. Ideally, several cameras could be used to ensure full range of observation – enabling the researcher to capture the full scope of action – a full production.

3.7 Reliabilities

The SCRS has a very high internal reliability (or consistency) – Cronbach's alpha of 0.98 (cf. Elias & Berk, 2002). Although the inter-rater reliability of SCRS was not assessed nor addressed by Kendall and Wilcox, it is certainly essential. Aron, Aron, and Coups (2005) indicated that "a good measure should have a Cronbach's alpha score of at least .6 or .7 and preferably closer to .9" (p. 383). The test-retest reliability for SCRS over a 3- to 4- week period is 0.84 (Elias & Berk, 2002). Norms for the SCRS were established by Kendall and Wilcox on a

sample of 110 middle-SES Caucasian children attending grades 3 through 6 (ages nine to twelve, respectively). Although the original study normed the rating scale for older children, the questions were adapted for preschoolers – though, because of lack of standardization of questions for this age group, the results will be interpreted without great statistical confidence. In addition, the mean Cohen's Kappa revealed a reliability of 0.92 and 0.83 for the determination of beginnings and endings of social episodes, respectively (Krafft & Berk, 1998).

Before beginning observations, two independently trained observers, utilizing three coding schemes (i.e., the *Conflict*, *CRS* and the *Play* behavior checklist) observed video data from my second year project. Half of the participants (original n = 12) from the pilot study (2002) were randomly analyzed by the two observers. Kappa's were used to compute the reliability of measurement tools for the project (i.e., the two observation coding schemes; see Cohen, 1960). The intercoder reliability for those children observed using the *Conflict* coding scheme (see Appendix C) ranged from 0.87 to 0.97, with a median of 0.92 which is slightly lower than Chen's (1998) results which yielded a Kappa of 0.96; the *CRS* coding scheme intercoder reliability ranged from 0.79 to 0.84, with a median of 0.82; while the intercoder reliability for those children observed using the *Contextual Play* variables checklist was slightly higher, overall ranging from 0.81 to 0.90, with a median of 0.86 (which is the same intercoder agreement that Krafft and Berk, 1998 attained). Relatively high reliability was achieved with observations scales.

CHAPTER FOUR
Context of SR: A Penetrating Gaze

Before I discuss the quantitative results, several qualitative examples of conflict and CRS during free-play provides a rich and illustrative account of SR. Almost half of the observed conflict episodes were transcribed below. These examples were chosen in part to provide a variety of conflict, CRS, and play scenarios; in addition, these episodes were chosen to illustrate some of the same groups involved across time to see continuity and discontinuity of action. Child and teacher id numbers were used to keep track of the individuals involved in group activity while maintaining anonymity; though for the purposes of coding and theory, the activity (i.e. *children-in-conflict activity-in-context*) was assessed and not the individual. Some details of the situation, along with the contextual play variables were provided. The information in the parentheses details the behavior; while the non-parentheses information details the explicit statements made during the conflict. The transcribed episodes are presented along with the bracketed dominant CRS codes used to understand SR below:

Class A, Observation 1:

- **Conflict 1** - On October 19, 2004, at 11:48 in the *playroom*, child # 2 and # 3 argued over *play ideas* (specifically child # 3 grabs horsy saddle away from child # 2 so that he can be the cowboy) during *fantasy* play and *associative* peer play. The dominant CRS was *prosocial*. The teacher was *watching*. There were four children in the playroom along with two teachers.

  child # 3: (hands her back the saddle) [*prosocial*]

  child # 2: (questions provocation) [*prosocial*]

  child # 3: (tells her that she) can be the cow girl [*prosocial*]

  teacher # 4: (resolves the problem & tells them what their roles will be) [*adult* CRS]

- **Conflict 2** - Five minutes later, child # 2 pushes child # 3 off of the horsy ride. Hence conflict now is over *physical harm* during *fantasy* and *associative* play. The teacher was *uninvolved* at this point. No dominant CRS existed and thus the episode was credited as *mixed*.

  child # 3: (nicely questioned) why she pushed him [*prosocial*]

  child # 2: (he did not say or do anything) [*passive*]

- **Conflict 3** - On October 26, 2004, at 11:40 in the *playroom*, child # 5 and child # 2 argued over doll possession that both children desired while engaging in *functional* play, *parallel* peer play, and the teacher was *watching*. The conflict was clearly over *distribution of resources*. Neither child spoke English fluently. Since no one CRS style dominated, it was judged as*mixed* CRS. There were five children and two teachers in the *playroom*.

  teacher # 2: (intervenes immediately by separating the children) [*adult* CR$

  child # 5: (grabs the doll from child # 2 by overpowering her) [*hostile*]

  child # 2: (does nothing but watch) [*passive*]

- **Conflict 4** - A couple of minutes later, at 11:42 in the *playroom*, child # 5 and child # 2 once again argued over doll possession during *functional* play, *parallel* peer play, and the teacher was *watching*. Somehow child #2 gains control of the doll again. The conflict was clearly over *distribution over resources*. This conflict was counted as a separate from the previous episode, though was certainly influential in this one. The events blew-up and extinguished quickly. Again, there was no one dominant CR style, hence it was *mixed*. There were five children and two teachers in the *playroom*.

  child # 2: (allows the other child to have the toy) [*prosocial*]

child # 5: (snatches the doll away from her) [*hostile*]

child # 5: (asks for teacher) help [*seek assistance*]

Class A, Observation 2:

- **Conflict 1** – On December 1st, 2004, at 3:59, child # 7 seemingly unintentionally knocked down child # 5's block construction in the *blockroom*. Conflict was over *social order* during *constructive* play and *associative* peer play. The teacher happened to have stepped out at that moment and was *uninvolved*. Four children were in the room.

  child # 5: Heyyy [*prosocial*]

  child # 7: I'm sorry [*prosocial*]

- **Conflict 2** - On December 1st, 2004, at 3:35, soon after snacks were given in the classroom, children # 5 and # 7 (from Class A) were engaging in *constructive* and *parallel* play as one of the two teachers was *watching*. Five children were in the room. **"**This old man" song was playing in the background. A conflict over *distribution of resources* ensued as child id # 3 asked for some clay, but child id # 7 refused. These children used several CRS including *prosocial*, *seeking help*, *hostile*, and *passive*, coupled with *adult intervention*. The CRS was the key unit-of-analysis (and not the child who used the strategy). There was no clear strategy used to resolve the issue over the play-doh; hence, the overall dominant CRS was *mixed*. These children often played together, and continued to do so after this conflict. Although there was minor hostility, no emotions, language, or behavior got unruly; the overall impression of the episode was that it was well self-regulated, though moderated by a teacher. The teacher did a great job of getting both stories and leting both children know what should have been said and consequently helped resolve the issue. This example was one of only a few to have

escalated to this degree and required many CRS turns –this was an atypical conflict scenario.

*Play-doh strikes again (this episode is attached on the accompanying DVD)

child # 7: (she protests and pulls away as he tries to take back the clay) Nooo! Maybe later, later, later [*prosocial*]

child # 7: later (in loud, whiny and frustrated voice as child # 3 continues to take back his clay) [*hostile*]

child # 3: (he proceeds to grab clay but in a friendly way) another one [*prosocial*]

child # 7: laterrrr laterrrr ehhh ehhh [*hostile*]

teacher # 11: (from a distance teacher asks) what happened? [*adult* CR]

child # 3: (he tried to explain to the teacher that he wants) another one [*prosocial*]

child # 3: (goes further to grab the clay when the other child clearly protested) [*hostile*]

child # 7: no maybe laterrrr (and cries when the other child takes the clay away) [*hostile*] grabs clay took the clay) [*hostile*]

child # 3: (crowds child # 7 into a corner and aggressively grabs clay took the clay) [*hostile*]

child # 3: (then he tries to leave as teacher id # 11 comes in to resolve the conflict) [*passive*]

child # 7: He broke my heart (child was sad and spoke loudly enough for the teacher to hear) [*seek help*]

teacher # 11: (she comes over to find out what happened) You hurt her feelings, let's go to fix it [*adult* CRS]

teacher # 11: (takes child # 3 by the arms and asks) do you need this play doh? Maybe you can ask her nicely? (and waits for the child to ask nicely) [*adult* CRS]

child # 3: I need this play-doh [*prosocial*]

teacher # 11: what? (it was difficult understanding and hearing him [*adult* CRS]

child # 3: I need play-doh [*prosocial*]

teacher # 11: I know you need it, but you need to ask child id # 7 [*adult* CRS]

child # 3: I need big play-doh (and demonstrates big with his hands) [*prosocial*]

teacher # 11: you need to ask child # 7, okay can you ask her? [*adult* CRS]

child# 3: (waits 3 seconds, thinks it over, gets frustrated and leaves play area) [*passive*]

child # 3: (he tells teacher #11 after she followed him that) and this my play-doh [*prosocial*]

teacher # 11: you were using it? [*adult* CRS]

child # 3: (nods) yeah [*prosocial*]

teacher # 11: and child # 7 took it from you or you took it from child # 7? [*adult* CRS]

child # 3: child # 7 from me [*prosocial*]

teacher # 11: okay, child # 7 next time you need to ask okay [*adult* CRS]

- **Conflict 3 -** On December 7, 2004, at 11:28, children # 5 pushed and pinched child # 6 as they came down the ramp in the *playroom*. It violated the rule of keeping hand to one-self; hence it was a *social order* conflict. They were engaged in *functional* play and *parallel* peer play. Three teachers were in the room *observing* the play and the five children in the *playroom*.

  teacher # 4: (she jumps in and told them to) use their words, it's not nice [*adult* CRS]

  child # 5: (gets angry and cries) [*hostile*]

- **Conflict 4 -** On December 7, 2004, at 11:55, child # 5 blocked child # 3 from gaining access to a play station by pushing him away. It was rated as a *social order* violation during *fantasy* play and *parallel* peer play. Two teachers were watching the play and the six children in the room at the time. This was a more difficult episode to categorize. Although *physical harm* was used, the conflict was initiated by the breaking of the class rule for access to play – that's the child demonstrated opposition; as such I coded this as a *social order* conflict. The physical harm was used in adjunct to the rule violation. I did not however obtain reliability on this conflict scenario.

child # 3: (assertively told the other child to) Stop! [*prosocial*]

teacher # 4: we need to talk [*adult* CRS]

child # 5: (does not want to talk or come to the teacher even she threatened to come herself and get him, but he did not move) [*passive*]

teacher # 4: you can't hit and get hit; pushing is NOT safe, let's stop, ok? [*adult* CRS]

- **Conflict 5 -** On December 8, 2004, at 4:35, children # 6 grabbed toy cones previously laid out by child # 5 in the *playroom*. The play was *fantasy* though *parallel*. Three teachers were watching the play and the three children in the room. The result was a *mixed* CRS.

  child # 5: (grabbed child # 6's shirt and pulled her back on the floor she tried to run off with the cones) [*hostile*]

  teacher # 11: (she separated the children and explained that he) could not do that [*adult* CRS]

  child 5: (nicely and assertively said) No [*prosocial*]

Class A, Observation 3:

- **Conflict 1** – On February 8, 2005, at 11:34, Child # 7 hit child # 5 in the *playroom*. This was clearly a *physical harm* conflict. The conflict was during *fantasy* and *parallel* play. Three teachers were *observing* the play and five children. This conflict was simply and effectively resolved by the *teacher*. There was no opportunity for child-generated CRS in this episode. Complete teacher CR occurred only several times throughout the observations.

  teacher # 4: (immediately intervenes both verbally and behaviorally) [*adult* CRS]

- **Conflict 2** – On February 15, 2005, at 11:35, children # 7 and # 1 were sharing and throwing a ball in the basketball hoop. It was *functional* play though *associative* peer play. Three teachers were *watching* the play five children. The conflict arose when child # 1 no longer

wanted to share the ball; hence, the episode was rated a *distribution of resources* conflict. Note that no teachers became involved in this conflict even though they observed it. Here the dominant CRS was *prosocial* even though hostility briefly occurred.

child # 7: it's mine [*prosocial*]

child # 7: (then the same child grabs the ball away in an angry fashion) [*hostile*]

child # 1: (the other child then runs to get more balls from the other part of the room) [*prosocial*]

- **Conflict 3** – On February 15, 2005, at 11:58, child # 7 tried to obtain a hair band from child # 1. The conflict was again over *distribution over resources*. The children were simply *functionally* playing during *associative* peer play. Two teachers were in the room *watching* the play four children. This was a*mixed* CRS episode.

child # 7: it's mine [*prosocial*]

child # 5: (she gets out of the other child's way and allows her to get the hair-band) [*passive*]

teacher # 4: (tells them to) share [*adult* CRS]

Class B, Observation 1:

- **Conflict 1** - On October 13, 2004 at 3:11, child # 11 took tape from child # 14 without asking for permission. Clearly this was a *social order* conflict. The children were *constructively* and *associatively* playing shortly after nap time. Three teachers were *watching* the play seven children in the *classroom*. The teachers were monitoring and guiding the CR actions. Nonetheless, this conflict was largely resolved *prosocially.*

teachers # 6 and 7: (intervened, told child # 14) that the other child did not know [*adult* CRS]

child # 14: (calmly and assertively asked for) the tape back [*prosocial*]

child # 11: (gives the tape back) [*prosocial*]

- **Conflict 2** - On October 13, 2004 at 3:22, child # 17 complained to child # 14 that she did not have enough clay, and did not get her fair share. The conflict was clearly *distribution of resources*. The play was *constructive* during *associative* peer play in the *classroom*. Three teachers were *observing* the play of seven children. *Prosocial* CRS dominated this episode.

  child # 14: (hands her some more clay from here collection) [*prosocial*]

  child # 14: I don't have more [*prosocial*]

  child # 17: (assertively stated) Yes you do! [*prosocial*]

  child # 14: No I don't! [*prosocial*]

  child # 17: (she leaves) [*passive*]

- **Conflict 3** - On October 13, 2004 at 3:25, child # 14 and # 17 argued over toy possession. The conflict was clearly *distribution of resources*. The play was *constructive* during *associative* peer play in the *classroom*. Three teachers were *observing* the play and seven children. The dominant resolution style was *prosocial* CRS.

  child # 14: (assertively stated) I want it [*prosocial*]

  child # 14: I had it first [*prosocial*]

  child # 17: there's another one [*prosocial*]

  child # 17: I had it second [*prosocial*]

  children # 14 and 17: (ask for assistance) [*seek help*]

- **Conflict 4** - On October 19, 2004 at 11:17, child # 18 came over to children # 12 and # 15 and started kicking the building blocks (in turn demolishing the creation). This was a *social order*

conflict during *constructive* and *parallel* play in the *classroom*. There were three teachers *watching* six children play. Child # 15 never got involved in the resolution process. This was an overwhelmingly *hostile* episode of CRS. The teacher intervened only when requested to and thus was not counted as *teacher intervention*.

*Blocks came tumbling down (this episode is attached on the accompanying DVD)

child # 12: (yells at her to) stop that [*hostile*]

child # 18: (keeps kicking over the blocks) [*hostile*]

child # 12: (he pinches her to get her to stop) [*hostile*]

child # 18: (appeals for) help [*seek help*]

teacher # 8: (takes child # 18 away from the block area)

- **Conflict 5** – Three minutes later, child # 18 returns during clean-up; however, she helps clean by stomping the block construction by child # 12. Again, this violated the *social order* of the *classroom*. The conflict was during *constructive* and *parallel* play. There were three teachers *watching* six children play. The CRS was *hostile*. A completely unexpected event occurred as a peer intervened to assist with the CR; it was the only such incident and given that it did not dominate the CRS, it was removed from the dominant CRS coding list. No teacher intervened.

  child # 12: pushes child # 18 off of the blocks [*hostile*]

  child # 12: I'm in my yard [*hostile*]

  child # 19: (a peer comes in to help clean-up and abate the tension) [*peer assistance*]

- **Conflict 6** - On October 26, 2004 at 11:17, children # 18 and # 15 were engaging in *fantasy* play in *parallel* with child # 14. Child # 14 takes a prop blanket from the other pair of children without asking for permission. This was as violation of *social order*. Child # 15 never got

involved in the resolution process. The three teachers in the room were *watching* the play and seven children. *Prosocial* CR dominated this episode.

child # 18: (assertively stated) we were using it [*prosocial*]

teacher # 10: (behaviorally stepped in) [*adult* CRS]

child # 14: I wanted it now [*prosocial*]

teacher # 10: (tells child # 14) maybe we can see if they are finished playing with it? [*adult* CRS]

child # 18: (assertively replies) No we are not! [*prosocial*]

child # 18: (goes to get child # 14 a different blanket) [*prosocial*]

child #18: you can have this one [*prosocial*]

teacher # 10: Look at that, you're such a great friend, look at that [*adult* CRS]

child # 14: (she did not accept the blanket) [*passive*]

- **Conflict 7** - On October 26, 2004 at 12:14, while child # 19 attempted to play and then take the ball away from child # 17. This was a *distribution of resources* conflict during *functional* and *associative* play in the *playroom*. The three teachers in the room were*observing* the play and eight children. Since no CRS dominated, it was coded as *mixed*. No teacher intervened.

  child # 17: Stop that! [*prosocial*]

  child # 19: (she let the ball go) [*passive*]

- **Conflict 8** - On October 26, 2004 at 12:22, while children # 17 and # 12 were engaging in *functional* and *associative* play, one teacher (id # 5) from the three in the room was *watching*. Many children were tossing balls around the playroom. Child # 12 was collecting balls into his own little play area. Child # 17 wanted several of these hoarded balls, and then acted on this

desire. An antagonistic conflict over *distribution of resources* proceeded as child id # 17 grabbed a handful of balls. These children used several CRS including *seeking help, hostile, prosocial* with significant teacher mediated CR. However, looking at the frequency of each CRS revealed that *hostile* means of CR governed this conflict episode. After these children were removed from the room, they stayed in the classroom with the teacher alone. Nothing else was heard or seen in terms of this conflict. These preschoolers also frequently played together before and after this incident. Clearly, teacher intervention was necessary and timely since she got involved before the conflict escalated into a dangerous situation.

The Attack of the Balls

child # 17: HELP! (child immediately yells for assistance) [*seek help*]

child # 17: (child jumps on the balls and on the child # 12) [*hostile*]

child # 12 and 17: I got it! (both scream and try to pull and grab the balls from each other) [*hostile*]

child # 12: (child bites child # 17's arm, keep in mind that this was right before lunch) [*hostile*]

teacher # 5: (runs to break this chaos up and tells them to stop) [*adult* CRS]

child # 17: (child smashes child # 12's face with her hand in response) [*hostile*]

child # 12 and 17: (both blame each other for starting in a calm manner) [*prosocial*]

teacher # 5: Drop the balls! (and then perhaps because of the loud noise by other children in the room, the teacher physically removed both children from the room to resolve the conflict. At that point, both children were already hysterically crying; though the teacher was very calmand told them to share the balls as they left) [*adult* CRS]

Class B, Observation 2:

- **Conflict 1** - On December 7, 2004 at 10:30, child # 10 (along with child # 11) asked child # 17 if she wanted to play doctor. This was a conflict over *play ideas* during *fantasy* and *associative* play. Four teachers were present and watching the play with eight children in the *classroom*. *Prosocial* CRS prevailed. However, no teacher intervened in the CR. Child # 11 never got involved in the conflict.

  child # 17: Nobody wants to play doctor [*prosocial*]

  child # 10: (tries to explain the game) [*prosocial*]

  child # 17: (leaves the play situation along with child # 11) [*passive*]

- **Conflict 2** - On December 7, 2004 at 11:12, child # 17 barged in and made lots of noise during child # 15's block play. The conflict was over *social order*. Children were engaged in *constructive* and *parallel* in the*classroom* . There were two teachers watching six children play.

  child # 15: This is not a house, stop that, I don't like that! [*prosocial*]

  child # 17: (continued to make noise and interrupt child # 15's play) [*hostile*]

  teacher # 10: (tells child # 15) that if she doesn't like it, not to look up at her and continue building the building (child # 15 continued building) [*adult* CRS]

- **Conflict 3** - On December 7, 2004 at 12:20, child # 19 did not get her way with the others in the block play group. The conflict was over *distribution of resources* conflict during *constructive* and *associative* play in the *blockroom*. There was only one teacher watching the play and four children. The other children were in the *playroom*. This was clearly a *prosocial* CRS episode.

  child # 19: (assertively and in a friendly tone stated) I'm mad! [*prosocial*]

children #'s 10, 12, 15 and 19: (all go back to *associative* play) [*prosocial*]

- **Conflict 4** - On December 8, 2004 at 4:11, child # 18 barged in child # 17's play scenario. The conflict was over *play ideas* during *fantasy* play and *associative* peer play in the *playroom*. There were three teachers *watching* seven children playing.

  child # 17: Get out of here [*prosocial*]

  child # 18: (she did not move) [*passive*]

  teacher # 10: use your words [*adult* CRS]

- **Conflict 5** - On December 8, 2004 at 3:35, children # 17, #11, and # 14 were discussing some characters during *sociodramatic* and *cooperative* play in the *classroom*. Children # 17 and # 11 eventually argued over *play ideas*. One child did not want to be a certain character in the plot. Two teachers were watching the play activity and seven children. Although this conflict was clearly resolved by the teacher, no one CRS dominated, hence it was coded as *mixed*.

  child # 11: I'm not a puppy [*prosocial*]

  teacher # 6: he doesn't have to be a puppy (she then finds out what he wanted to be [*adult* CRS]

- **Conflict 6** - On December 8, 2004 at 4:11, child # 14 wanted to play with children # 17 and # 13. The conflict was about *play ideas* during *sociodramatic* and *cooperative* play in the *classroom*. This was the most advanced episodes since it involved the highest levels of conflict types, play types, and peer play levels. The *teacher* dominated the CR here.

  child # 14: (immediately she asked for assistance) child # 17 said that I could not play them [*seek help*]

  child # 17: we're in the middle of play [*prosocial*]

teacher # 7: (they separated the children, though I did not capture what was specifically said) [*adult* CRS]

teacher # 6 (supported teacher # 6 and also separated them) [*adult* CRS]

Class B, Observation 3:

- **Conflict 1** - On February 8, 2005 at 12:21, child # 17 (perhaps accidentally) kicked child # 11 while they were dancing and running around in the *playroom*. The conflict was coded *physical harm* (even if it was accidental, it was recognized by the victim as intentional and hurtful). The play was *functional* and *parallel*. Three teachers were watching seven children. Although the teacher was perhaps required for this conflict, it was resolved *prosocially*

  child # 11: owwww [*prosocial*]

  teacher # 5: check on child # 11 [*adult* CRS]

  child # 17: it was an accident (and then check if child # 11 is o.k.) [*prosocial*]

  child # 17: (she questions the conflict, but did not fully cooperate with teacher's instructions until she was encouraged to actually check on the victim) [*prosocial*]

- **Conflict 2** - On February 15, 2005 at 12:14, child # 17 ran into child # 19 while running around in the *playroom*. Again the conflict was over *physical harm* during *functional* and *parallel* play. Three teachers were in the room watching the play and seven children. Although the teacher was perhaps required for this conflict, it was resolved *prosocially*.

  child # 19: owwww [*prosocial*]

  child # 19: (chased child # 17 around the room for her to say "sorry") [*prosocial*]

  child # 17: (kept running away) [*passive*]

  teacher # 5: (intervened and got the two children together to discuss it) [*adult* CRS]

- **Conflict 3** - On February 15, 2005 at 12:28, child # 17 pulled child # 15's shirt. This was clearly a *social order* dispute. The children were engaging in *fantasy* play and *associative* peer play. No teacher was involved in CRS, though three teachers were in the room watching the play and seven children. *Prosocial* CRS dominated this episode.

  child # 15: stop that! [*prosocial*]

  child # 15: (pulls child # 17 off of her shirt) [*prosocial*]

  child # 17: (let go of the shirt and leaves [*passive*]

It is quite difficult and perhaps unrealistic to read though these qualitative examples and consequently try to quantify the patterns of SR activity. The most productive method to interpret this much data was to conduct analyses that would disaggregate the patterns that conflict, CRS, contextual play variables, and various demographic factors contributed towards SR development. The episodes presented above captured the "moment of conflict." These examples allow the reader to witness the circumstances that surrounded the conflict and the CRS. SR could be understood by taking into account the contextual elements; all of the variables in the moment transformed the individuals – it becomes that specific dynamic that leads to SR in a particular occasion. When the 'dynamic' changes (as it always does), the previously witnessed behavior cannot be expected to necessarily rematerialize – this makes predicting SR nearly impossible. SR is a function of the momentary contextual artifacts. The differences between episodes across time in the two classes are minute when comparing them individually and microgenetically (see Siegler, & Crowley, 1991); though when one examines SR differences as a whole (as the quantitative aspect does), clearly a better understanding of SR and its leading level activities are afforded. In the next section, a number of analyses proved fruitful in capturing SR patterns.

CHAPTER FIVE
Results

5.1 Analysis

"However beautiful the strategy, you should occasionally look at the results" Winston Churchill.

This study attempted to explore whether engagement in certain types of play and peer interactions were associated with the development of SR across time, that is, from Times 1 to 2, and to 3. Conflict types and CRS were used here as an index of (complex) SR. Given repeated measures, to answer this overarching question, play complexity (with play levels and also peer quality arranged on ordinal scales) was associated with both conflict types and dominant CRS types at each of three time periods. Although many demographic variables were collected and considered (see above), some of this data could not be used because of the limited variance and/or low frequency of occurrence. Analysis of such minimal variance was associated with low reliability and ultimately proved futile for providing substantial information about behavior. However, this shortcoming should encourage future research to gather a larger data pool in order to evaluate how certain contextual variables contribute to SR.

In this study, I took advantage of repeated observations of *play*, *conflict*, and *CRS* (occurring at three separate points); these three variables were also 'nested' within each other (i.e., the conflict and CRS occurred during the play – it was within the same event). Using group conflict and CRS activity in milieu as the unit-of-analysis was a major result of the research. I accordingly focused on groups of children (during conflict events), and not individual children. The groups themselves were dynamic: play quality and partners changed frequently; the play groups ranged from two to five peers involved in a play conflict. This procedure opens up a way to explore new connections and offers implications to theory. It may change the way we

understand and assess development. However, novel approaches come with a cost: statistical analyses became more intricate and elaborate since the unit-of-analysis was a dynamic group activity (instead of individual activity). Specifically, SPSS (version 13), unfortunately could not carry out the necessary steps to analyze such shifting and layered data. SPSS was used to organize and calculate some basic data such as frequencies and means. Initially, programming SAS (*Statistical Analysis Software*, version 9.1) to analyze group conflict episodes created some difficulties. SAS is a powerful statistical tool that among many other functions, efficiently handled nested variables and repeated models.

Gary Winkel and I used SAS to conduct mixed model analyses for continuous variables (such as play complexity, peer play level, and teacher play involvement). Generalized mixed model (GLMM) analyses on the other hand were used with noncontiguous binary outcomes (for example distinct dominant CRS). A GLMM is "useful for accommodating the overdispersion often observed among nonnormally distributed responses and for modeling the dependence among responses inherent in longitudinal or repeated measures data by incorporating random effects (Stiratelli, Laird, & Ware, 1984)… [The assumption for a GLMM is that] random effects have a multivariate normal distribution whose variance components are to be estimated from the data" (cf. Sinha, 2003, p. 2). A GLMM approximate the fixed effects collectively with the variance components linked with the random effects. This procedure analyzes all of the data that are present. For this type ofanalysis to be valid, it is assumed that the data are missing at ran dom. However, data are hardly ever truly missing at random. To the extent that there are systematic factors that led to the data being missing, the analysis would not be valid. Fortunately, it was possible to ensure that there was no missing data.

A GLMM is defined by

$$y = X\beta + ZU + \varepsilon$$

Where y is an nx1 observable data vector, β 1 is a px1 vector of unknown parameters, u is a qx1 vector of unobservable random variables, X and *Z* are design matrices corresponding to the fixed and random effects, respectively, and ε is a vector of random errors (Johnson, 2003, p. 1).

A GLMM allows the researcher to take into account the effects of discrepancies between groups (i.e., conflict episodes) as was necessary in this study (Sinha, 2003). In addition, this method can be quite sensitive to outliers. It is also appropriate to use a GLMM to analyze longitudinal data collected from nested groups of subjects when the outcome is arranged on an ordinal scale (Antonio & Beirlant, 2005). For this investigation, contextual play variables were in fact organized on such an ordinal scale and collected longitudinally. The steps that allowed us to adjust for nominally scaled nested variables such as conflict types and CRS are discussed below. Antonio and Beirlant (2005) however suggested that the major drawback with a GLMM is that there are a number of estimated methods available for fitting the model, which in turn might offer different results when analyzing the same data. This method uses the '*F*' (Fisher) distribution to help determine if a given variance increase has a magnitude in a range that could happen just by statistical error in a normally distributed data, or if the variance increase is in fact significant. In addition, the 'P value' provides an estimate of probability of getting something greater than the outcome, when there is no effect in the population.

The majority of the analyses were computed by using the contextual play variables as the outcome (i.e. the dependant variable) while conflict types, CRS, and SCRS (i.e., SR explanatory factors along with any other independent variables) were controlled for. The reason for such an equation was due to the nature of the variables: both group SR factors (i.e., conflict and CRS) were

organized on a nominal scale while the contextual play variables were organized on ordinal and continuous scale. For a number of the analyses, the dominant CRS were recoded into binomial variables and used as the outcome of contextual play variables. Ideally, all of these scales should have been arranged ordinally. Since only the play variables scale was ordinally organized, it was generally used as the outcome to address the thesis questions. Although the conflicts and CRS were nominally structured, some of the types of both variables were recognized as more or less advanced and acceptable. For conflict, *play ideas* was considered the most advanced while *physical* harm was the least advanced. For CRS, *prosocial* was acknowledged as the most sophisticated while *hostile* was identified as the most intolerable. Within both explanatory variables (i.e., conflict and CRS), the types of activities could not yet be conceptually organized as most to least complex and appropriate.

As explained above, GLMM were used to resolve many of the queries which involved at least a comparison of the contextual play variables with the conflict types, CRS, SCRS, age context, sex and yielded '*F*' scores. Correlations and logistic regressions were applied to answer issues about conflict and CRS without the use of an ordinal measure which yielded 'Wald Chi-squares.' Simple statistics like the mean, mode, and standard deviation (SD) of isolated variables were computed by SPSS and discussed. The output for continuous variables (such as the contextual play variables) provided the least squares means. Least squares means are more commonly known as 'adjusted means' which provides a "best fit" solution to the relationship between the expected and observed sets of data by minimizing the sums of the squares of deviation between observed and expected values. The mean estimates from the least squares means were provided below. Of more importance, the least squares mean differences (DLSM) between the variable types were also discussed below and almost always presented in tables.

Since neither the conflict type nor the dominant CRS categories were arranged on a discrete, nominal scale (instead of a more appropriate continuous ordinal scale), the codes were grouped into binary terms in order to be compared for covariation. Rice (1994), a leading biostatistician described 'binomial (or binary) logistic regression' as a type of regression analysis where the dependent variable is a dummy variable (coded 0, 1). Rice (1994) also stated that the logistic regression model is basically a non-linear transformation of the linear regression. The logistic distribution method limits the expected probabilities to lie between 0 and 1. This approach has a number of functions, it can be used to calculate a dependent variable on the basis of independents and to deduce the percent of variance in the dependent variable explained by the independents; to rank order the relative importance of independents; to analyze interaction effects; and to understand the power of covariate control variables (Rice, 1994). Essentially, the logistic regression estimates the probability of a certain event occurring. One great advantage of this method is that the dependent variable does not need be normally distributed (which may be the case here). To assess if the outcome indeed fits well in the logistic regression equation, the Pearson Chi-Square value should be as close as possible to 1.00. Although slightly conservative, the *Wald Chi-Square* statistic was a key tool in allowing us to understand the effects of logistic binomial variables (i.e., the value is equal to the square of the parameter estimate divided by its standard error estimate). When analyzing the quality of data fit obtained with different parameter values, the variance of the fit (chi-square) is a very useful statistical quantity. Overall, GLMM, mixed models, Wald Chi-Squares, and Pearson correlations were the statistical methods used to answer my thesis questions.

Many variables contribute to SR. After organizing the massive data with the help of Ed Meehan, the next step was to make sense of it. To isolate which variables most contributed to SR, Gary Winkel and I scrutinized the data which was comprised of conflicts during preschool free-play. I assessed contextual play variables (see Appendix D): which included the quality of play (with four forms), peer play interactions (with three types), and adult play involvement (with three levels). Note that all of these contextual play variables were appraised only during conflict episodes; thus, the aggregate presented below only represents a small portion of actual total play activity during school time as well as only the captured conflicts. Since my focus was not on play per se, the overall time spent engaging in various play activity was not calculated. Subsequently, I examined the CRS that were used by children during the conflictual play episodes. The last major step was to look at the relationship between these major variables (i.e., contextual play variables, conflict types, and CRS), which were theorized to help develop and to explain SR. Additionally, looking closely at the percent frequencies provided below may be misleading since it portrayed an overall picture of the occurrences, which did not take into account the activity as a group event. Instead, every child involved in each activity was regrettably treated by SPSS as unique – therefore, the percent score almost always inflated. To compensate for this statistical dilemma, I provided the actual 'n' in the tables which accurately depicted group episodes occurrences (see tables below). To present the data in a more efficient manner, a table key provides a summary and an explanation of the codes used below. The p levels, following the standard system are taken to be significant as follows: *P <.10; **P <.05; ***P <.001; ****P <.0001.

Hypothesis 1 outcomes:

The following is a summary of the key hypotheses for play complexity, peer play quality, conflict types, and also CRS. Based on previous research, I hypothesized that more advanced play levels (i.e., *fantasy* and *sociodramatic* play), and social peer play (i.e., *associative* and *cooperative* play) interactions would have fostered more sophisticated conflicts (especially concerning *play ideas*). Accordingly, I expected that more advanced play and peer play levels would have promoted more refined CRS (especially *prosocial*). Additionally, I hypothesized that more advanced and collective play episodes would be associated with more complex conflict and consequently less adult play involvement and CR intervention. I anticipated change to occur over the observation period. Older preschoolers were expected to have become more self-regulated; this trend was expected to have continued across time. Specifically, conflicts were expected to have increased over the observation period. Older children in particular were hypothesized to have engaged in more advanced types of conflicts and also CRS across the observation time. They were also hypothesized to have increased advanced levels of play and peer interactions through time. Older children were hypothesized to have engaged in more sophisticated play and social peer play than their younger cohort.

Role of demographic variables: Sex, culture, and play context

- Sex breakdown of children in the preschool
- Culture breakdown of children in the preschool
- Play context breakdown during conflicts

To better illustrate the background for SR, I analyzed demographic statistics. Overall, there were only five boys (or 26.32%; and 14 girls) included in the study. There were no SR differences based on sex alone. The investigation included children who have come from five "different" cultures (as defined loosely; see Appendix G). Most of the children were either of "White /

European" (n = 11) or "Spanish" (n = 6) descent; one child was identified by the teacher as "Asian" and another child was recognized to be a mix of two or more cultures. Only six (of the 19) children had one or more siblings (or 31.58%). Most of the conflict observations were conducted in the morning (77.9% or n = 51; see Appendix F). At first, this tendency for morning observations was based on convenience but by the last observation, it was a requirement on the part of the daycare. Conflicts transpired in four play areas (there were two classrooms, though in general, children remained only in one; see Appendix E). Most of the conflicts occurred while children played in the *playroom* (overall occurring n = 43 or 58.4%, SD = 0.66). However, the majority of the children's actual play time was spent in the *classroom* which was the next most common area for conflicts (n = 19 unique conflicts or 32.2%). The least amount of play time and, accordingly, the least number of conflicts occurred in the *blockroom* (n = 5 unique conflicts or 9.4%; see table 1).

Table 1 - Play Context during conflict

	Context	Frequenc	Percent	*Actual episode frequency Class A + B
Valid	Blockroom	14	9.4	5
	Classroom	48	32.2	19
	Playroom	87	58.4	43
	Total	149	100	67

Role of the play context as associated with conflicts, and also with CRS

- Conflicts as a function of context
- Total number of conflicts as a function of context
- Distinct dominant CRS as a function of context

I hypothesized that the play environment would partly explain preschoolers' conflicts. To better understand how the play context fostered certain types of conflicts and CRS, a series of analyses were carried out. However, after recoding the conflicts types into binary variables, logistic regressions did not reveal any real direction. In other words, the context did not help

predict conflict type. Greater amounts of data on each conflict type coupled with more context variation may provide answers in the future studies. An additional analysis revealed no relationship between the number of conflicts as a function of the play context. Specifically, neither the *blockroom* nor the *classroom* significantly explained the number of conflicts in which the children were involved. Number of conflicts as a function of the *playroom* could not be calculated. I hypothesized that the *blockroom* would have allowed for a greater number of and less socially approved conflicts due to its small size; however, this relationship could not be established. I then proceeded to check whether the distinct dominant CRS could be predicted by the conflict context. However, none of the analyses yielded any significant results. More variance of conflict and CRS in the three types of contexts would have perhaps allowed for greater understanding of its role.

Contextual play variables outcomes

- Play type breakdown during conflicts
- Peer play type breakdown during conflicts
- Teacher play involvement breakdown during conflicts

As the forum for SR, children's play was at times simple and solitary while at other times it was quite complex and socialy involved. Taken as a whole, *fantasy* play dominated children's conflictual interactions (46.3% or n = 32 unique episodes). Make-believe play (i.e., fantasy and/or sociodramatic play) dominated in children's conflict episodes. *Fantasy* play occurred almost as frequently as all of the other play levels combined. *Functional*, *constructive*, and then *sociodramatic* play followed in order of play frequency (25.5% or n = 18, 20.1% or n = 13, and 8.1% or n = 4, respectively). *Sociodramatic* play was rarely followed by conflict and was generally quite basic – it lacked the integration of fully cooperative play while maintaining coordinated, group goal attainment. The SD for play type was 0.95 (see table 2 for a breakdown of play types). Overall, *parallel* play came up as the simplest and most frequent type of peer

interaction which fostered conflicts (40.3%, n = 29 unique cases of conflict during parallel play episodes). As a percent, *associative* peer play (which is considered a complex social interaction) occurred more often though in actual frequency was a very close second place (42.3%, n = 27). The probable reason for the discrepancy was due to the greater number of children involved in *associative* versus *parallel* play which may have slightly skewed the data. *Cooperative* play was last by far (only accounting for 17.4%, n = 11); those episodes where peers played to attain the same goals infrequently facilitated conflicts. Children's peer play was largely split between either some or minimal social interaction. The overall SD for peer play interaction was 0.73 (see table 3 for an overall breakdown of peer play levels). Teachers in the current study were almost always involved with children during play activity. In almost all cases, there were three teachers with the children throughout the day (SD = 0.88, ranging from 1 to 4 teachers). The *adult* as an observer dominated the play activities (occurring 88.6%, or in 59 unique episodes). Occasionally, one teacher was *directly* involved in the play activity (10.1% or n = 7 unique episodes); in only one conflict episode was a teacher completely *uninvolved* during play (or 1.3%). As can be seen, there was little variability with respect to teacher play participation – they were almost always involved (the overall SD = 0.34; see table 4 for teacher play involvement).

Table 2 - Play type during conflict

	Play type	Frequency	Percent	*Actual episode frequency Class A + B
Valid	Functional	38	25.5	18
	Constructive	30	20.1	13
	Fantasy	69	46.3	32
	Sociodramatic	12	8.1	4
	Total	149	100	67

Table 3 - Peer Play type during conflict

	Peer play	Frequency	Percent	*Actual episode frequency Class A + B
Valid	Parallel	60	40.3	29
	Associative	63	42.3	27
	Cooperative	26	17.4	11
	Total	149	100	67

Table 4 - Teacher / Adult Play type involvement during conflict

	Teacher Play Involvement	Frequency	Percent	*Actual episode frequency Class A +B
Valid	Uninvolved	2	1.3	2
	Watcher / observer	132	88.6	59
	Directly	15	10.1	8
	Total	149	100	67

Contextual play variables acrosstime

- Play type as a function of time during conflicts
- Play type as a function of class and time during conflicts
- Play type as a function of time, class, and the interaction during conflicts

Based on the literature, I hypothesized that preschoolers would have engaged in more advanced play and social peer interactions through time. Older children were expected to have engaged in greater amounts of complex and socially involved play. Using a number of mixed models, play complexity as a function of the class indicated that there was no variation. In other words, although I hypothesized that older children (from Class B as compared to Class A) would have engaged in more advanced play, no differences were found based on the quality of children's play. In a model with class by itself, it did not explain play complexity. When time, and the interaction of class and time was added to the model, there remained no significance associated with play quality.

- Peer play type as a function of time
- Peer play as a function of class and time and the interaction

In a model with class by itself, it did not explain peer play quality. However in a peer play model with time, class, and the interaction of time and class, only the interaction revealed a marginal trend (F (1, 119) = 3.04; estimate = -0.5646; P < 0.0836). Probing further revealed that there was no difference in the quality of peer play between the classes at observation times 1 or 2. However by the third observation, there appears to be a marginally significant (P < 0.0787) difference between the two age-based classes with more sophisticated peer play occurring in the older class.

- Teacher play involvement as a function of class and time during conflicts
- Teacher play involvement as a function of time, class, and interaction during conflicts

There was no significant association of teacher play involvement as a function of class and time; class was not significant; though teacher play involvement as a function of time for this model was apparently significant (F (1, 119) = 5.65; estimate = 0.1327; P < 0.0190). Thus, teachers were somewhat equally involved as an *observer* in both classes and across time. They were also equally as likely to be *directly* involved during play. The one occasion of *uninvolved* play was during Class A play time (at observation 1). Although teachers were significantly more involved in play by times 2 and 3, there were no differences between the classes. When I examined teacher play involvement as a function of time, class, and the interaction of observation time and class, the F value was not significant for the interaction, however time was significant (F (1, 119) = 5.76; estimate = 0.07094; P < 0.0179). In other words, teacher play involvement did not significantly change across time in either Class A or B, but did increase as a whole.

Conflict outcomes

- Conflict type frequency breakdown

Although the focus in the present study was on group conflict analyses, I obtained frequency information on individual target children who were involved in conflicts. The number of conflicts that children engaged in provided a useful way of determining the range of conflicts in which individuals were involved during play as well as noting any exceptions. After three waves of data collection, each child was involved in at least two unique conflict episodes. None of 19 children were involved in more than 19 conflict episodes. The overall conflict mode from the observations was 11, while the mean was 10.23, and the SD was 4.78; the previous results were calculated from 149 conflict turns – SPSS was used to calculate the frequencies from the total number of CRS attempts based on 67 unique conflict episodes.

Examining the conflict issues that arose during free-play provided revelation into SR. Conflicts were grouped into five categories (see Appendix C). There were a total of 67 observed unique conflict events during the half-year (the overall SD = 1.51). Most of the conflicts revolved around *social order* (i.e., 30.2%, or n = 23 unique conflict episodes). *Distribution of resources* appeared to be quite important to the children (occurring 29.5%, or n = 19 unique conflicts). Thus, they were aware of sharing rules in the class. *Physical harm* was not uncommon though was considered the least sophisticated conflict type (taking place 19.5%, or n = 14 unique conflicts). Conflicts about *play ideas* (which was the most advanced type) was less common, however (happening 20.8%, or n = 11 unique conflicts). There were a handful of occasions when children argued about roles and characters during play. As shown in previous research, children certainly tease and call each other names in this age group; quite surprisingly, however, there were <u>no</u> instances of *psychological harm* during my observations at this preschool (see table 5); although

verbal aggression (i.e. *psychological harm*) has often been observed in other research studies (e.g., Chen, 1998; Killen & Turiel, 1991; Polnariev, 2002). This conflict breakdown sets the stage for our in-depth investigation of SR.

Table 5 - Conflict type during social play

	CONFLICT TYPE	Frequency	Percent	*Actual episode frequency Class A + B
/alid	PHYSICAL HARM	29	19.5	14
	DISTRIBUTION RESOURCES	44	29.5	19
	PLAY IDEAS	31	20.8	11
	PSYCHOLOGICAL HARM	0	0	0
	SOCIAL ORDER	45	30.2	23
	Total	149	100	67

Conflicts across time

- Distinct conflicts as a function of time and controlling for class

Analyses of conflict differences across time gave us limited insight into which types of issue were more important to children over the observation course. Overall, only conflicts over *distribution of resources* changed over the observation period (Wald Chi-Square = 4.06; estimate = -0.6313; $P < 0.0439$) – though I controlled for class. The negative estimate for the conflict type indicates that there was less conflict over *objects* across time. Further conflict analyses were not significant as a function of time, though some were for class differences. See table 6 for the likelihood of *distribution of resources* occurring as a function of time, class, and the interactions.

Based on the vast research on age, I expected many differences between the age-based classes at the day care. Children's class was used as a proxy of age. I also expected demonstration of more sophisticated conflicts (especially *play ideas*) as a function of advanced play levels (i.e., *fantasy* and *sociodramatic* play) and social peer play interactions (i.e., *associative* and *cooperative*

play) from older children (i.e. from Class B) than the younger children (i.e. Class A). Children from Class B engaged in 40 observed unique group conflicts during play. For these older preschoolers, *social order* occurred most frequently (with 16 conflicts), followed by *distribution of resources* (n = 10), *play ideas* closely followed (n = 9), and *physical harm* was last (n = 5; see table 5). Children from Class B were responsible for most of the conflicts (n = 40 vs. 27; see table 1). The bulk of the conflicts occurred in the *playroom* and the *classroom* (n = 20 and 18, respectively). The *blockroom* was associated with a minimal number of conflicts for Class B and for Class A. The younger preschoolers predominantly engaged in conflicts in the *playroom* (n = 23 of 27 total unique conflicts). There was only one conflict occurrence in the *classroom* A context. For both classes, most conflicts occurred in the *playroom* (n = 43 of 67 total unique conflicts). In sum, older children were more conflictual and engaged in more advanced types of conflicts.

- Distinct conflicts as a function of time and class

All children were equally likely to have engaged in any of the conflict types. Most of the conflicts from students in Class A revolved around *physical harm* and *distribution of resources* (n = 9 for both); *social order* followed (n = 7); and *play ideas* only occurred twice. Students from Class A were 3.94 times more likely to inflict *physical harm* onto their peers when class was considered by itself (Wald Chi-Square = 6.20; estimate = 1.3703; $P < 0.0128$). Adding time to this model indicated that *physical harm* was not significant. Next, in a model containing observation time, class, and the interaction of time and class, revealed no significant main effects. Looking at *distribution of resources* as a conflict with only class in the model revealed no significant differences. In a model with class, time, and the interaction of time and class assessing

distribution of resources, indicated that class was apparently marginally significant (Wald Chi-Square = 3.10; estimate = 2.0643; P <0.0782), observation time was also apparently marginally significant (Wald Chi-Square = 3.40; estimate = -1.3474; P <0.0650), and the interaction of time and class was quite significant (Wald Chi-Square = 4.92; estimate = 1.4712; P < 0.0265; see table 6). Probing the interaction indicated that Class A had no change with *distribution of resources* as a function of time. However, there seemed to be a significant decrease in the likelihood that Class B would have argued over *distribution of resources* across time (Wald Chi-Square = 5.51; estimate = -1.3431; P < 0.0189). Additionally, I explored conflicts over *play ideas* using a model with only class in it which revealed a moderate trend (Wald Chi-Square = 2.94; estimate = 1.3533; P < 0.0862). In line with my hypothesis, Class B was more likely to have engaged in *play ideas* conflicts (which was the most advanced type) than Class A. However, in a model with time, class, and the interaction of time and class assessing the likelihood of using *play ideas*, no significant findings were revealed. Conflicts over *social order*were not significant when class was considered by itself, nor was the *social order* significant when I added time, and the interaction of class and time in the model. In sum, younger children were more likely to physically aggress towards others, thus having used the least advanced conflict type. The older children were less likely to have argued over sharing of object by observation time 3.

Table 6 - Distribution of resources conflict as a function of Time, Class, & Interaction

SOURCE	Wald Chi-Square
OBSERVATION TIME estimate	3.40 -1.3474
CLASS A estimate	3.10* -2.0643
OBSERVATION TIME x CLASS A estimate	4.92** 1.4712

- Total number of conflicts as a function of age

Out of theoretical speculation, I checked whether children's age was related to the number of conflicts that they engaged in; a marginal trend was found (F (1, 132) = 2.87; estimate = 0.8184; P < 0.0926). In other words, regardless of class or time, older children were marginally more likely to have engaged in conflicts than their younger peers. That is, older children were generally more conflictual.

Contextual play variables as explained by conflict and time

- Play type as a function of conflict type controlling for dominant CRS and time

The following analyses gave us insight into how contextual play dynamics were associated with various types of conflicts. I proceeded to test the null hypothesis (H_0) for a model containing play complexity (which is a continuous variable which ranged from the simplest play level, *functional* to the most complex type, *sociodramatic*; see Appendix D) as a function of conflict type and dominant CRS while I controlled for observation time. Such an analysis was done because conflict and CRS co-occurred in time. The F value was significant for the conflict type and thus there appears to be a difference between the means (F (3, 23) = 23.66, P <.0001; see table 7). Accordingly, this null hypothesis was rejected and I then examined the post hoc results. The t tests were significantly different from 0 at P <.0001. In line with the hypothesis, play was more advanced (3.51) when conflicts were about *play ideas*. Play was least advanced (1.73) when conflict was about *distribution of resources* while conflict about *social order* (2.05) and *physical harm* (2.35) lay in between. *Play ideas* differed significantly from all other conflict types. Play was significantly less sophisticated when conflict involved *distribution of resources* compared to *physical harm*. Thus, it appears that the most advanced conflict type was associated with the most sophisticated play level.

Table 7 – Play type as a function of Conflict type controlling for dominant CRS & time - DLSM

EFFECT means	PHYSICAL HARM 2.3273	DISTRIBUTION RESOURCES 1.7287	PLAY IDEAS 3.5118	SOCIAL ORDER 2.0533
PHYSICAL HARM	1	–	–	–
DISTRIBUTION RESOURCES	0.5985**	1	–	–
PLAY IDEAS	-1.1845****	-1.7831****	1	–
SOCIAL ORDER	0.2740	-0.3246	1.4585****	1

- Conflict types as explained by play type and time

Using a mixed model, there was a main effect for play level as a function of conflict style and time; the effect was apparently significant (F (3, 24) = 48.38; P <.0001); there was however no significant difference for the observation time in this model (see table 8). Play complexity was associated with a greater likelihood of *play ideas* conflicts. The *t* tests were significantly different from 0 at P <.0001. Examining post hoc results revealed that play was most advanced as a function of *play ideas* and time (estimate = 3.3122; P <.0001); this finding was in contradiction to the above finding in which *distribution of resources* uniquely increased as a function of time. Children were more likely to have argued over *play ideas* as they matured. In frequency order, conflicts over *physical harm* (estimate = 2.4875), *social order* (estimate = 2.3414), and *distribution of resources* (estimate = 2.0481) all followed *play ideas* in their probabilities of explaining play complexity. Specifically comparing mean differences between the conflicts as a function of time exposed *play ideas* as occurring significantly more than *physical harm* (estimate = -0.8247; P < 0.0004), more than *distribution of resources* (estimate =- 1.2641; P <.0001), and more than *social order* (estimate = 0.09707; P <.0001). In sum, it appears that the most advanced conflict type was associated with the most sophisticated play level across time as well.

Table 8 - Play type as a function of Conflict type & controlling for time - DLSM

EFFECT means	PHYSICAL HARM 2.4875	DISTRIBUTION RESOURCES 2.0481	PLAY IDEAS 3.3122	SOCIAL ORDER 2.3414
PHYSICAL HARM	–	–	–	–
DISTRIBUTION RESOURCES	0.4394	1	–	–
PLAY IDEAS	-0.8247***	-1.2641****	1	–
SOCIAL ORDER	0.1460	-0.2934	0.9707****	1

- Peer play type as a function of conflict type controlling for dominant CRS and time
- Peer play type as a function of conflict type and controlling for time

No significant differences were achieved for a model including of peer play level as an outcome of conflict types controlling for dominant CRS and observation time. I then proceeded to inspect how peer interactions changed across time and a function of conflict type. A strong trend was revealed for peer play as an outcome of conflict (F (3, 24) = 2.83; P < 0.0599); observation time was however not significant in this model (F (1, 117) = 0.01; estimate = 0.01794; see table 9). The t tests were significantly different from 0 at P <.0001. Advanced peer interactions were most likely to have occurred as a function of *play ideas* and time (estimate = 2.2804) as compared to the other issues. *Social order* was the last conflict type to qualify as significantly predicting social peer interaction across time (estimate = 1.4375). *Distribution of resources* (estimate = 1.9486) and *physical harm* lay in between (estimate =1.7239). Inspecting DLSM exposed only two noteworthy findings: conflict over *play ideas* was much more likely to occur over *social order* problems (estimate = 0.8429; P <0.0091); there was a trend for issues over *objects distribution* as more likely to occur than over *social order* (estimate = 0.5111; P < 0.0694).

Table 9 - Peer Play type as a function of Conflict type controlling for time - DLSM

EFFECT means	PHYSICAL HARM 1.7239	DISTRIBUTION RESOURCES 1.9486	PLAY IDEAS 2.2804	SOCIAL ORDER 1.4375
PHYSICAL HARM	–	–	–	–
DISTRIBUTION RESOURCES	-0.2248	1	–	–
PLAY IDEAS	-0.5565	-0.3318	1	–
SOCIAL ORDER	0.2864	0.5111*	0.8429***	1

- Teacher play involvement as a function of conflict type controlling for dominant CRS and time

Significant results were achieved for a mixed model comprised of adult play involvement as the outcome as a function of conflict types controlling for dominant CRS and observation time; time was evidently moderately significant (F (1, 111) = 3.55; P < 0.0623); the conflict type was apparently significant in this model (F (3, 23) = 3.17, P < 0.0437; see table 10). The t tests were significantly different from 0 at P <.0001. Teachers were most likely to be involved in play (as an *observer* or *directly*) when children behaved aggressively (i.e. *physical harm*; estimate = 1.2778). Adults were also highly likely to be engaged in the play when there were arguments of objects (i.e., *distribution of resources*; estimate = 1.2228). Conflicts about *social order* were likely to have involved the teacher as an *observer* during play (estimate = 1.0626). Finally, teachers were least likely to be involved in the play when children argued over *play ideas* (which is also the most advanced type; estimate = 0.9997). Teachers were most likely to let children play unsupervised during advanced play conflicts – which made sense. The comparison of the conflict occurrences as a function of teacher involvement also revealed some apparent significant within differences (based on DLSM results). Teachers were significantly more likely to be engaged in play when children argued over *physical harm* than either *play ideas* (estimate = 0.2781) or *social order* issues (estimate = 0.2152). In addition, conflicts over *distribution of resources* was significantly more likely to have greater teacher play involvement compared to both *play ideas* (estimate = 0.2231) and *social order* issues (estimate = 0.1602). In all, teachers appeared to be most involved in *physically aggressive* conflicts (which was considered the least sophisticated type) and least involved in play during *play ideas* (which was the most advanced conflict type).

Table 10 – Teacher Play involvement as a function of Conflict type controlling for dominant CRS & time – DLSM

EFFECT	PHYSICAL HARM	DISTRIBUTION RESOURCES	PLAY IDEAS	SOCIAL ORDER
means	1.2778	1.2228	0.9997	1.0626
PHYSICAL HARM	1	–	–	–
DISTRIBUTION RESOURCES	0.05504	1	–	–
PLAY IDEAS	0.2781**	0.2231**	1	–
SOCIAL ORDER	0.2152**	0.1602**	-0.06285	1

- Teacher play involvement as a function of conflict type and time

The role of conflict and time in explaining teacher play involvement was then checked. In this model, conflict did not predict teacher involvement in play; there was however an apparent significant change for time (F (1, 117) = 4.33; estimate = 0.1301; P < 0.0396; see table 11). Teachers were more involved in play at times 2 and 3 regardless of the conflict issue. The *t* test results for teacher involvement as a function of group conflicts and time were all significantly different from 0 at < .0001: *physical harm* (estimate = 1.2545), *distribution of resources* (estimate = 1.1287), *social order* (estimate = 0.9979), and lastly *play ideas* (estimate = 0.9553). Teacher play involvement was more likely to have occurred across time as a function of *physical harm* than either *play ideas* (estimate = 0.2992; P < 0.0395), or *social order* issues (estimate = 0.2566; P < 0.0505). Inspecting the DS M, both *physical harm* and *distribution of resources* were significantly more likely than *social order* to have been associated with teacher play involvement across time (estimate = 0.1309; P < 0.0412; estimate = 0.2566; P < 0.0505, respectively). *Physical harm* was also more likely to transpire than *play ideas* (estimate = 0.2992; P < 0.0395). Overall, teachers were unexpectedly more involved in children's play by the end of the observations.

Table 11 - Teacher Play involvement as a function of Conflict controlling for time - DLSM

EFFECT means	PHYSICAL HARM 1.2545	DISTRIBUTION RESOURCES 1.1287	PLAY IDEAS 0.9553	SOCIAL ORDER 0.9979
PHYSICAL HARM	1	–	–	–
DISTRIBUTION RESOURCES	0.1257	1	–	–
PLAY IDEAS	0.2992**	0.1735	1	–
SOCIAL ORDER	0.2566**	0.1309**	-0.04259	1

Dominant CRS outcomes

- Dominant CRS breakdown during conflicts

Almost all of the conflicts were resolved within five resolution exchanges (occurring 94.03% or n = 63 of 67 unique conflict episodes). Only two conflicts went on beyond ten exchanges. As expected, conflicts sparks were generally extinguished quickly. Although there was only one instance (or 2 %) when a conflict was clearly resolved *passively*, it was excluded from any statistical procedures due to its low frequency. Table 12 (provided below) illustrates the dominant CRS that occurred as a whole. *Prosocial* dominant CRS prevailed as the most frequently employed approach (47 % or n = 31 unique dominant CRS). Children also were highly inclined to have utilized several strategies to resolve conflicts (i.e. *mixed* dominant CRS; occurring 25.5 % or n = 16 unique dominant CRS). *Hostile* CRS followed in third place (accounting for 18 % or n = 9 unique dominant CRS). *Teachers* dominating the CRS occurred infrequently (12 % or n = 6 unique dominant CRS). Typically, there were three teachers in a class. Although *teachers* rarely dominated the CR, they intervened in about two thirds of the occurring conflicts (resolving them whether or not they were needed and/or asked to help; 67.1 % or n = 47 conflicts, SD = 0.72, see table 13). This conflict breakdown sets the stage for our in-depth exploration of SR.

Table 12 - Dominant CRS in response to conflict

DOMINANT CRS	Frequency	Percent	*Actual episode frequency Class A + B
ADULT CRS	12	8.1	6
PROSOCIAL	70	47.0	31
SEEK HELP	9	6.0	4
PASSIVE	2	1.3	1
HOSTILE	18	12.1	9
CRS MIX	38	25.5	16
Total	149	100	67

Table 13 - Total Number of Teachers involved in CR

	Number of Teachers Involved in CF	Frequency	Percent	*Actual episode frequency Class A + B
Vali	0	49	32.9	20
	1	93	62.4	44
	2	7	4.7	3
	Total	149	100	67
	1 or more	100	67.1	47

Dominant CRS across time

- Distinct dominant CRS as a function of time during conflicts

The only dominant child generated CRS thatchanged over the observation period was *seeking help* from a teacher: in a model with time and controlling for class, time was apparently significant (Wald Chi-Square = 4.19; estimate = 0.6971; P < 0.0408). Hence, children were more likely to *seek help* from a teacher through this observation time period. It may have been the case that the occurrence of more "heated" conflicts (such as over *physical harm*) at times 2 and 3 necessitated more assistance from an adult than was necessary during observation 1. There was a weak trend for greater *teacher* CR across time (Wald Chi-Square = 2.84; estimate = 0.7574; P < 0.0920). In other words, teachers in this studywere unexpectedly more likely to have resolved conflicts by the last observation than the first.

- Distinct dominant CRS as a function of class during conflicts
- Distinct dominant CRS as a function of class and time during conflicts
- Distinct dominant CRS as /a function of class and time and interaction during conflicts

As the only class difference with respect to the dominant CRS, the *teachers* increased in CR (with only class in it). Although I expected greater teacher involvement in Class A, I was somewhat surprised to find that teachers in Class A were 10.3 times more likely to have dominated CR as compared to Class B (results based on 12 of 149 events: Wald Chi-Square = 4.30; estimate = 2.3321; P < 0.0381). I then checked the interaction of *adult* CR as a function of class and time, however, the results yielded no significant differences. In the same model, class was not significant though time revealed a slight trend in increased *teacher* CR (Wald Chi-Square = 2.88; estimate = 0.1145; P < 0.0896). In model assessing children *seeking help* as a dominant CRS as a function of time, class, and the interaction of time and class, only time was apparently significant in predicting *seeking help* as a function of time (Wald Chi-Square = 4.16; estimate = 0.4272; P < 0.0415). Using separate analyses, neither *prosocial, hostile,* nor *mixed* CRS as a function of class and time was associated with change. In sum, it was found that teachers were more likely to have been involved in play with students in Class A (i.e. with younger children).

Contextual Play variables as associated with the dominant CRS

- Play type as a function of dominant CRS during conflicts
- Distinct dominant CRS as a function of play type during conflicts

The following set of analyses provided key information on the association between dominant CRS and the contextual play variables. As stated above, when a model comprised of play type as a function of the dominant CRS and conflict types while controlling for observation time was tested, the *F* value for the dominant CRS was apparently significant (F (4, 20) = 8.71; P < 0.0003; see table 14). The null hypothesis was thus rejected, and then I looked at the post hoc

results. The *t* tests yielded significant results. The dominant CRS as a function of play quality that occurred most frequently was somewhat unexpectedly a *mix* of several types of CRS (estimate = 3.0065). The second most frequently occurring strategy was *teacher intervention* (estimate = 2.9481). *Teacher* intervention was thus associated with more advanced play. *Seeking help* was related with the least advanced play quality. Hostility as a dominant CRS was also linked with less advanced play. Play was significantly more advanced when the dominant CRS was *mixed* compared to either *hostile* or *asking for help* Play was significantly more advanced when the dominant CRS was *prosocial* or teacher involvement compared to either *asking for help* or use of *hostile* CRS. The level of play did not differ if the dominant CRS was either *mixed*, *prosocial*, or involving the teacher. *Prosocial* and *hostile* CRS trailed thereafter (estimate = 2.7772; estimate = 1.8073, respectively). In a comparison of DLSM, *prosocial* CRS occurred significantly more than *hostile* strategies (estimate = 0.9699). *Mixed* CRS occurred more than *seeking help* (estimate = -1.5191) and more than *hostile* approaches (estimate = -1.1992). The *teacher* dominating CR occurred even more than children *seeking help* (estimate = 1.4607) and more than *hostile* strategies (estimate = 1.1408). Since the GLMM did not allow for convergence of play complexity as a function of *passive* CRS, this resolution strategy was left out of the tables below. Children who sought the *adult's help* were more likely have engaged in complex play levels (Wald Chi-Square = 6.32; estimate = 1.7966; $P < 0.0120$). *Mixed* dominant CRS was associated with more advanced play levels. Overall, both mixed and adult CR were associated with more sophisticated play quality.

Table 14 - Play type as a function of Dominant CRS controlling for conflict type & time - DLSM

EFFECT means	ADULT CRS 2.9481	PROSOCIAL 2.7772	SEEK HELP 1.4874	HOSTILE 1.8073	CRS MIX 3.0065
ADULT CRS	1	-	–	–	–
PROSOCIAL	0.1709	1	–	–	–
SEEK HELP	1.4607***	1.2898***	1	–	–
HOSTILE	1.1408***	0.9699***	-0.3199	1	–
CRS MIX	-0.0584	-0.2293	-1.5191***	-1.1992****	1

- Distinct dominant CRS as a function of play type, time, and the interaction during conflicts

Another crucial set of analyses was dedicated to disaggregating the role of distinct dominant CRS as a function of the play type variables and time. These results allowed us to better understand the role of play in promoting the strategies that children use to resolve conflicts. *Prosocial* CRS as a function of play quality and time revealed several findings; although time was not significant, play complexity was apparently significant in predicting use of *prosocial* dominant CRS (Wald Chi-Square = 3.95; estimate = 1.9796; $P < 0.0467$), along with the interaction of time and play type (Wald Chi-Square = 3.85; estimate = -0.9615; $P < 0.0498$; see table 15). In other words, more sophisticated play (especially *fantasy* play) was associated with a higher likelihood of *prosocial* CRS across time (which was the most advanced CRS). To investigate the possible significant interaction between time and play complexity in trying to explain *prosocial* CRS as the outcome, a link between the quality of play and the use of a *prosocial* CRS was found; observation time 1 was evidently significant but not times 2 or 3. In a model including time, play type and the interaction of time and play type, more sophisticated play types were significantly associated with use of less *mixed* dominant CRS (Wald Chi-Square = 3.95; estimate = -1.5493; $P < 0.0468$); while observation time did not change and neither did the interaction of time and play type. In other words, children who engaged in less advanced play were more likely to have applied *mixed* CRS over time. In a model including time, play type, and the interaction of time and play type, all

results were significantly associated with *hostile* dominant CRS. *Hostile* resolution decreased over observations from time 1 through 3 (Wald Chi-Square = 5.65; estimate = -2.9601; P < 0.0175), was advanced play (Wald Chi-Square = 3.97; estimate = -2.6123; P < 0.0464) was associated with less *hostile* CR, and the interaction of time and play type was associated with an increase in *hostile* CR (Wald Chi-Square = 4.08; estimate = 1.2639; P < 0.0435; see table 16). In particular, at 1 SD above the mean on play type was not a predictor of *hostile* CRS. However, at 1 SD above the mean on play level was apparently marginally significant (P < 0.0571) decrease in the use of *hostile* CRS. Thus, advanced play level (especially *fantasy and sociodramatic* play) was associated with lower probability of using *hostile* CRS across time. In a model with time and play quality, children were more likely to *seek help* as a function of play type when time was controlled. Specifically, time was not associated with change in *seeking help*; though in the same model, *seeking help* from the teacher did significantly change as a function of play complexity (Wald Chi-Square = 6.40; estimate = 1.6775; P < 0.0114). Children were more likely to *seek out the teacher* during more advanced play levels across time. Although significance level was achieved, caution is advised for the interpretation given the few episodes of *seeking help*. Unlike the other dominant CRS, there was no significant change in *teachers* CR as a function of time and play type and in the model. Teachers were just as likely to have intervened in CR regardless of play type and observation time. Also note that the *passive* CRS as a function of all of the contextual play variables across time is missing because of its infrequent occurrence as a dominant CRS (n =1 unique episode). In summary, advanced play was associated with *prosocial* CRS (which was considered the most sophisticated) over the observation period and also linked with a lower probability of using *hostile* CRS over the observation time.

Table 15 – Prosocial CRS as a function of Time, Play type, & Interaction

SOURCE	Wald Chi-Square
OBSERVATION TIME estimate	2.12 0.8090
PLAY TYPE estimate	3.95** 1.9796
OBSERVATION TIME x PLAY TYPE estimate	3.85** -0.9615

Table 16 – Hostile CRS as a function of Time, Play type, & Interaction

SOURCE	Wald Chi-Square
OBSERVATION TIME estimate	5.65** -2.9601
PLAY TYPE estimate	3.97** -2.6123
OBSERVATION TIME x PLAY TYPE estimate	4.08** 1.2639

- Peer play as a function dominant CRS controlling for conflict type and time
- Distinct dominant CRS as a function of peer play during conflicts

As formerly indicated, in a model consisting of the comparison of the peer play quality as a function of dominant CRS while controlling for conflict type and observation time, analyses indicated that the *F* value was evidently significant for the dominant CRS (F (4, 20) = 3.89; P < 0.0170; see table 17). The *t* tests were significantly different from 0. Use of a *prosocial* CRS was associated with more advanced peer play; teacher CR followed as predicting advanced peer interactions. The least advanced level of peer play was associated with *seeking help* or use of *hostility* as a dominant CRS. Sophisticated peer play promoted sophisticated CRS. Specifically, *prosocial* conflict resolutions led the way with predicting advanced peer relations (estimate = 2.1023). *Teacher intervention* (estimate = 1.9775) and *mixed* CRS (estimate = 1.9775) were similarly likely to have predicted more advanced peer play. *Hostile* (estimate =1.2952) and *seeking help* (estimate = 0.9819) were the weakest dominant CRS to have predicted the likelihood of advanced peer interactions. Inspecting DLSM, several dominant CRS occurred significantly more

than others. *Teachers resolving* conflicts (without the request) was more likely to occur than either children *seeking teacher assistance* (estimate = 0.9956) or resolving the issue *aggressively* (i.e., *hostile*; estimate = 0.6823). There was a greater probability that *prosocial* strategies were used as contrasted with both *seeking adult help* (estimate = 1.1204), and *hostile* CRS (estimate = 0.8071). Finally, *mixed* dominant CRS was more likely to occur than either *seeking help* (estimate = -1.0156), or *hostile* means of resolution (estimate = -0.7023). With more specific analyses, children who engaged in advanced peer play, such as *associative* and *cooperative* play were more likely to use *prosocial* CRS (Wald Chi-Square = 4.70; estimate = 0.7599; P < 0.0301). Conversely, advanced peer play was negatively related to *hostile* CRS. In other words, children who utilized *hostile* CRS were less likely to have engaged in complex peer play styles (Wald Chi-Square = 4.03; estimate = -1.1175; P < 0.0447). Thus, advanced play quality was most associated with the most advanced CRS type and least associated with the least advanced CRS type. The analyses revealed that the least advanced peer interactions were associated with the least advanced CRS.

Table 17 – Peer Play type as a function of Dominant CRS controlling for conflict type & time - DLSM

EFFECT means	ADULT CRS 1.9775	PROSOCIAL 2.1023	SEEK HELP 0.9819	HOSTILE 1.2952	CRS MIX 1.9975
ADULT CRS	1	-	–	–	–
PROSOCIAL	-0.1248	1	–	–	–
SEEK HELP	0.9956**	1.1204***	1	–	–
HOSTILE	0.6823**	0.8071***	-0.3133	1	–
CRSMIX	-0.0200	0.1048	-1.0156*	-0.7023*	1

- Distinct dominant CRS as a function of peer play and conflict types

Although I made no specific hypothesis for SR patterns, I checked whether a combination of conflict types and peer play styles predicted distinct dominant CRS's. A trend was found for *hostile* CRS in a model with *social order* and peer play. Specifically, a combination of *social order* conflicts (Wald Chi-Square = 3.79; estimate = 1.0919; P < 0.0516) and non-advanced peer

play, particularly *parallel* play (Wald Chi-Square = 3.78; estimate = -0.8818; P < 0.0520) was associated with a higher likelihood of a dominant *hostile* CRS (see table 18). No other combination of conflict and peer play style significantly predicted CRS. Thus, social order conflicts during the least advanced peer play level were associated with a greater likelihood of hostile CRS.

Table 18 – Hostile Dominant CRS as a function of Peer Play type & Social order conflicts

SOURCE	Wald Chi-Square
PEER PLAY TYPE estimate	3.78* -0.8818
SOCIAL ORDER estimate	3.79* 1.0919

- Distinct dominant CRS as a function of peer play across time
- Distinct dominant CRS as a function of peer play across time, and interaction

Children's social play also revealed some interesting directions. *Prosocial* CRS increased as a function of peer play quality (Wald Chi-Square = 4.51; estimate = 0.7379, P < 0.0337), while time in this model was not significant. Thus, more advanced peer interactions (such as *associative* and *cooperative* play) were associated with a higher probability of using *prosocial* CRS. In a model with time, peer play, and the interaction of time and peer play, mixed dominant CRS did not change as a function of time; peer play type revealed an apparent moderate significance (Wald Chi-Square = 3.67; estimate = -3.5678; P < 0.0552). In other words more social peer play was associated with a lower likelihood of using *mixed* dominant CRS. The interaction of time and peer play in this model revealed that more advanced peer play was associated with a significantly greater likelihood of applying*mixed* CRS (Wald Chi-Square = 4.20; estimate = 1.8255; P < 0.0404). At 1 SD above on peer play complexity, there was no significant use of *mixed* CRS across time; though at 1 SD below on peer play complexity significantly decreased the likelihood

of using *mixed* CRS across time. Accounting for time in the model, more sophisticated peer play was associated with less frequent use of *hostile* CRS (Wald Chi-Square = 4.17; estimate = -1.1594; P < 0.0410); time however did not predict *hostile* CRS in this model. There was clearly an increase in *seeking help* as a function of time, with peer play quality in the model (Wald Chi-Square = 5.51; estimate = 0.9995; P < 0.0189). Thus, over the observation period, there was an increased likelihood of *seeking help* from a teacher as a dominant CRS. Peer play quality did not predict greater likelihood of *seeking help*. In a model controlling for time, *adult* CR as a function of peer play quality was apparently marginally significant (Wald Chi-Square = 3.55; estimate = 2.9150; P < 0.0596); as was the interaction of time and advanced peer play (Wald Chi-Square = 3.49; estimate = -1.7830; P < 0.0617; see table 20). At 1 SD above the mean on peer play quality, the likelihood of *adult* intervention across time was not significant. However, at 1 SD below on peer play complexity across time was associated with a significantly higher likelihood of *teacher intervention* (P < 0.0147). In other words, there was a trend for less sophisticated peer play as predicting more *teacher* conflict intervention across time.

Table 19 – CRS Mix as a function of Time, Peer Play type, & Interaction

SOURCE	Wald Chi-Square
OBSERVATION TIME estimate	0.91 0.6047
PEER PLAY TYPE estimate	3.67* -3.5678
OBSERVATION TIME x PEER PLAY TYPE estimate	4.20** 1.8255

Table 20 – Teacher CR as a function of Time, Peer Play type & Interaction

SOURCE	Wald Chi-Square
OBSERVATION TIME estimate	5.95 1.4661
PEER PLAY TYPE estimate	3.55* 2.9150
OBSERVATION TIME x PEER PLAY TYPE estimate	3.49* -1.7830

- Teacher play involvement as a function of dominant CRS and controlling for conflict type and time
- Distinct dominant CRS as a function of teacher play involvement and time during conflicts

As previously indicated, in the model containing adult play involvement as a function of the dominant CRS and while controlling for conflict types and observation time, the dominant CRS yielded results thatwere apparently significant at alpha (F (4, 20) = 2.98; P < 0.0443; see table 21). The t tests were significantly different from 0 at P <.0001. Teachers were most likely to be involved in play (as an *observer* or *directly*) when children mostly *sought help* from them (estimate = 1.3421). The second most likely to get teachers involved in play was *hostile* dominant CRS (estimate = 1.2451). *Mixed* CRS were less likely to have teacher play involvement (estimate = 1.0409). Finally, teachers were least likely to *watch* or be *directly* involved in playwhen children primarily resolved conflicts *prosocially* (estimate = 1.0136). Most of these results seemed consistent with previous research. The comparison of teacher involvement as a function of the CRS occurrences also uncovered some possible significant within differences. Teachers were significantly more likely to have engaged in play when children mostly *sought help* rather than when *teachers resolved* the conflicts (estimate = -0.2802), or when children primarily used *prosocial* behavior (estimate = -0.3285), or even when there was a *mix* of several CRS (estimate = 0.3012). A *hostile* CRS was more likely to involve a teacher *watching* or *directly* involved in play than when *prosocial* resolutions occurred (estimate = -2.315) – this made logical sense. In addition, one relevant trend was for greater probability for teacher play involvement during *hostile* CRS than when teachers helped to resolve conflicts (estimate = -0.1832). One major statistical concern for findings about teacher involvement was the almost complete lack of teacher non-involvement in play (in all but one episode at least one teacher was somehow involved in the play). The results were skewed by the infrequency of uninvolved teacher play. In other words, teachers

were almost always involved in children's play – which is great for children, though limiting for statistical analyses. In sum, although teacher play involvement across time did not significantly predict distinct dominant CRS, teachers were more involved in the play when children asked for assistance and also during physically aggressive conflicts.

Table 21 – Teacher Play involvement as a function of Dominant CRS controlling for conflict type & time – DLSM

EFFECT means	ADULT CRS 1.0619	PROSOCIAL 1.0136	SEEK HELP 1.3421	HOSTILE 1.2451	CRS MIX 1.0409
ADULT CRS	1	–	–	–	–
PROSOCIAL	0.0483	1	–	–	–
SEEK HELP	-0.2802**	-0.3285***	1	–	–
HOSTILE	-0.1832*	-0.2315**	0.0970	1	–
CRS MIX	0.0209	-0.0274	0.3012**	0.2041*	1

Conflict and CRS relationship

- Correlations between conflict types and dominant CRS
- Correlations between teacher involvement in CR and conflict type
- Correlations between teacher CR involvement and conflict types

Inspecting a Pearson correlation output from the analyses of conflict types and dominant CRS yielded possible relationship trends, and revealed the strength and direction between these variables. These values however should be interpreted with some prudence since they do not take into account clustering of these variables. There were several apparent significant relationships which exposed the particular conflict types that were most likely to have covaried with certain dominant CRS (see tables 22 & 23). Conflicts about *play ideas* and *prosocial* CRS were significantly correlated ($r = 0.16452$; $P < 0.0450$). *Hostile* CRS was negatively correlated with *play ideas* conflicts ($r = -0.18612$; $P < 0.0230$); though *hostile* CRS was positively related with *social order* issues ($r = 0.20470$; $P < 0.0123$). Children who rarely argued over *play ideas* were significantly more likely to have used the *hostile* resolution style; though at the same time, those

who frequently entertained *social order* conflicts (also quite advanced) were more likely to have used *hostile* CRS (which was considered the least sophisticated approach). The *teacher resolving* conflicts was distinctly correlated to conflicts involving *play ideas* (r =- 0.14860; P < 0.0705). *Seeking help* from an adult was positively related to *play ideas* (r = 0.22396; P < 0.0060). Thus, children who engaged in the most complex play (i.e. *play ideas*) were more likely to have had the *teacher help* with CR, with (i.e. *seeking assistance*) or without a request. *Seeking help* was marginally significantly related to *physical harm* conflicts (r = 0.15998; P < 0.0513); while *seeking help* was also negatively related to *social order* conflicts (r = -0.16678; P < 0.0421), and *distribution of resources* issues (r = -0.16413; P < 0.0455). Thus, preschoolers were more likely to have *sought the assistance* of a teacher during *physical harm* conflicts but unlikely to do so during arguments over *social order* conflicts. Quite surprisingly though, *passive* CRS was distinct in its correlation with *physical harm* conflicts (r = 0.0455; P <0.0036). In other words, children were more likely to leave aggressive acts unresolved. Additionally, correlations for conflict type and *teacher* CR as a dominant CRS revealed no significant results (see table 22). Although, there was a strong trend for *teacher* CR and *social order* conflicts (r = 0.14931; P < 0.0692; see table 24). Most importantly, the most advanced conflict type was positively related to the most sophisticated dominant CRS.

Tables 22 - Between Conflicts & Dominant CRS correlations

CONFLICT TYPE / DOMINANT CRS X	PHYSICAL HARM	DISTRIBUTION RESOURCES	PLAY IDEAS	SOCIAL ORDER
ADULT CRS	0.10368	0.02467	-0.14860*	0.02019
PROSOCIAL	-0.12310	0.03917	0.16452*	-0.09199
SEEK HELP	0.15998*	-0.16413**	0.22396**	-0.16678**
PASSIVE	0.23727**	-0.07551	-0.05857	-0.07673
HOSTILE	-0.07820	0.03090	-0.18612**	0.20470**
CRS MIX	-0.00790	0.03657	-0.05616	0.02793

Table 23 – Dominant type of CRS * Conflict type during play
Crosstabulation Count (overall)

DOMINANT CRS x CONFLICT TYPE	PHYSICAL HARM	DISTRIBUTION RESOURCES	PLAY IDEAS	SOCIAL ORDER	Total
ADULT CRS	4	4	0	4	12
PROSOCIAL	10	22	20	18	70
SEEK HELP	4	0	5	0	9
PASSIVE	2	0	0	0	2
HOSTILE	2	6	0	10	18
CRS MIX	7	12	6	13	38
Total	29	44	31	45	149

Table 24 – Teacher CR involvement & Conflict type correlations

EFFECT	PHYSICAL HARM	DISTRIBUTION RESOURCES	PLAY IDEAS	SOCIAL ORDER
means	0.19463	0.29530	0.20134	0.30201
SD	0.39725	0.45772	0.40236	0.46068
TEACHER INVOLVMENT	0.01937	-0.11055	-0.04041	0.14931*

- Distinct dominant CRS as a function of conflict types

In addition to correlations, several logistic regression models were conducted to check whether any dominant CRS could be predicted as a function of conflicts. Unfortunately, very few of these analyses revealed interesting regularities. *Prosocial* CRS as a function of conflict types was not significant. Children who quarreled about *play ideas* (which was considered the most advanced conflict type) were more likely to resolve the conflict *prosocially* (the most advanced CRS). As a function of *play ideas*, *prosocial* CRS revealed the sole moderate trend (estimate = 1.5097; $P < 0.0793$). Note that there were too few (if any) cases of *prosocial* CRS as a function of *physical harm*, and thus this portion of analyses could not be conducted.

- Total number of conflicts as a function of dominant CRS

Using separate analyses, the number of conflicts that children took part in was a function of the dominant CRS (F (4, 21) = 2.45; P < 0.0776; see table 25). It was obvious that children who engaged in greater number of conflicts generally would have used more CRS than those who were less conflictual. Those who engaged in the greatest number of conflicts were tended to *seek help* as a dominant CRS. *Seeking help* was associated with significantly more conflicts than use of *adult* CRS, *prosocial*, and *hostile* CRS's. There were no significant differences in the mean number of conflicts when *adult* CR, *hostile*, *prosocial*, or *mixed* CRS were used. Thus, groups that engaged in more conflicts were more likely to have asked for help in resolving them.

Table 25 – Number of Conflicts as a function of Dominant CRS - DLSM

EFFECT means	ADULT CRS 9.0757	PROSOCIAL 10.1377	SEEK HELP 12.1716	HOSTILE 9.8871	CRS MIX 10.6605
ADULT CRS	1	–	–	–	–
PROSOCIAL	-1.0620	1	–	–	–
SEEK HELP	-3.0959**	-2.0339*	1	–	–
HOSTILE	-0.8114	0.2506	2.2845**	1	–
CRS MIX	-1.5848	-0.5228	1.5111	-0.7734	1

Hypothesis 2 outcomes:

The following is a summary of the key hypotheses for SCRS differences and predictors. Since older children were expected to demonstrate more SR than younger children, I accordingly hypothesized that the students from Class B would have been rated as more self-controlled on the SCRS than from Class A. In addition, both classes were expected to have lower scores (and thus to be more self-regulated) on this SC battery by time 2 since children would have had more practice with play, conflict, and CRS than they would have at the beginning of evaluation. Teachers' perceptions of children's SC were hypothesized to be strongly correlated with indices of SR (namely conflict and dominant CRS). Children who engaged in more advanced and socially

interactive play were also hypothesized as more likely to have acted upon more advanced conflicts and executed more sophisticated CRS. As such, SCRS scores were hypothesized to be lower (or have been judged as more self-controlled) for those children who played in more social and advanced play, and engaged in more complex conflicts. Additionally, since older preschoolers were expected to be more self-regulated, I expected that after dividing the classes further my age, the older children (within both classes) wouldhave received lower scores on the SCRS . Thus, children from Class B should have been judged as more self-controlled than those from Class A; also, older preschoolers in each classroom should have also been rated as more self-regulated than the younger cohort within the same class. Furthermore, children who played in smaller spaces (i.e. the *blockroom*) were expected to have engaged in more total number of conflicts than those who played in larger spaces. Preschoolers who played in smaller spaces and were involved in more conflicts were hypothesized to have been judged by their teacher as more impulsive and uncontrollable.

SCRS outcome differences between classes

- SCRS frequencies breakdown

SCRS were collected twice, at observation times 1 (after six weeks into the semester) and 3 (after almost six months). The head teacher from each class filled out the SCRS battery at both times. The overall average SCRS score at time 1 was 78.42 (range = 43 to 129); forClass A, the mean SCRS 1 score was 111 (range = 102 to 129); for Class B, the SCRS 1 score was much lower, with a mean of 59.42 (range = 101 to 126). Overall, the SCRS score for time 2 = 84.68 (range = 43 to 120); for Class A, the average SCRS 2 score was 120.14 (range = 101 to 126); for Class B, the SCRS 2 mean was = 64 (range = 43 to 120). The change between time 1 and time 2 on the SCRS indicated that on average, scores increased by 4.79 points. More precisely, scores from Class A

increased by an average of 9.14 points; scores from Class B minimally increased by an average of 2.25 points. In other words, children were rated as less self-controlled across time, especially the young ones. Students SCRS scores from Class A especially increased over the half-year. The overall mean across both SCRS scores = 81.55; more specifically, overall SCRS mean from Class A = 115.57; the overall SCRS mean from Class B = 61.71. See table 26 below for a more detailed breakdown of SCRS differences. Based on inspection of mean differences, it appears that my hypothesis was thus supported: younger children (i.e., those from Class A) were perceived as less self-controlled and patient than their older counterparts (i.e., from Class B); however, I expected that across time, children's SCRS scores in both classes would have decreased.

Table 26 – SCRS scores breakdown

SCRS		SCRS 1 mean	SCRS 2 mean	SCRS change	SCRS mean
Valid	Overall scores (n = 19)	78.4211	84.68421	4.7895	81.5526
	SD	28.1906	32.7313	14.5815	29.9564
	Class A scores (n = 7)	111	120.1429	9.1429	115.5714
	SD	29.99564	3.9340	9.5294	4.8856
	Class B scores (n = 12)	59.4167	64	2.25	61.7083
	SD	13.7342	21.8591	16.7121	17.0113

I then checked whether there were any significant differences in SCRS scores for any set of children. There were no outlier results for the self-control battery; in other words, SCRS scores were evenly distributed. In addition, SCRS 2 scores should have been conceptually more accurate assessment of behavior than SCRS 1 scores since teachers had six months to observe their children's behaviors (or five months more than the first rating measure). To be certain, a simple correlation revealed that SCRS 1 results were very strongly and positively related to SCRS 2 results ($r = 0.90713$). Hence, although I could have used either set of evaluations, SCRS 2 ones were chosen based on the premise that across time teachers got to better know their students.

- SCRS change as a function of class, age, and interaction

Since I was interested in SCRS change from time 1 to 2 (i.e., SCRS 2 - SCRS 1), a model containing class, age (i.e. mean centered age), and interaction of class and age was conducted; in the model, class was evidently significant (F (1, 26) = 17.10; estimate = 9.669; P < 0.0003), age was apparently significant (F (1, 119) = 20.52; estimate = 17.5672; P <.0001), and the interaction was evidently significant (F (1, 119) = 23.05; estimate = 18.0774; P <.0001). The average overall child's age was 3.9 (this calculation was based on distinct conflict frequency which included both classes, and accounted for age change over the six month period; SD was 0.74; also note that the Class B was made up of more students which slightly increased the overall mean centered age). Post hoc inspection of means indicated that for children 1 SD below age there was an apparent significant difference between children in Class A and B on SCRS score changes. At 1 SD above the age mean, there were no differences in SCRS change. However, younger children in Class B were judged as more self-controlled on SCRS across time (from time 1 to 2). The teacher from Class A judged her younger preschoolers on SCRS as generally more uncontrolled over the observation period (estimate = 10.1596; P <.0001). The teacher in Class B judged her younger preschoolers as more self-controlled across time (estimate =- 12.7963; P <.0079). Thus, there appeared to be a discrepancy with the SCRS ratings from the Class B teacher.

Role of Contextual Play variables in explaining SCRS 2 scores

- SCRS 2 as a function of play type while controlling for SCRS 1

Preschoolers play quality was hypothesized to be related to SCRS 2. Using separate analyses, after controlling for SCRS 1, SCRS 2 was found not to be related to play complexity. Sophisticated play levels did not help explain SCRS 2 scores. Thus, children who engaged in advanced play were no more likely to have received high or low scores on the SCRS 2.

- SCRS 2 as a function of peer play type while controlling for SCRS 1

Peer play quality uncovered a strongtrend for explaining SCRS 2 (F (1, 119) = 3.61; P < 0.0600). Contrary to my hypothesis, the more social was the play activity, the more likely it was for those children to have received higher SCRS 2 scores. Thus, those children who played *associatively* were rated as most impulsive and least self-controlled at time 2. Teachers were expected to have judged more socially adept players as more self-controlled since they were better able to work well with others and have demonstrated greater levels of cooperation.

- SCRS 2 as a function of teacher play involvement, while controlling for SCRS 1, and interaction

Given the quite strong correlation (r = 0.91) between SCRS 1 and SCRS 2 scores, it became apparent that teachers perception of children's behaviors stayed rather constant and was not affected by play complexity. In a model inspecting SCRS 2 scores containing SCRS 1 scores and teacher play involvement, there was an evident significant effect for SCRS 1 (F (1, 118) = 129.29; estimate = 0.9044; P <.0001), there was a main effect for teacher play involvement (F (1, 118) = 13.62, estimate = -21.92; P < 0.0003), and there was an apparent significant interaction of SCRS 1 and teacher play involvement (F (1, 118) = 15.63; estimate = 0.2085; P <.0001; see table 27). Inspection of the interaction indicated that for children 1 SD above the mean on SCRS 1 scores, teacher play involvement had no significant effect on child SCRS 2 scores. However, children who were below 1 SD on SCRS 1 scores had an apparent significant effect based on teacher play involvement which was associated with decrease on SCRS 2 (t = -3.07; P < 0.0026). Thus, children who were rated by their main teacher as more self-controlled on SCRS 1 were less

likely to have had teachers involved in their play by the second round of SC assessment (i.e., at SCRS 2).

Table 27 – SCRS 2 as function of Teacher Play involvement controlling for SCRS 1, & Interaction

EFFECT	F value
SCRS 1	129.29****
TEACHER PLAY TYPE mean	13.62*** -21.9249
SCRS1* TEACHER PLAY TYPE mean	15.63**** 0.2085

Role of Context in explaining SCRS scores

- Context as explained of SCRS 2 while controlling for SCRS 1

Recall that the play and conflict episodes occurred in three possible rooms. I checked whether any of these play environments were more likely to have explained the SCRS 2 scores while controlling for SCRS 1 scores. Contrary to the hypothesis, the play context was not related to SCRS 2. Even though the context did not help predict SCRS 2 scores, more variation is needed to calculate any possible influence.

Role of Conflict in explaining SCRS 2 scores

- SCRS 2 as a function of conflict type and controlling SCRS 1
- SCRS 2 as a function of total number of conflicts

It is conceivable that the type of conflicts that children were involved in were correlated to their SCRS scores (especially to SCRS 2). Holding SCRS 1 scores constant, SCRS 2 revealed a possible significant effect with conflict type (F (3, 24) = 3.68; P < 0.0259; see table 28). Based on the 'fixed effects' results, only conflicts about *play ideas* actually produced a marginal trend with SCRS 2 (estimate = 3.6586; P < 0.0966). Neither issues over *distribution of resources* nor *physical harm* conflicts were significant in this model. The *t* tests were significantly different from

0 at P <.0001. There were several significant findings when I compared the types of conflicts to each other with SCRS 2 as the outcome (see table 28). SCRS 2 as a function of *play ideas* conflicts were much more likely to have occurred than *over objects* (estimate = -5.3735; P < 0.0065), *physical harm* (estimate =- 4.4692; P < 0.0357), and also notably more likely than *social order* issues (estimate = 3.6586; P < 0.0966). Children that engaged in *play idea* conflicts were marginally more likely to have received higher SCRS 2 scores than the other conflict types. Inspection of the post hoc means revealed greater SCRS 2 scores for those who engaged in play ideas conflicts as compared to the other conflict types. SCRS 2 scores did not differ for the other conflicts. This finding was contrary to the hypothesis that children who engaged in advanced conflicts would have been judged as more self-controlled than those who were preoccupied with *physical harm* issues. In a related respect, I wondered whether children's SCRS 2 scores were related to the actual number of conflicts that these individual children were involved in; however, the results were not significant while controlling for SCRS 1. Hence, the total number of conflicts (whether socially acceptable or not) was not related to individual SCRS 2 results. These results showed that children who engaged in *play ideas* conflicts were unexpectedly associated with more impulsive and less self-controlled ratings from their teacher.

Table 28 - SCRS 2 as a function of Conflict type and controlling SCRS 1 – DLSM

CONFTYPE means	PHYSICAL HARM 89.9179	DISTRIBUTION RESOURCES 89.0136	PLAY IDEAS 94.3871	SOCIAL ORDER 90.7285
PHYSICAL HARM	1	–	–	–
DISTRIBUTION RESOURCES	0.9043	1	–	–
PLAY IDEAS	-4.4692**	-5.3735*	1	–
SOCIAL ORDER	-0.8107	-1.7149	3.6586*	1

Role of number of conflicts, age, and sex in explaining SCRS 2 results

- SCRS 2 as a function of total number of conflicts, age, sex, and interactions

I also wondered if some combination of the total number of conflicts that children were involved in, their age, and perhaps their sex should have been associated with differences with the SCRS 2 scores. While controlling for SCRS 1, SCRS 2 was not predicted by (the mean centered) age (F (1, 114) = 0.33; estimate = -11.0886; P < 0.5668). The total number of conflicts was significantly related to SCRS 2 in this model (F (1, 114) = 3.76; estimate = -0.7954; P < 0. 0549). The child's sex was surprisingly a significant predictor of SCRS 2 scores (F (1, 20) = 14.93; estimate = 7.9790; P < 0.0010). Of the possible two-way interactions, only age and sex was evidently significant in explaining SCRS 2 scores (F (1, 114) = 62.68; estimate = 26.0196; P <.0001). However, of the three-way interactions, total number of conflicts by age and by sex was apparently marginally significant (F (1, 114) = 3.86; estimate = 1.9699; P < 0.0518). To investigate the second order interaction involving the child's age, the child's sex, and the total number of conflicts, I first examined the mean differences for boys versus girls for children who were 1 SD below the mean on age, and 1 SD below the mean on total number of conflicts. Under these conditions, there was an apparent significant (t = -2.95; P < 0.0079) difference between boys and girls in favor of girls (mean self control for boys = 93.95 vs. 86.94 for girls). Therefore, younger than average boys who engaged in less conflicts were judged as less self-controlled as compared to girls and also older boys who were involved in more conflicts. I then examined the mean differences for boys versus girls for children who were 1 SD below the mean on age but 1 SD above the mean on total number of conflicts. Under these conditions, there was an apparent significant (t = - 2.65; P < 0.0153) difference between boys and girls again in favor of the girls (mean self control for boys = 94.50 vs. 79.22 for the girls). Therefore, younger than average boys who engaged in more than the average total number of conflicts were still judged as more conflictual. In the next analysis, I examined the mean differences for boys versus girls for children who were 1 SD above the mean on

age and 1 SD below the mean on total conflicts. Under these conditions, there was an apparent significant difference ($t = 2.14$; $P < 0.0450$) between boys and girls in favor of the boys (mean self control for boys = 85.81 vs. 103.21 for girls). Therefore, older than the average girls who engaged in less conflicts were judged as less self-controlled. In the final analysis, I examined the mean differences for boys versus girls for children who 1 SD above the mean on age and 1 SD above the mean on total number of conflicts. Under these conditions, there was an evident significant ($t = 6.19$; $P < .0001$) difference between boys and girls again in favor of the boys (mean self control for boys = 70.04 vs. 106.85 for the girls). Therefore, older girls who were engaged in more than the average number of conflicts were also judged as less self-controlled. Thus, teachers judged younger girls as more self-controlled than both younger boys and older girls regardless of the total number of conflicts that they engaged in. Older girls were generally perceived as more conflictual, impatient and less self-controlled than both older boys and younger girls, regardless of the total number of conflicts that they engaged in. Most importantly, this analysis seems to have possibly revealed an 'expectancy effect' from at least one teacher.

Role of dominant CRS as explained by SCRS 2 scores

- Distinct dominant CRS as a function of SCRS 2

Finally, from all of the collected variables, the manner in which children resolved conflicts was thought to most strongly correlate with SCRS 2 scores. That is, on one hand, those children who received high ratings from a teacher on the SCRS 2 (i.e. low SC scores) were hypothesized to also have largely utilized *hostile* CRS. On the other hand, those children who scored low on the SCRS should have largely utilized *prosocial* CRS. However, SCRS 2 and dominant CRS results were not significantly related. Children's dominant CRS was unexpectedly not associated with their SCRS 2 scores.

CHAPTER SIX:
Discussion

Through this exploratory study, I was able to demonstrate the importance of SR as seen through the lens of conflict and conflict resolution strategies during peer free-play as guided by a sociocultural and activity approach. Researchers (e.g., Hay, 1984; Killen & Turiel, 1991) have argued that behavior is not a simple additive function of variables like age, sex, culture, or even context for example. Instead, processes such as SR are based on a myriad of variables — all of which collectively and continually transform its development. Development is profoundly transactional; its pathways "are at best probabilistic and not deterministic" (Campbell, 2002, p. 2). Self-regulation is conceptualized as a dynamical process. Nevertheless, I collected and examined several possible key factors which were thought to momentarily transform the development of self-regulation and thus could help researchers, teachers, and parents to better understand and attempt to predict the process of self-regulation.

Most of the studies in this field investigated whether conflicts were resolved, and if so, which individual was responsible for the resolution (e.g., Genishi & DiPaolo, 1982; Killen & Turiel, 1991). Although this method of inquiry provided some fundamental information, it in turn left many directions open for further research. In addition, although the premise of my study was focused on group activity, studies of individual's self-regulation abilities helped provide the foundation for my work. Currently**,** this field is limited to research on individual's activity. Thus, the findings here may not correspond to previous research given different methods of investigation. Various approaches may provide answers to different questions. The present study probed deeper into how and under what circumstances conflicts occurred and were resolved by groups instead of by individuals; assessing the contextual elements during which conflict

resolution took place in relation to conflicts during free-play was taken as a foundation for understanding self-regulation development. Given the approach undertaken, the self-regulation variables used here were nested within each other – that is, conflict and conflict resolution strategies were only analyzed as they occurred during play.

The central premise of this study was the application of children-in-conflict activity-in-context as the key unit-of-analysis. This method of self-regulation inquiry fit in with a Vygotskian / activity framework. In applying children-in-conflict activity-in-context as the unit-of-analysis, the major finding of this research project was uncovering the possible link between the quality of play and self-regulation. We considered a number of key facets of self-regulation, including the types of conflicts, conflict resolution strategies, teacher involvement in conflict resolution, age, and how these variables changed across time as embedded in play. Self-regulation is considered and examined as a collaborative process. There is great irony in research: we must isolate the variables in order to study and quantify their contribution, although we miss out on the totality of a construct in the process. In this study, conflict and conflict resolution strategies were the primary indices of self-regulation; they were evaluated as they occurred during various forms of play. I was particularly interested in the dominant conflict resolution strategies that children used to regulate play. Although I provided conflict examples illustrating individual conflict resolution strategies (in Chapter 4), it was not important to consider the individual child's action because self-regulation was conceptualized as a function of the group and context. In accord with the theoretically based unit-of-analysis, these markers of self-regulation development were measured as they occurred during social interaction. All in all, self-regulation is a dynamic process which becomes enacted, practiced, and expressed in play activity.

Based on theoretical assumptions (as discussed in Chapter 1), both conflict and conflict resolution strategies during preschool free-play were interpreted to have demonstrated complex self-regulation. Inspecting key results revealed that children who engaged in advanced types of conflicts were more likely to have participated in more advanced play and also more elaborate social activities with their peers. In applied terms, conflicts over play ideas (which was considered the most sophisticated type) and social order were associated with fantasy play and associative peer play interactions. Furthermore, those preschoolers who exhibited more complex and collectively involved play were also more likely to have applied socially acceptable conflict resolution strategies. We specifically found that fantasy play and associative peer play interactions were both associated with greater use of prosocial conflict resolution (which was considered the most advanced strategy) and fewer cases of hostile conflict resolution (which was considered the least advanced strategy). Also interestingly, on one hand, children who engaged in play ideas conflicts were also most likely to have applied prosocial conflict resolutions; on the other hand, children who engaged in physical harm conflicts (which was considered the least advanced type) were most likely to have applied more hostile resolutions. Overall, and in support of my leading thesis, it seems that complex and advanced self-regulatory functions go hand-in-hand.

This study may in fact change the way that we conceive and approach research. Recognizing that an activity such as self-regulation is an interactive processes within a context may allow researchers greater understanding of how it develops. Knowledge of self-regulation etiology may help us in facilitating its development. Applying children-in-activity-in-context as the unit-of-analysis seems to more honestly account for psychological development given its occurrence and transformation within a social milieu. Various play types have been linked with self-regulation. In particular, more socially involved and complex play were statistically

associated with both the most advanced conflict type and conflict resolution strategy. My findings seem to lend support to Vygotsky's claim that children do accomplish their greatest self-control in dramatic play. More sophisticated play with others demands qualitatively more flexible and advanced self-regulation. The theoretical framework coupled with the analyses strengthens the idea that social interactions require some inhibitory function in order to effectively collaborate and achieve a shared goal during play. Ideally, play seems to lead and motivate children to control their behaviors in order to maintain the play activity. Realistically, as children play, their behaviors and thoughts sometimes clash and consequently lead to conflict. Children who engage in more advanced conflicts may in turn also apply more sophisticated resolution strategies – thereby demonstrating greater self-regulation. Conflicts in turn may drive the development of self-regulation if children intend to continue shared interactions. We know from previous research (e.g., Rende & Killen, 1992) that friends are more likely to peacefully resolve conflicts and maintain their play relationship. Hence, the desire to maintain a shared activity within a flexible rule-bound play activity may be the impetus for self-regulation. This research will hopefully persuade parents and teachers in allowing for conflicts and practicing resolving them as it may facilitate the development of self-regulation.

Conflicts and conflict resolution happen quite quickly – if one leaves children alone for even a few seconds, the event could be over. Most of the conflicts (about 94%) were settled swiftly – within a matter of five conflict resolution attempts; most of the conflicts were resolved civilly and usually without much escalation. Children used prosocial CRS (as the dominant child conflict resolution strategy) in almost half (or 47%) of the observed disputes (see table 12). This finding was an amazingly pleasing confirmation: preschoolers knew how to properly and peacefully resolve conflicts in the school setting and demonstrated this ability repeatedly. In over

one-quarter of the captured conflict episodes, the children used a mixed set of conflict resolution strategies – which often included non-dominant prosocial approaches. Interestingly, these children in all but one case used a proactive (i.e., non-passive) dominant conflict resolution strategies when they were given the opportunity to resolve the conflict; in other words, the passive conflict resolution approach was quite rare. This lack of passive resolution contrasts with previous research (e.g., Killen & Turiel, 1991) and also goes against my own expectation. It is wonderful that conflicts were addressed and (perhaps sometimes only temporarily) resolved.

Conflict resolution strategies were quite affected by peer play interactions. Importantly, prosocial conflict resolution strategies were most commonly associated with associative and cooperative peer play (see table 15). In addition, I found that children who engaged in advanced peer play were less likely to have used hostile conflict resolution strategies (see table 7). Hostile resolution strategies were most likely to occur when children engaged in parallel play and argued over social order conflicts (see table 18). Thus, as arguments over rules occurred during simple peer play interactions, there was a pattern of resolving them with the least socially acceptable strategy. In sum, complex peer play quality was most associated with the most sophisticated conflict resolution strategies type and least associated with the least advanced conflict resolution type.

Advanced play such as fantasy play was significantly associated with a greater likelihood of prosocial CRS. The possible link between the quality of play and the use of prosocial conflict resolution strategies was found only during observation time 1 (see table 15). Preschoolers who engaged in less complex play were more likely to have used mixed conflict resolution strategies across time. Interestingly, it appears that hostile conflict resolution strategies significantly decreased over the observation period and as a function of complex play (see table 16). In sum,

children who spent much of their time engaged in both fantasy and/or sociodramatic play were less likely to have used hostile conflict resolution strategies during confrontations; more importantly, this finding held across time. Thus, sophisticated play quality was associated with both more advanced conflict resolution and less immature conflict resolution.

Another point of interest was which conflicts were associated with certain types of conflict resolution strategies (see tables 43 & 44). Physical harm was positively correlated with hostile CRS, passive CRS, and seeking adult help. Thus, those children who often got caught up in physical scuffles were more apt to resolve them using either hostile tactics, do nothing and let the conflict just continue, or attempt to leave the conflict scene altogether, and also more likely to ask the teacher for assistance. Preschoolers who argued over play ideas were in turn likely to ask for the teacher's help during conflict episodes and also to have utilized socially appropriate (i.e. prosocial) conflict resolution strategies. Furthermore, the number of conflicts that children took part in was a function of the dominant CRS (see table 25). In other words, the types of conflict resolution strategies that preschoolers employed helped to explain the number of conflicts that they were actually involved in. Extending this finding further, the more opportunity children had for advanced conflicts (for instance play ideas) during free-play, the more likely it was that they in turn used advanced conflict resolution strategies (such as prosocial approaches); while those children who engaged in immature conflicts (for example physical harm) during free-play were most likely in turn to have used immature CRS (such as hostile approaches). From the perspective of an educator and/or a caregiver, allowing children opportunities to engage in complex conflicts may lead them to also apply complex conflict resolution strategies. However, it is plausible that basic conflicts may be a precursor to more sophisticated ones; congruously basic CRS may eventually lead to more sophisticated ones; the collected data did not afford confirmation of such

possible directionality. Thus, children who engaged in the most sophisticated conflict type were also most likely to have applied more socially appropriate types of conflict resolution. Alternatively, children who engaged in the least sophisticated conflict type were most likely to have applied less socially appropriate conflict resolution.

All observed children engaged in conflicts during free-play. Only one child was involved in 19 unique conflict episodes; it happened to be a girl from Class B (i.e. the older class) who was also identified by her teachers as quite conflictual and aggressive. The teachers had several meetings with her mother to discuss the child's classroom misbehavior. The teachers were surprised that I obtained consent to observe and videotape this conflictual child due to the sensitivity of the topic for her family. The only caveat to gaining the mother's trust and permission to observe the child was that my work be applied to benefit others and not simply for the sake of research. Another child was involved in many conflicts (i.e., n = 16 over the observation period); it happened to be a boy from Class A(i.e. the younger class) who was also identified by his teachers as quite conflictual and aggressive. This preschooler demonstrated much emotional and behavioral frustration probably due to his lack of English proficiency.

Based on the results of a SPSS frequency analysis, almost all of the conflicts revolved around rules and regulations (i.e. social order conflicts; see table 5) – I suppose that Durkheim (e.g., 1925/1973) was correct to argue for the importance of rules. Children remembered the importance of class rules and reminded each other of this when there was lack of adherence to the rules. These preschoolers often argued when their "fair share" was violated. Students from the older class (i.e., Class B) were responsible for more than half of the social order conflicts. In line with the earlier research (e.g. Killen & Turiel, 1991), possession and distribution of objects was indeed quite important to the preschoolers as well; this conflict type was almost equally split

between the classes. One of the most surprising findings was the complete lack of 'psychological or verbal harm' during free-play – there were no "poopy-heads" in the class. Children from younger class were much more likely to hit other children as compared to members of the older class. The finding that younger children were more physically aggressive was consistent with earlier research and my hypothesis. Fortunately, this aggressive trend did not hold across time. When children's class was considered by itself, two- and three-year-olds were almost four times more likely to behave in physically aggressive ways than the older children (i.e. from Class B). It appears that by around four years-of-age, most of these preschoolers refrained from using their bodies as "weapons."

The studies reported in the literature review consistently reveal that with time and experience, children develop their social skills and especially self-regulation. Different issues became more important to the children over the observation period. One of the most interesting findings was the decrease of conflicts over objects across time (see table 6). Specifically, conflicts over objects decreased by observation time 3 regardless of children's class affiliation (and thus age). Given the prevalence and importance of this conflict type, I was curious as to whether there were differences between the classes. Although the total number of conflicts revolving around distribution of objects in Class A remained rather constant, the amount of these conflicts in Class B significantly decreased across time, indicating the growth of the ability to share objects with others accounted for the trend to be generous. In other words, from observation at time 1 through 3, the likelihood of object distribution problems decreased particularly with three- and four-year-olds. Over the observation period, older children (i.e., those from Class B) significantly paid less attention to the importance of object sharing as a reason for conflict. Arguments over play ideas between the two classes (i.e., Class A vs. B) revealed a modest trend. In concurrence with my

hypothesis, older children were more likely than their younger peers to quarrel over who plays what role and how during the given period of observation time. Older children were thus more capable of the most advanced and appropriate conflict interaction. However, I did not find an increase in play ideas conflicts across time. Furthermore, there was a tendency for the older children to have engaged in more overall conflicts than their younger cohort regardless of class or time.

Based on analyses, advanced conflicts such as over play ideas were most likely to be associated with complex play (see table 7). In other words, play was more complex when conflicts were about play ideas and vice versa. Play ideas and disputes over objects occurred more often during social peer play (i.e., associative and cooperative play) than during parallel play (see table 9). Children who had dilemmas about play ideas and distribution of resources engaged in more socially complex interactions (see table 9). As a whole, play complexity and peer play styles appear to be two key variables associated with various types of conflicts.

Although my focus was not on play activity per se, it was explored to better understand how conflicts and conflict resolution strategies covaried with self-regulation given the theoretical position that play leads to greater control of behavior. Within the observation period, preschoolers engaged in conflicts during a variety of play and peer play types without much change across time. It is probable that six months was not enough time to witness development of play as was expected. Play quality did not significantly change over the observation period or between classes. By itself, peer play interactions did not change based on age. However, the interaction of time and class revealed a marginal trend for an increase in more social play activity. Specifically, by the third observation, there was significantly more sophisticated peer play occurring in the older class as compared to the younger class. Thus, older children were generally more socially adept in play

situations after months of observations. Although older children were expected to have engaged in more complex peer interactions, younger children were also hypothesized to have developed this greater peer play capacity across time. The finding was counter to the expected outcome that both classes of children would have engaged in more social peer interactions across time.

Children's play was often complicated: involving several partners, many of whom had distinct intentions, which in turn was frequently associated with conflicts. Fantasy play was evidently the most common play level in which conflicts occurred (see table 2). Freud, Vygotsky, and more recently Nicolopoulou (e.g. 1993) all emphasized the importance of children's fantasy (or make-believe) play. At least during conflicts, sociodramatic play (which was the most advanced type) was quite rare even for the older children (i.e. Class B); this sophisticated play quality was not observed in the younger cohort (i.e. Class A). I hypothesized and found that most of the conflicts occurred during more advanced play; albeit that the most advanced play(i.e. sociodramatic play) was not found to foster conflicts, most likely due to its overall infrequent rate. Most conflicts occurred during associative and parallel peer interactions (see table 3). In contrast to my hypothesis, the more basic types of peer interactions provided a more fruitful ground for conflicts. Cooperative play was seldom practiced; though when cooperative play did occur, it rarely was associated with conflicts. Interestingly, cooperative play was almost equally distributed between the classes. As a whole, most conflicts emerged during fantasy play, and associative and parallel peer interactions.

Teachers usually observed play interactions and occasionally played with the children (see table 4). In large part, the lack of variance in teacher play involvement may have skewed the results. Over the observation period, teachers became significantly more engaged with children's play across time during conflicts. This result was quite surprising since I expected teachers to have

been less involved in play across the observation period — allowing the children greater space to play with their peers free from teacher interference. Closer analyses of teacher play involvement revealed no differences between Classes A and B across time; although, I certainly expected many differences between the two age-based classes. Understandably, teacher's play involvement was greatest during physical harm conflicts while distribution over objects followed as the second most likely conflict to elicit adult involvement (see table 10); this finding supports previous research (e.g. Killen & Turiel, 1991). Teachers were least likely to be involved in children's play during conflict episodes involving play ideas. That is, those children who engaged in the most sophisticated type of conflict were least likely to have teachers involved in their play. In line with Vygotsky's ZPD notion, it appears as if teachers were most involved when they thought they were most needed (e.g., during physical harm conflicts); conversely, they were least involved when least needed – a strategy conducive for effective development of children's self-regulation. Nonetheless, teachers were generally more involved in children's play across time regardless of conflict issues (see table 11).

Interestingly, preschoolers who engaged in sophisticated play were more likely to have sought help from the teacher regardless of the observation period. However, teachers were neither more nor less likely to have resolved conflicts during complex play. Contrary to my hypothesis, although there was a trend for greater adult conflict intervention during parallel play, teachers were surprisingly less likely to have helped resolve the conflicts across time as peer interactions became more social (see table 20). Socially involved peer play perhaps motivated teachers to allow children more freedom during conflictual play events. It seems that teachers allowed more socially adept players greater opportunity to resolve conflicts on their own. Over the course of observations, instances of seeking help significantly increased though not as a function of peer

play complexity. Regardless of their age (as based on their classroom affiliation), preschoolers were more likely to seek assistance from a teacher to resolve conflicts over the observation period than implement any other conflict resolution strategy. It is possible that, across time, children came to trust perhaps a specific teacher, and actually asked for help during conflictual play episodes as a means of settling the matter. Contrary to expectations, teachers were in fact more likely to also have dominated the conflict resolution by the time of final observations. Hence, children as a whole were more likely to seek and receive help from a teacher by the end of the observations than at the beginning. One substantial difference between the classes was revealed for conflict resolution: teachers in the younger class (i.e. Class A) were over ten times more likely to have largely resolved conflicts as compared to the older class (i.e. Class B). As expected, younger children's conflicts were more regulated by teachers than were those of older children; although I expected that teacher control would have decreased across time in each class, the teachers in fact remained quite steady at resolving and observing conflicts over this period.

Conflicts were generally resolved either by a teacher, children, or both. Teachers infrequently dominated the conflict resolution attempts; teacher CR occurred a handful of times (8 %; see table 12) – almost all of which were during Class A free-play. Although unexpected, it was quite encouraging to witness teachers in large part allowing children the space and time needed to resolve conflicts before intervention; moreover, teachers commonly allowed the preschoolers to generate and implement their own conflict solutions. Teacher conflict resolution strategies were predominantly associated with an increase in the likelihood of engaging in sophisticated play (such as fantasy and sociodramatic play; see table 14). Surprisingly, preschoolers who engaged in complex play types were significantly more likely to seek the adult's help than to solely resolve conflicts on their own. Additionally, teachers were involved in play as observers when the

children mostly sought help and/or resorted to hostile conflict resolution strategies – both of which make sense (see table 21). Conversely, teachers were least likely to be involved in play when preschoolers utilized prosocial conflict resolution strategies. Or, thought of differently, when teachers were not observing play, children were more likely to use prosocial strategies; whereas when teachers were involved in play, directly or as an observer, children were more likely to have used hostile conflict resolution strategies. In my view and based on my observations, the key to self-regulation is to provide children with the proper tools to resolve disputes and then allow them to apply the tools. From a Vygotskian perspective, initially a parent or teacher should guide such activity, but with experience, children can do so on their own.

As another measure of self-control, the SCRS scores reflected individual children's SC (see Appendix A) instead of group self-control. It should be noted that the questions on the SCRS were geared towards teacher's perception of individual children's SC, patience, and the combination of these two variables over the past month (see Appendix A). At first, I was uncertain if both types of approaches (i.e. group and also individual assessments) could be used in the same study and consequently compare the findings. From a theoretical standpoint, both approaches can be employed to study internalization of societal standards and behaviors to evaluateself -regulation activity; they both take into account that self-restraint is a distributed process, understood as activity that occurs within a specific setting distributed over particular groups. Moreover, teacher's understanding of individual self-regulation is materialized as children play within a social milieu; hence, teacher's are more precisely judging self-regulation as a function of the group and not simply the individual. Thus, although the measures appear different on the surface, they are actually quite similar.

Children's self-control scores (from SCRS) were evenly distributed across the board, and at both data collection times. Although I opted out of classifying individuals because the focus was on group activity, the children could have easily been grouped by Self-Control Rating Scale scores, into low, middle, and high SR clusters, for example. Contrary to my hypothesis, the change between time 1 and time 2 on the SCRS indicated that on average, scores increased (instead of decreased) by almost five points (see table 26). Preschooler's SCRS scores from Class B increased by just over a couple of points, while the younger children (i.e. from Class A) increased by just over nine points. Nevertheless, both teachers rated their students as less self-controlled by time 2 on SCRS, than they did for time 1. The increase in the SCRS scores across time was not significant for either Class A or B; there were however significant differences on SCRS between the classes across time. Interestingly though not surprisingly, from both SCRS assessments, the lowest SCRS scores from Class A came from the same child; for Class B, the lowest scores also came from the same child, while the highest scores came from the same child.

Since possible significant differences were found between the two classes, I explored if there were variableswhich predicted SCRS scores. Given the minimal differences between the SCRS results, coupled with the argument that teachers were much better acquainted with the children by the time when the second set of questionnaires was given out (i.e. SCRS 2), SCRS 2 scores were used to assess several factors which were hypothesized to be associated (while I controlled for SCRS 1). I accordingly expected that teachers' perceptions would be more accurate by the second SCRS than the first given the greater time of rapport that was built by six months of daily interactions.

The dominant conflict resolution strategies were hypothesized to have strongly correlated to the Self-Control Rating Scale 2 scores given that they were both measuring SC. Quite

surprisingly, the results indicated that the dominant CRS and the SCRS 2 scores were not related. Perhaps the issue of group versus individual self-regulation could account for the lack of any strong correlation. In addition, contrary to my hypothesis, the total number of conflicts that children were involved in did not relate to their SCRS 2 scores. Put differently, those children who were highly conflictual were not necessarily judged as such by teachers — at least they were not assessed as highly impulsive and poorly self-controlled. It may be the case that teachers judged children self-regulation abilities relative to the types of conflicts that they engaged in instead of the quantity of conflicts. There was however a main effect for SCRS 2 scores as a function of the conflict types (see table 28). In other words, the types of conflicts that occurred during play were related to how teachers perceived their students on measures of SC and patience (i.e. SCRS 2). Comparing the various types of conflicts revealed that play ideas issues was more related to SCRS 2 than the other conflict types, including objects distribution, physical harm, and social order (see table 28). Those children who were rated as least self-controlled commonly fought over play ideas as compared to other conflict types. Quite surprisingly, children who thus argued over the most complex conflict type were judged as most uncontrolled. For the time being, I can only speculate that children who argued over play ideas were also most socially involved in play and judged to be more impulsive and argumentative.

Given the quite strong correlation of SCRS 1 to SCRS 2 ($r = 0.91$), it became apparent that teachers impression of children's behaviors stayed rather constant and was not affected by play complexity over the time span. I found that children who were judged by their teacher as more self-controlled on SCRS 1 were less likely to have had teachers involved in their play by SCRS 2 (see table 27). I was quite curious as to why teachers would have been less involved across time for the more self-controlled preschoolers. For now, I can only speculate that teachers were less

involved in the play of the children who they thought would play peacefully on their own and thus would not need a teacher's guidance to regulate the activity.

The Self-Control Rating Scale results revealed that both teachers judged their students as generally well self-regulated, especially the children from Class B (based on relatively low scores). Looking at class differences on SCRS exposed strong differences: mean scores for students in Class B (for both times 1 and 2) were almost half of the scores that were given for children in Class A. Given such a Self-Control Rating Scale score discrepancy between the classes, it seems that the teacher from Class A was more stringent in her perception of her preschoolers' self-control abilities, and/or the teacher from Class B was perhaps too lenient. Note that steps were taken to ensure that both teachers understood what I was investigating and how to answer the questions on the battery as objectively as possible.

Based on the pronounced differences on Self-Control Rating Scale scores between the classes, I became quite curious as to whether the two teachers themselves as evaluators were statistically different from one another with respect to their perceptions of their students' behavior. In order to competently establish whether the teachers were rating the students objectively, each class was further divided up by the children's age. It turned out that the teacher from Class A was relatively consistent on her overall SCRS scoring for her students as less self-regulated. She continued to judge them as more uncontrolled across time. The teacher from Class B in contrast scored the younger children in her class as more self-controlled across time on the SCRS as compared to the older children within the same class who were rated differently – the older children in Class B were conversely judged as more impulsive and therefore less self-regulated than their younger classmates. The possible SCRS score disparity for Class B (i.e. older versus younger children scores) could be quite meaningful. This finding seems to suggest that the teacher

from Class B was not consistent in her perceptions of the older children as compared to the younger ones (with the same class). Moreover, this possible lack of intra-reliability (i.e., reliability within the same teacher's assessment of her students') may imply an "expectancy effect." If this expectancy effect was indeed the case, then the teacher from Class B considerably anticipated greater self-regulation from the older children (within Class B), and therefore judged them as having lower self-control and patience abilities as compared to the other children. While it is perhaps appropriate to anticipate greater self-regulation by the older children in general, it is unacceptable to act upon the belief whereby it led to actualizing her judgment. Expectancy may have led to varied biased treatment of her preschoolers. Lane (1960) argued that expectancy transpires when a teacher in this case, probably without intention to misrepresentoutcomes , associates what she believes she sees and sometimes what she wants to see, with what actually happens (cf. McComas & Moore, 2001). Perhaps the best way to address this concern is to inform the biased adultof its possibility and consequences. An additional SCRS 2 finding was the difference between the classes; the results indicated that younger than average children were judged as significantly more self-controlled than their older counterparts.

Play was considered of foremost importance in understanding self-regulation since it was the forum for conflicts and conflict resolution strategies. Self-Control Rating Scale 2 scores were found not to be associated with play complexity. Preschoolers who engaged in complex play were no more likely to have received high or low scores on the SCRS 2. Unexpectedly, those children who engaged in sophisticated and social peer play (especially during associative and cooperative play) were more likely to have received higher scores on the second set of Self-Control Rating Scale questionnaires – thus they were perceived as less self-controlled. Hence, those children who played associatively and cooperatively were rated as most impulsive and least self-controlled on

SCRS 2. Teachers were expected to have judged more socially skilled players as more self-controlled given that they were better able to work well with others and have demonstrated greater levels of cooperation. A major concern and question is why were children who often played in social interactions rated as less self-controlled than those who played on their own. I do not have analyses which could answer this question. However, it may be reasonable to suggest that children who interacted frequently with others got into more conflicts and in turn were judged as less self-regulated – these children had more opportunity for conflict given the greater time that they spent in social play. Children who in contrast rarely played with others were less likely to have had confrontations. Social peer play requires, on some level, sharing and coordinating activities – this ability should be recognized as quite an advanced self-controlled accomplishment.

It was surprisingthat children's age by itselfdid not lead to a difference on the Self-Control Rating Scale 2 scores; however, these scores were unexpectedly significantlyassociated with children's sex. The interaction of age and sex was also significant in explaining SCRS 2 scores. Specifically, older girls' Self-Control Rating Scale 2 scores were more strongly related to conflict types than younger girls and boys, as well as older boys. More interestingly, as compared to boys, older girls within the same class as a whole and regardless of the total number of conflicts that they engaged in were judged as less self-controlled. As compared to girls, younger boys within the same class regardless of the total number of conflicts that they engaged in were judged as less self-controlled. Therefore, it appears that teachers, as whole, judged younger girls as more self-controlled than both younger boys and older girls. Older girls were perceived as more impatient and less self-controlled than both older boys and younger girls. This analysis showed that the amount of conflicts that children were involved in was not as important in predicting the level of self-control (on the SCRS 2) as was age and sex. Teachers and parents should be

considerate and careful about biased expectations and implementations based on children's age and sex; they should instead base judgments more on situational circumstances of play, conflict, and conflict resolution strategies.

The conflict activity was considered to be a function of the play context. In the present study, children were observed during free-play in three contexts. The size of the room was thought to restrict the play choices – that is, smaller places may confine play and peer interactions; lack of space may in turn lead children to misbehave for a number of possible reasons. In addition, too many or too few toys available may contribute to conflictsbecause too many toys take up much space or, children may quarrel in order to obtain scare resources. In other words, children may engage in more conflicts because smaller spaces may limit toy accessibility and have in turn increased the likelihood of arguing over the toys. The blockroom was the smallest room in the observed center, while the playroom was the largest – both rooms incidentally had only one entrance / exit door (see Appendix E). Most of the conflicts occurred while children played in the playroom even though the majority of the children's actual play time was spent in the classroom. Given the importance of the context, I inspected space differences associated with conflicts, and also with conflict resolution strategies, though it was not the main focus for this investigation. Although the context was not found to be associated with neither conflict type, nor the number of conflicts that preschoolers were involved in, nor the dominant conflict resolution strategies, the analyses provides the field with another consideration in understanding self-regulation. Additionally, there were no differences with children's Self-Control Rating Scale 2 scores based the play contexts. Children who received higher scores on the SCRS 2 were equally as likely to have engaged in conflicts in any one of the play areas; atleast statistically, space size does not matter.

American poet Ralph Waldo Emerson wrote that "the most dangerous thing is illusion." In a culture preoccupied with individualism, one realization that I came to during the research process was that the concept of an isolated 'self' is an illusion. There are no "real" selves, ones that are isolated from others. In order to understand 'self-regulation', one has to understand the activities in a particular context, which is always a function of the social world. The exhibited self-regulation is an artifact of numerous variables. The self is continuously transforming due to continuous activity and interactions with and within the world and other people. Children's self-regulatory abilities develop as they try to regulate themselves and others during play in order to maintain play while conforming to the pressures of rules that play entails. Hence, self-regulation is a distributed process and product of the activity. If the English language would allow, 'self-regulation' should really be understood as 'selves-regulation.' I believe that the findings here could be extended to other preschool settings. One goal of research is of course to generalize findings to better understand development; however, to more fully value self-regulation, we should consider the many factors that contributed to children's activity.

6.1 Future directions

This type of exploratory study should continue if we are to understand SR development during preschoolers' free-play. As a standard in psychology, a greater number of conflict and CR episodes should be observed and explored in order to confirm reliability and validity of not only the methods employed here, but also factors that contribute to self-regulation. In addition, applying this method in research with diverse populations would allow for extended generalization of findings. Pursuing research focused on children-in-conflict activity-in-context episodes as the unit-of-analysis in future studies guided by the sociocultural and activity approaches towards appreciating the process of self-regulation development. Studying these variables over a longer period of time will facilitate in depth understanding of between and especially within self-regulation transformation.

It would be advantageous to focus more on following group conflicts and tracking self-regulation change across time. In this study I followed children within a group; the groups changed frequently. However, quite often group members (perhaps friends) played with each other on repeated occasions. Had I followed repeated group conflicts over a period of time, I could have compared how self-regulation developed as a function of the group. With many more observations of conflicts within group play, trends may emerge revealing greater insight into the development of self-regulation across time. Along the same lines, if I followed specific events that led up to conflicts and then conflict resolution strategies using sequential analyses, I could have deciphered a pattern of how self-regulation develops. Teachers and parents can certainly benefit from knowing what to expect and the factors that may help foster greater self-regulation.

It would also be advantageous to examine how specific tools (e.g., classroom rules, speech) in an environment are used to foster self-regulation. Vygotsky and his followers placed great

emphasis on the role of speech in mediating self-regulation. Recent research has confirmed its role during conflict and play. Certainly, further research should incorporate a coding scheme that would allow assessment of verbal behavior during conflicts. An examination of how speech is internalized, applied, and change over time during conflicts could highlight yet another dimension of SR.

Statistically, it would be beneficial to re-arrange the conflict and conflict resolution strategies codes on a continuous scale thus allowing us to better understand the self-regulation degree. Such an organization should facilitate analyses, but also has important theoretical implications. Perhaps such codes could be defended as more or less socially appropriate on a continuum scale which would in turn allow for better appreciation of self-regulation development. More sophisticated analyses can be performed when the dependent variable is continuously and hierarchically organized.

Although many interesting findings were obtained in this study, many issues have remained unresolved. In part, this was due to a lack of variability within the data, as well as the limited quantity of data. A far more serious concern was the limitations of available statistical tools for analyses. The available statistics have limited the possibility of answering questions which really tackle the crux of self-regulation research via the CHAT system. Although some insight into self-regulation was provided, I did not fully deal with the complexities of capturing 'activity in motion.' These shortcomings have encouraged me to continue this line of research, to resolve many more self-regulation questions.

In the Reagan's "Eureka speech" (a Commencement Address on May 9, 1982 to members of Eureka College), he stated that "peace is not absence of conflict, it is the ability to handle conflict by peaceful means." This speech is often heralded as the beginning of the end of the Cold

War. Both Reagan and Constructivists psychologists (together at last) recognized that conflicts should not be avoided, given their importance; rather, conflicts should be resolved prosocially if we are to ever attain peace. These preschoolers have a great head start at peace. As responsible educators, we should therefore allow children to engage in conflicts and provide them with the necessary tools to resolve conflicts prosocially.

Notes

1. Email address correspondence to: BPolnariev@hotmail.com
2. The term 'I' was used throughout this dissertation. However, the work was really a collaborative effort with my advisors. Thus, 'we' would have been more an appropriate term for discussing efforts made for this paper, especially given the approach.

Appendix A — Self-Control

Items from the **Self-Control Rating Scale** (SCRS) – Questionnaire

1. When the child promises to do something, can you count on him or her to do it?
2. Does the child butt into games or activities even when he or she has not been invited?
3. Can the child deliberately calm down when he or she is excited or all wound up?
4. Is the quality of the child's work all about the same or does it vary a lot?
5. Does the child work for long-range goals?
6. When the child asks a question, does he or she wait for an answer, or jump to something else (e.g., a new question) before waiting for an answer?
7. Does the child interrupt inappropriately in conversations with peers, or wait his or her turn to speak?
8. Does the child stick to what he or she is doing until he or she is finished with it?
9. Does the child follow the instructions of responsible adults?
10. Does the child have to have everything right away?
11. When the child has to wait in line, does he or she do so patiently?
12. Does the child sit still?
13. Can the child follow suggestions of others in group projects, or does he or she insist on imposing his or her own ideas?
14. Does the child have to be reminded several times to do something before he or she does it?
15. When reprimanded, does the child answer back inappropriately?
16. Is the child accident prone?
17. Does the child neglect or forget regular chores or tasks?
18. Are there days when the child seems incapable of settling down to work?
19. Would the child more likely grab a smaller toy today or wait for a larger toy tomorrow, if given the choice?
20. Does the child grab for the belongings of others?
21. Does the child bother others when they're trying to do things?
22. Does the child break basic rules?
23. Does the child watch where he or she is going?
24. In answering questions, does the child give one thoughtful answer or blurt out several answers all at once?
25. Is the child easily distracted from his or her work or chores?
26. Would you describe this child more as careful or careless?
27. Does the child play well with peers (follows rules, waits turn, cooperates)?
28. Does the child jump or switch from activity to activity rather than sticking to one thing at a time?
29. If a task is at first too difficult for the child, will he or she get frustrated and quit, or first seek help with the problem?
30. Does the child disrupt games?
31. Does the child think before he or she acts?
32. If the child paid more attention to his or her work, do you think he or she would do much better than at present?
33. Does the child do too many things at once, or does he or she concentrate on one thing at a time?

†Instructions for teachers on the SCRS read as follows:

Read each question carefully. On the left of each question, rate your child as honestly as possible according based on her or his behavior within this past month. "The underlined 4 represents where the average child would fall on this item. Please do not hesitate to use the entire range of possible ratings. Please answer all of the questions as best as you can!

1 – indicates **maximum** self-control (that is, always controlled) 2 – usually 3 – sometimes 4 – neutral or average 5 – seldom 6 – usually not 7 – indicates **maximum** amount of impulsivity (that is, never controlled)

±Parts of the instructions were modified from the original coding manual to better ensure comprehension and completion. See Kendall and Wilcox (1979) for a full review of the coding system.

Appendix B – Conflict Resolution Strategies (CRS)

❶ **Prosocial** - includes any verbalizations or behaviors that would benefit others as well as the *actor* (Staub, 1978). Prosocial behaviors are understood in the literature as both positive and friendly attitudes. *Prosocial behavior* is understood as a pattern of "voluntary actions that are intended to help or benefit another individual or group of individuals" (Eisenberg & Mussen, 1989, p. 3). This definition refers to consequences of an actor's actions instead of the impetus behind those actions. These behaviors are culturally influenced and include a broad range of activities: cooperating, comforting, helping, negotiating, saving, and sharing. Children may either assert or question the conflict activity. Prosocial activity is the ideal CR and would display the highest level of SR. [Note that *prosocial* acts are qualitatively different than *altruistic ones* in the restrictive sense that only others profit from altruistic voluntary verbalizations / behavior. Such action is completely done for the other person].

Examples:
+ + + (*V*): Preston tells Al that as soon as he finishes riding the bike, that Alcan have it.
+ + + (*NV*): Preston gives Al the bike (that he wanted) when he finished riding it.

❷ **Appeal to Adult / Authority** - the child seeks the help of an authority figure (usually a teacher or aide) to help clear up the problem by explicitly asking for her/his help or by grabbing the adult's body part (usually the hand, arm, or leg) along with a pulling them towards the conflictual context. This approach is often used when the child realizes the possible power of the authority figure in amending the conflictual situation. This CRS demonstrates cognitive and social sophistication.

Examples:
(*V*): Apollo tells on Maria when he turns to Ms. Education & states "Look at what s/he's doing?"
(NV): Apollo comes up to Ms. Education and points at Maria's activity. He further pulls the teacher's hand and escorts her to the table where he shared the activity with Maria.

❸ **Passive / Unresolved** - the child is not active in the CR process. S/he shies away from expressing her/ his thoughts or soft-spoken mumbling. Behaviorally, the child may ignore, distance her-/ him-self, or even leave the situation. Ultimately, there is no final resolution. If a child restricted their actions in order not harm another, or to maintain a friendship or an activity, this CRS would reveals SR. Culture certainly plays a large role here. In our culture, we encourage individuals to speak up and "defend" themselves.

Examples:
(*V*): Pascal remains quiet after having had his drawing ruined by a larger boy.
(*NV*): Pascal at first pretends like nothing has happened, but soon thereafter leaves his table after having had his drawing ruined by a larger boy.

❹ **Hostile / Coercive** - its qualities are identified as contrary of prosocial behaviors – such that they have a negative expressive bend. The child that utilized this verbal strategy may have tried to cajole, tease, swear, threaten, or yell for example at another child (or at her/his activity) with

seemingly antagonistic intentionality. A behavioral strategy may be to pull, shove, hit, or kick for example another child (or her/his activity) with seemingly antagonistic intentionality. Anger is usually displayed during a hostile CRS. Hostile behavior is not limited to aggression but rather may include it.

Examples:
(*V*): Holly threatens Courtney that if she does not give him the book, then they can not be best friends.
(*NV)*: Holly pushesCourtney , and then throws her book out the window.

❺ **Adult / Authority Appeal / intervention** - the adult / authority (usually the teacher) intervenes in the conflict without having been asked for assistance by the child. There are certainly many reasons for intervention. From the perspective of a teacher, if the conflict was resolved for the children, then there would have been less of a chance of harm and greater opportunity that play and friendships would have continued. Ultimately, if the conflict is resolved for them, then it is one less immediate issue that teachers should concern themselves with and would allow them continue to deal with the countless other daily issues.

Examples:
(*V*): When the kids crashed their bikes, the teacher immediately tries to settle the potential conflict by telling each one of them that "it was an accident, and she did not mean to hit your bike."
(*NV*): When the kids crashed their bikes, the teacher immediately tries to settle the potential conflict by pulling each child to the side and preventing them from resolving the conflict on their own.

❻ ++**Peer intervention –** a child intervenes as a third party and helps to resolve the conflict without a request for assistance. This includes both verbal and behavioral actions. This CRS rarely occurs; if done intentionally, this act would have demonstrated advanced SR on the part of the peer intervening since s/he has realized the dynamics of the conflict and intervened in order to continue the harmonious play and/or the friendship.

Examples:
(*V*): Peter notices that Jack and Jill are having a conflict over where the pretend train should travel. Peter says to them, "hey you guys, why don't you make two trains roads and have the two trains go through both tracks."
(*NV*): Peter notices that Jack and Jill are having a conflict over where the pretend train should travel. Peter physically takes the two trains and demonstrates to them that two tracks can be built and the two trains could use both paths.

++Peer intervention is unique to this coding scheme.
+++V = *Verbal*; NV = *Non Verbal* (i.e. Behavioral)
[see Chung & Asher, 1996 – for a full review of the coding system parts; also adapted from my Masters thesis, 2002]

Appendix B2 – Dominant CRS

-One general code was created from Appendix B1to indicate the overarching CRS that the children utilized. These codes indicated a greater frequency of occurrence of a resolution approach as compared to the other types within the same conflict episode. Thus, although several CRS may have co-occurred, if one type statistically dominated, then any of the codes (except for code 5) could have been chosen. The primary resolution type was considering as a whole, thus combining verbal and behavioral approaches into a single unit. A brief outline of each *dominant CRS* is provided below; however, the *CRS* are all defined in detail above (see Appendix B).

❶ (**Mostly**) **Prosocial –** children primarily engaged in positive and friendly CRS.

❷ (**Mostly**) **Seeks help** – children primarily engaged in searching for, and obtaining teacher assistance.

❸ (**Mostly**) **Passive** – children primarily left the conflict either unsettled or distanced themselves from the situation in order to avoid resolution.

❹ (**Mostly**) **Hostile** – children primarily engaged in mean and aggressive CRS.

❺ (**Mostly**) **Mixed** – children primarily engaged in two or more CRS in equal amounts. This would also indicate that teachers and children together, resolved the conflict.

———

❻ (**Mostly**) **Teacher CR -** the teacher resolved the conflict in large part, thus not allowing children a full chance to resolve the dispute on their own.

+++Dominant conflicts codes 1-5 are only looking at those solutions used by children. Note that teachers may be involved in any of the above strategies; however, if teachers dominated or were equally involved in the conflict resolution, the conflict was scored as *mostly teacher* CR (code 6).

++++Peer intervention occurred in only one conflict episode though was not the dominant CRS. As a result, this CRS was "lost" in this study though remains an important element of SR.

Appendix C — Conflict Types

Conflict Issues – refers to the nature of the dispute. Five categories were identified:

1. **Physical harm** – physically hurting another child, often done inadvertently (includes *hitting*, *biting*, *punching* – may be viewed as *aggression*)
2. **Distribution of resources** – clash over possession or accessibility to an object (includes *not sharing*, *turn taking, and ignoring others' use of space or materials*)
3. **Play ideas** – dispute over roles in play activity (includes *who will do what, when, where,* and/or *how*)
4. **Psychological harm** – verbal aggression (includes *name-calling* and *teasing*)
5. **Social order / Conventional issues** – disagreement over classroom rules (includes rules about running indoors, making too much noise, how to take turns, or cleaning up time and procedures)

These conflict types are arranged on a nominal scale following the order used by Chen (1998).

[Fully adapted from Chen, 1998 – for a full review of 'Conflict Types']

Appendix D — Play

CONTEXTUAL GROUP PLAY CODING SCHEME

Contextual Play variables
D1) **Type of Play**: {based on research by Parten, 1932; & Smilansky, 1968}
a) **Functional** – simple repetitive motoric actions (e.g., pouring water from container
to container over and over)
b) **Constructive** – creation with objects (e.g., cutting out clay with cookie cutter)
c) **Fantasy** – pretend, make-believe role playing (e.g., using a block as a telephone)
d) ††††††**Sociodramatic** – some level of initiating and engaging others in play, collaborating and coordinating play with partners, having the same goals during play, reciprocity, questioning and/or commenting on the activity, development of a story plot (or narrative), assignment of roles, creation of rules, adherence to rules, and demonstrating intersubjectivity
D2) **Adult Presence**: {based on research by Berk & Garvin, 1984}
a) **Uninvolved** – teacher(s) is not within hearing range of the children and is not
responsive to the children's activity
b) **Watcher / Observer** – teacher(s) is watching the children and judged to be close
enough to hear the children's verbalizations / assisting with and supporting the
children's activity, without directly participating or assuming a central role
c) **Direct Involvement** – teacher(s) engaged in interaction with the children and
assumes key position in activity
D3) **Peer Play Activity**: {based on research by Parten, 1932}
a) **Parallel** – children play near others with similar materials but no interaction
b) **Associative** – children are engaged in separate activities than others nearby but
interact with each other by exchanging toys and/or commenting on one another's
behaviors
c) **Cooperative** – actions are directed toward a common goal with intersubjectivity as central to the activity.

††††††*Sociodramatic* play was a novel variable in this scheme

[Appendix D was largely adapted from Krafft & Berk, 1998 – see for a full review of the coding system]

Appendix E — Context of play

❶ **Blockroom** – entire episode occurred in a separate room devoted to blocks; with respect to size it's the smallest of the three rooms. There was only one entrance / exit with two closets. The room housed an unused computer.

❷ **Classroom** – entire episode occurred in a separate room primarily devoted to free-play, lunch, nap, reading, and usually morning drop-off and occasionally afternoon pick-up. The colorful room included desks and chairs, many books, a great assortment of dramatic play tools, a sand or water table (depending on the time of year), many pictures and paintings that were created by the children, an easel with paint, several plants, a stereo with many nursery songs, among other artifacts. There was also only one entrance / exit. Note that there were two classrooms (one for Class A and one for Class B).

❸ **Playroom** – entire episode occurred in a separate room, much larger than the above two rooms; more space was devoted here for free-play. The room included several mats, a basketball hoop, stairs, and a slide for gross motor development. Again, there was also only one entrance / exit.

Appendix F — Time of observation

❶ **Morning shift** – videotaping occurred during the hours of 9 – 12:45 p.m.

❷ **Afternoon shift** – videotaping occurred during the hours of 3 – 5:45 p.m.

Appendix G — Culture (as identified by the teacher)

❶ **White** – includes only those children who spoke only English

❷ **European** – includes those children who spoke English and a European language

❸ **Spanish** – includes those children who spoke English and Spanish

❹ **Asian** – includes those children who spoke English and an Asian language

❺ **Other / mixed** – includes those children who either did not fit into any of the above categories, and/or those that came from two or more of the above culture categories

References

Allessandri, S. M. (1992). Attention, play, and social behavior in ADHD preschoolers. *Journal of Abnormal Child Psychology, 20*, 289-302

The American Heritage® Dictionary of the English Language: 4th (2000). Houghton Mifflin Company. http://www.bartleby.com/61/29/C0562900.html (Retrieved 1/24/05).

Antonio, K. & Beirlant, J. (2005, March 14). *Applications of Generalized Linear Mixed Models in Actuarial Statistics.* http://www.econ.kuleuven.be/actuarial.science/pdfs/GLMM.pdf (Retrieved 11/25/05).

Arievitch, I., & Stetsenko, A. (1997). Constructing and deconstructing the self: Comparing Post-Vygotskian and discourse-based versions of social constructionism. *Mind, Culture, and Activity, 4,* 159-172.

Aron, A., Aron, E. N., & Coups, E. J. (2005). Stat*istics for the Behavioral and Social Sciences: A Brief Course*. 3rd Ed. Upper Saddle River, NJ: Pearson/ Prentice Hall.

Arsenio, W. F., & Lover, A. (1997). Emotions, conflicts, and aggression during preschoolers' freeplay. *British Journal of Developmental Psychology, 15*, 531-542.

Arsenio, W., & Killen, M. (1996). Preschoolers' conflict-related emotions during peer disputes. *Early Education & Development, 7, 43-57.*

Astington, J. (1993). *The child's discovery of the mind*. Cambridge, MA: Harvard University Press.

Aureli, F., & de Waal, F. B. M. (2000). *Natural conflict resolution*. Berkeley, CA: University of California Press.

Averill, J. R. (1982). *Anger and aggression: An essay on emotion*. NY: Springer.

Babcock, B. (1992). Artifact. In R. Bauman (Ed.), *Folklore, cultural performances, and popular entertainments*: *A communications-centered handbook* (pp. 204-216). NY: Oxford University Press.

Bakeman, R., & Brownlee, J. R. (1982). Social rules governing object conflicts in toddlers and preschoolers. In K. H. Rubin & H. S. Ross (eds.), *Peer relations and social skills in childhood* (pp.99-111). NY: Springer.

Bakhtin, M. M. (1981). *The Dialogic Imagination*. Austin: University of Texas Press.

Barker, R. G., & Wright, H. F. (1955). Midwest and its children. NY: Harper & Row.

Barkley, R. A. (1997). *ADHD and the Nature of Self-Control.* NY: The Guilford Press.

Baumeister, R. F., & Mick, D. G. (2002). Yielding to temptation: Self-control failure, impulsive purchasing, and consumer behavior. *Journal of Consumer Research, 28*, 670-677.

Bearison, D. J., Dorval, B., LeBlanc, G., Sadow, A., & Plesa, D. (2002). *Collaborative cognition*: *Children negotiating ways of knowing.* Westport, CN: Greenwood Press.

Bedny, G. Z., Seglin, M. H. & Meister, D. (2000). Activity Theory: History, Research and Application. *Theoretical Issues in Ergonomics Science, 1*, 168-206.

Berk, L. E. (1994). Vygotsky's theory: The importance of make-believe play. *Young Children, November,* 30-38

Berk, L. E., & Winsler, A. (1995). *Scaffolding children's learning*: *Vygotsky & early childhood education.* Washington, DC: NAEYC.

Blair, C. (2002). School readiness: Integrating cognition & emotion in a neurobiological conceptualization of children's functioning at school entry. *American Psychologist, 57,* 111-127.

Boekaerts, M. (1997). Self-regulated learning: A new concept embraced by researchers, policy makers, educators, teachers, and students. *Learning and Instruction, 7,* 161-186.

Boekaerts, M., Pintrich, P. R., & Zeidner, M. (2000). Self-regulation: An introduction overview. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation*: *Research, theory, and applications.* NY: Guilford Press.

Boggs, S. T. (1978). The development of verbal disputing in part-Hawaiian children. *Language in Society, 7*, 325-344.

Boivin, M., & Begin, G. (1989). Peer status and self-perception among early elementary school children: The case of the rejected children. *Child Development, 60,* 591-596.

Bronson, M. B. (2000). *Self regulation in early childhood: Nature and Nurture.* NY: Guilford.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*, 513-530.

Brown, A. L., & Campione, J. C. (1994). Guided discovery in a community of learners. In K. McGilly (Ed.), *Culture, schooling, & psychological development* (pp.136-170). Hillsdale, NJ: Erlbaum.

Campbell, S. B. (2002). *Behavior problems in preschool children: Clinical and Developmental Issues* (2nd ed.) NY: Guilford Press.

Caplan, M., Vespo, J., Pedersen, J., & Hay, D. F. (1991). Conflict and its Resolution in small groups of One- and Two-year-olds. *Child Development, 62,* 1513-1524.

Carlson, E. A., & Sroufe, L. A. (1995). The contribution of attachment theory to developmental psychopathology. In D. Cicchetti & D. Cohen (Eds.) *Developmental processes and psychopathology: Vol. I , Theoretical perspectives and methodological approaches* (pp. 581-617). NY: Cambridge University.

Case, R. (1985). *Intellectual development: from birth to adulthood*. Orlando, FL: Academic Press.

Cavell, T. A. (1990). Social adjustment, social performance and social skills: A tri-component model of social competence. *Journal of Clinical Child Psychology, 19*, 111-122.

Chapman, M., & McBride, M. L. (1992). The education of reason: Cognitive conflict and its role in intellectual development. In C. U. Shantz & W. W. Hartup (Eds.), *Conflict in child and adolescent development* (pp. 36-69). NY: Cambridge University Press.

Chen, D. W. (1998). *Teacher interventions in the peer conflicts of preschool children*: *The effects of children's age and conflict behaviors*. (Unpublished Dissertation). University of Maryland.

Chen, D. W., Fein, G. G., Killen, M., & Tam, H-P. (2001). Peer conflicts of preschool children. *Early Education and Development, 12,* 523-544.

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20,* 37-46.

Coie, J. D., Dodge, K. A., & Kupersmidt, J. B. (1990). Peer group behavior and social status. In S. R. Asher & J. D. Coie (Eds.), *Peer rejection in childhood* (pp. 17-59). NY: Cambridge University Press

Coie, J. D., & Dodge, K. A. (1998). Aggression and antisocial behavior. In W. Damon (Series Ed.) & N. Eisenberg (Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (5th ed., pp. 780-840). NY: Wiley.

Cole, M. (1996). *Cultural Psychology: A once and future discipline*. Cambridge, MA: Harvard University Press.

Connolly, J. A., & Doyle, A. B. (1984). Relations of social fantasy play to social competence in preschoolers. *Developmental Psychology, 20,* 797-806.

Cotton, K., & Conklin, N. F. (1989). *Research on early Childhood Education: topical Synthesis #3.* http://www.nwrel.org/scpd/sirs/3/topsyn3.html (Retrieved 10/26/04).

Crane, D., & Tisak, M. (1995). Mixed-domain events: The influence of moral and conventional components on the development of social reasoning. *Early Education and Development, 6*, 169-179.

Crain, W. (2005). *Theories of Development: Concepts and Applications* (5th Eds.). Upper Saddle River, NJ: Pearson / Prentice Hall.

Crick, N. R., & Nelson, D. A. (2002). Relational and physical victimization within friendships: Nobody told me there'd be friends like these. *Journal of Abnormal Child Psychology, 30,* 599-607.

Dawe, H. (1934). An analysis of two hundred quarrels of preschool children. *Child Development, 5*, 139-157.

de Hann, D., & Singer, E. (2003). 'use' your words': a sociocultural approach to the teacher's role in the transition from physical to verbal strategies of resolving peer conflicts among toddlers. *Journal of Early Childhood Research, 1,* 95-109.

Denham, S. A. (1998). *Emotional development in young children*. NY: Guilford.

Deutch, M. (1973). *The resolution of conflict*: *Constructive and destructive process*. New Haven, CT: Yale University Press.

DeVries, R., & Zan, B. (1994). *Moral classroom, moral children*: *Creating a constructivist atmosphere in early education*. NY: Teachers College Press. http://tigger.uic.edu/~lnucci/MoralEd/articles/devrieschap4.html (Retrieved 12/14/04).

DeVries, R., & Zan, B. (1995). Constructing a constructivist classroom atmosphere. *Young Children. 51*, 4-14.

Dewey, J. (1997). *Experience and Education*. NY: Simon and Schuster. (Original work published 1938).

Diaz, R. M., & Berk, L.E. (1992). *Private speech: From social interaction to self-regulation* (Eds.). Laurence Erlbaum Ass. Hillsdale, NJ.

Diaz, R. M., Neal, C. J., & Amaya-Williams, M. (1990). The social origins of self-regulation. In L. C. Moll (ed), Vygotsky and Education: Instructional implications and applications of sociohistorical psychology. (pp. 127-154). NY: Cambridge University Press.

Dennis, T. A. (2001). *The self, views of the world, and the socialization of self-regulation*. (Unpublished Dissertation). The Pennsylvania State University, The Graduate School.

Dodge, K. A. (1983). Behavioral antecedents of peer social status. *Child Development, 54*, 1386-1399.

Dunn, J. (1987). The beginnings of moral understanding: Development in the second year. In J. Kagan & S. Lamb (Eds.), *The emergence of morality in young children* (pp. 91-112). Chicago, IL: The University of Chicago Press.

Durkheim, E. (1925/1973). *Moral Education*. NY: Free Press.

Eisenberg, A. R., & Garvey, C. (1981). Children's use of verbal strategies in resolving conflicts. *Discourse Processes, 4*, 149-170.

Eisenberg, N. (1990). Prosocial development in early and mid adolescence. In R. Montemayor, G. R. Adams, & T. P. Gullota (Eds.), *From childhood to adolescence*: *A transitional period? Advances in Adolescence* (Vol. 2, pp. 240-269). Newbury Park, CA: Sage.

Eisenberg, N., & Fabes, R. A. (1992). Emotion, regulation, the development of and social competence. In M. S. Clark (Ed.), *Review of personality and social psychology*: *Vol. 14, Emotion and social behavior*. Newbury Park, CA: Sage.

Eisenberg, N., Gershoff, E. T., Fabes, R. A., Shepard, S. A., Cumberland, A .J., Losoya, S. H., Gutherie, I. K., & Murphy, B. C. (2001). Mothers' emotional expressivity & children's behavior problems & social competence: Mediation through children's regulation. *Developmental Psychology, 37*, 475-490.

Eisenberg, N., & Mussen, P. H. (1989). *The Roots of Prosocial Behavior in Children*. Cambridge: Cambridge University Press.

Eisenberg, N., & Zhou, Q. (2000). Regulation from a developmental perspective. *Psychological Inquiry, 11*, 166-172.

Elias, C. L., & Berk, L. E. (2002). Self-regulation in young children: Is there a role for sociodramatic play? *Early Childhood Research Quarterly, 17*, 216-238.

Engestroëm, Y., Miettinen, R., & Punamaki, R-L. (1999). *Perspectives on activity theory. Learning in doing: Social, cognitive, and computational perspectives*. NY: Cambridge University Press.

Fabes, R. A., & Eisenberg, N. (1992). Young children are coping with interpersonal anger. *Child Development, 63*, 116-128.

Fein, G. G., & Schwartz, S. S. (1986). The social coordination of Pretense in Preschool Children. In *The Young Child at Play*: *Reviews of Research*, Volume 4, (eds.), (Chapter 7: pp. 95-111). Washington DC: NAEYC.

Fischer, K. W., Bullock, D., Rotenberg, E. J., & Raya, P. (1993). The dynamics of competence: How context contributes directly to skill. In R. Wozniak and K.W. Fischer (Eds.), *Development in Context*. Hillsdale, NJ: Erlbaum, pp. 93–110.

Freud, S. (1922). *Beyond the Pleasure Principle*. Vienna: International Psycho-analytical Press.

Garvey, C. (1990). *Play*. Cambridge, MA: Harvard University Press.

Genishi, C., & DiPaolo, M. (1982). Learning through argument in a preschool. In L. C. Wilkinson (Ed.), *Communicating in the classroom* (pp. 49 -68). NY: Academic Press.

Grolnick, W. S., & Farkas, M. (2002).Parenting and the development of children's self-regulation. In M. H. Borenstein (Ed.), *Handbook if parenting*: *Volume 5. Practical issues in parenting* (2nd ed., pp. 89-110). Mahwah, NJ: Lawrence Erlbaum.

Hartup, W. W. (1992). Peer relations in early and middle childhood. In V. B. Van Hasselt & M. Hersen (Eds.), *Handbook of Social Development: A lifespan Perspective* (pp. 257 – 281). NY: Plenum Press.

Hartup, W. W. (1985). Relationships and their significance in cognitive development. In R. Hinde & A. Perret-Clemont (Eds.), *Relationships and cognitive development* (pp. 66-82). Oxford: Oxford University Press.

Hartup, W. W., Larsen, B., Stewart, M. I., & Eastenson, A. (1988). Conflict and the friendship relations of young children. *Child Development, 59*, 1590-1600.

Hay, D. F. (1984). Social conflict in early childhood. *Annals of Child Development, 1*, 1-44.

Hubbard, J. A., & Coie, J. D. (1994). Emotional correlates of social competence in children's peer relationships. *Merrill-Palmer Quarterly, 40*, 1-20.

Huesmann, L. R., Eron, L. D. Lefkowitz, M. M. & Walder, L. O. (1984). Stability of aggression over time and generations. *Developmental Psychology, 20*, 1120-1134.

Hughes, F. P. (1995). Children*, play, and development*. Boston: Allyn & Bacon

Huston-Stein, A., Freidrick-Cofer, L. & Susman, E. J. (1977). The relation of classroom structure to social behavior, imaginative play, and self-regulation of economically disadvantaged children. *Child Development, 48*, 908-916.

Johnson, D. E. (March 30 - April 2, 2003). Conference Paper 253-58: *An Introduction to the Analysis of Mixed Models* Paper presented at Seattle SAS Users Group International (SUGI), *P. 1-4.* http://www2.sas.com/proceedings/sugi28/253-28.pdf (Retrieved 11/25/05).

Kamii, C., & DeVries, R. (1980). *Group names in early education: Implications of Piaget's theory.* Washington, D.C.: NAEYC.

Kaplan, H. B. (1985). A comparison of the Vane Kindergarten Test with the WPPSI and a measure of self-control. *Psychology in the Schools, 22*, 277-282.

Kendall, P. C., & Wilcox, L. E. (1979). Self-control in children: Development of a rating scale. *Journal of Consulting and Clinical Psychology, 47,* 1020-1029.

Kenney, M., Ninness, C., Rumph, R., Bradfield, A., & Cost, H. (2002). Paradoxical patterns in the measurement of hyperactivity. *Behavior and Social Issues, 12,* 40-52

Keren, M., Feldman, R., Namdari-Weinbaum, I., Spitzer, S., & Tyano, S. (2005). Relations between Parents' interactive style in dyadic and triadic play and toddlers' symbolic capacity. *American Journal of Orthopsychiatry, 75*, 599-607.

Kerr, S. T. (1997). Why Vygotsky? The Role of Theoretical Psychology in Russian Education Reform. Paper presented at the *Annual Meeting of the American Association for the Advancement of Slavic Studies*, November, 1997. Seattle, Washington. http://faculty.washington.edu/stkerr/whylsvs.html (Retrieved 11/04/04).

Killen, M., & de Waal, F. B. M. (2000). The evolution and development of morality. In F. Aureli & F. B. M. de Waal (eds.), *Natural conflict resolution* (pp. 193-220). Berkeley, CA: University of California Press.

Killen, M., & Turiel, E. (1991). Conflict resolution in preschool social interactions. *Early Education and Development, 2*, 240-255.

Kochanska, G., Murray, K. T., & Coy, K. C. (1997). Inhibitory control as a contributor to conscience in childhood: From toddler to early school age. *Child Development, 68,* 263-277.

Kochanska, G., Murray, K. T., & Harlan, E. T. (2000). Effortful control in early childhood: Continuity and change, antecedents, and implications for social development. *Developmental Psychology, 36*, 220-232.

Kochanska, G., Murray, K., Jacques, T. Y., Koenig, A. L., & Vandegeest, K. A. (1996). Inhibitory control in young children and its role in emerging internalization, *Child Development, 67*, 490-507.

Kopp, C. B. (1982). Antecedents of self-regulation: A developmental perspective. *Developmental Psychology, 18,* 199-214.

Kopp, C. B. (1987). The growth of self-regulation: Caregivers and children. In N. Eisenberg (Ed.), *Contemporary topics in developmental psychology* (pp. 35-52). NY: Wiley.

Krafft, K., & Berk, L. E. (1998). Private speech in preschools: Significance of open-ended activities and make-believe play for verbal self-regulation. *Early Childhood Research Quarterly, 13,* 637-658.

Lave, J., & Wenger, E. (1991). *Situated Learning*: *Legitimate peripheral participation.* NY: Cambridge University Press.

Lawrence, J. A., & Valsiner, J. (1993). Conceptual roots of internalization: From transmission to transformation. *Human Development, 36*, 150-167.

Latour, B. (1987). *Science in action*: *How to follow scientists and engineers through society*. Philadelphia, PA: Open University Press.

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

Laursen, B., & Hartup, W. W., (1989). The dynamics of preschool children's conflicts. *Merrill-Palmer Quarterly, 35,* 281-297.

Leontiev, L. (1981). The problem of activity in psychology. In J. Wertsch (ed.), *The concept of activity in Soviet Psychology*. Armonk, NY: Sharpe. (Originally published in 1959).

Luria, A. R. (1928). The problem of the cultural development of the child. *Journal of Genetic Psychology, 35*, 493-506.

Luria, A. R. (1961). *The Role of Speech in the Regulation of Normal and Abnormal Behaviour*. Oxford: Pergamon Press.

Lynd, R. (1923). *The Blue Lion, And Other Essays*. London: Methuen.

Marcus, E. C. (1985). Perceptions of conflict resolution: The effects of levels of perspective taking and psychological orientation. Unpublished Ph.D. dissertation. Columbia University.

McCabe, L., Rebello-Britto, P., Hernandez, M., & Brooks-Gunn, J. (2004). Games Children Play: Observing Young Children's Self-Regulation across laboratory, home, and school settings. In R. DelCarmen-Wiggins & A. Carter (Eds.), *Handbook of Infant, Toddler, and Preschool Mental Health Assessment*. (pp. 491-521). NY: Oxford University Press.

McComas, W. R., & Moore, L. S. (2001). The Expectancy Effect in Secondary School Biology Laboratory Instruction: Issues & Opportunities. *The American Biology Teacher:* Vol. 63, 246–252. http://0www.bioone.org.library.lib.asu.edu/pdfserv/i0002-7685-063-04-0246.pdf (Retrieved 3/06/2006).

McDevitt, T.M., & Ormrod, J.E. (2004). *Child Development & Education (2nd eds)*. Upper Saddle River, NJ: Merrill Prentice Hall

Merkel, C. (1999, Winter). Folkloristics of Educational Spaces: Material Lore in Classrooms with and without Walls - study of how space is created and arranged on college campuses**.** Lib*rary Trends*, *47*, 417-438. http://findarticles.com/P/articles/mi_m1387/is_3_47/ai_54836346 (Retrieved 1/05/05).

Miller, P. M., Danaher, D. L., & Forbes, D. (1986). Sex-related strategies for coping with interpersonal conflict in children aged five and seven. *Developmental Psychology, 22*, 543-548.

Miller, A. L., & Olson, S. L. (2000). Emotional Expressiveness during Peer Conflicts: A Predictor of Social Maladjustment among High-Risk Preschoolers**.** *Journal of Abnormal Child Psychology, 28*, 339-352.

Moran, S. & John-Steiner, V. (2003). *Creativity in the making: Vygotsky's contemporary contribution to the dialectic of creativity & development.* www.unm.edu/~vygotsky/create.pdf (Retrieved 1/05/05).

Murphy, B. C., & Eisenberg, N. (1996). Provoked by a peer: Children's Anger-related responses and their relations to social functioning. *Merrill-Palmer Quarterly, 42*, 103-124.

Nicolopoulou, A. (1993). Play, cognitive development, & the social world: Piaget, Vygotsky, and beyond. *Human Development, 36,* 1-23.

Occupational Outlook Handbook (2000-2001). http://www.umsl.edu/services/govdocs/ooh20002001/323.htm (Retrieved 11/9/04).

Olson, S. L., & Hoza, B. (1993). Preschool developmental antecedents of conduct problems in children beginning school. *Journal of Clinical Child Psychology, 22*, 60-67.

Olweus, D. (1991). Bully/ Victim problems among school children: Basic facts and effects of a school based intervention program. In D. J. Pepler & K. H. Rubin (Eds.), *The development and treatment of childhood aggression* (pp. 411-448). Hillsdale, NJ: Erlbaum.

Österman, K., Lagerspetz, K. M. J., Landau, S. F., Fraczek, & Pastorelli, C. (1997). Sex differences in styles of Conflict Resolution: A developmental and cross-cultural study with data from Finland, Israel, Italy, and Poland. In D. P. Fry and K. Björkqvist (Eds.), *Cultural variations in Conflict Resolution*: *Alternatives to Violences* (Chapter 17: pp. 185-197). Mahwah, NJ: Lawrence Erlbaum Associates.

Pacifici, C., & Bearison, D. J. (1991). Development of Children's self-regulations in idealized and mother–child interactions. *Cognitive Development, 6,* 261-277.

Parker, J. G., & Asher, S. R. (1993). Friendship and friendship quality in middle childhood: links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology, 29*, 611-621.

Paris, S. G., & Byrnes, J. P. (1989). The constructivist approach to self-regulation and learning in the classroom. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self regulated learning and academic achievement*: *Theory, research, and practice*. NY: Springer-Verlag.

Parten, M. B. (1932). Social participation among preschool children. *Journal of Abnormal and Social Psychology, 27,* 243-269.

Pellegrini, A. D. (1996). *Observing children in their natural worlds*. Mahwah, NJ: Erlbaum.

Pepler, D. J., & Craig, W. M. (1995). A peek behind the fence: Naturalistic Observations of Aggressive Children with remote audiovisual recording. *Developmental Psychology, 31*, 548-553.

Pepler, D. J., Craig, W. M., & Roberts, W. L. (1998). Observations of Aggressive and Nonaggressive Children on the School Playground. *Merrill-Palmer Quarterly, 44*, 55-76.

Piaget, J. (1952). *The origins of intelligence in children*. NY: International Universities Press.

Piaget, J. (1955). *The language and thought of the child.* (M. Gabain, Trans.). NY: Meridian. (Original work published 1923).

Piaget, J. (1962). *Play, dreams and imitation in childhood*. NY: Norton. (Original work published 1945).

Piaget, J. (1965). *The moral judgment of the child.* NY*:* Free Press (Original work published 1932).

Polnariev, B. (2002). *How preschoolers resolve conflict during free-play: A Naturalistic* observation (Unpublished Masters Thesis). The Graduate Center, City University of New York.

Radke-Yarrow, M., Zahn-Waxler, C., & Chapman, M. (1983). Children's prosocial dispositions and behavior. In E. M. Hetherington (Ed.) & P. H. Mussen (Series Ed.), *Handbook of child psychology*: *Vol. 4. Socialization, personality, and social development* (4th ed., pp. 469-545). NY: Wiley.

Raver, C. C., & Zigler, E. F. (1997). Social competence: An untapped dimension in evaluating Head Start's success. *Early Childhood Research Quarterly, 12,* 363-385.

Rende, R., & Killen, M. (1992). Social interaction antecedents of object conflict. *Early Childhood research quarterly, 7*, 551-563.

Richardson, V. (1997). Constructivist teaching and teacher education: Theory and practice. In V. Richardson (Ed.), *Constructivist teacher education*: *Building new understandings* (pp. 3-14). Washington, DC: Falmer Press.

Rice, J. C. (1994). Logistic regression: An introduction. In B. Thompson, (ed.), *Advances in social science methodology*, Vol. 3: 191-245. Greenwich, CT: JAI Press.

Rinaldi, C. M. (2002). Social conflict abilities of children identified as sociable, aggressive, and isolated: Developmental implications for children at-risk for impaired peer relations. *Developmental Disabilities Bulletin, 30,* 77-94.

Robin, A. L., Fischel, J. E., & Brown, K. E. (1984). The measurement of self-control in children: Validation of the self-control rating scale. *Journal of Pediatric Psychology, 9*, 165-175.

Robbins, D., & Stetsenko, A. (2002). *Voices within Vygotsky's Non-Classical Psychology*: *Past, Present, & Future*. (Eds.). NY: Nova Science Publishers.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. NY: Oxford University Press.

Rogoff, B., & Wertsch, J. V. (1984). Editors' notes. In B. Rogoff & J. V. Wertsch (Eds.), *Children's learning in the "zone of proximal development."* New Directions for Child Development, No. 23. San Francisco, CA: Jossey-Bass.

Rohrbeck, C. A., Azar, S. T., & Wagner, P. E. (1991). Child Self-Control Rating Scale: Validation of a Child Self-Report Measure. *Journal of Clinical Child Psychology, 20*, 179-183.

Roopnarnine, J. L. (1985). Changes in peer-directed behavior following preschool experience. *Journal of Personality and Social Psychology, 48,* 740-745.

Ross, H., & Conant, C. (1992). The social structure of early conflict: Interaction, relationships, and alliances. In C. U. Shantz & W. W. Hartup (Eds.), *Conflict in Child and Adolescent development* (pp. 153-187). Cambridge, MA: Cambridge University Press.

Rothbart, M. K., Ahadi, S. A., & Evans, D. E. (2000). Temperament and personality: Origins and outcomes. *Journal of Personality and Social Psychology, 78*, 122-135.

Rubin, K. H., Fein, G. G., & Vandernberg, B. (1983). Play. In P. Mussen (ed.), *Handbook of child psychology, Vol. 4*: *Cognitive development*. (pp. 693-774). NY: John Wiley & Sons.

Sameroff, A. J. (2000). Developmental systems and psychopathology. *Development and Psychopathology*, 12, 297-312.

Schunk, D.H. (2004). *Learning Theories: An Educational Perspective* (4th ed.). Upper Saddle River, NJ: Merrill.

Selman, R. (1980). *The growth of interpersonal understanding*. NY: Academic Press.

Shantz, C. U. (1987). Conflicts between children. *Child Development, 58,* 283-305.

Shantz, C. U., & Hartup, W. W. (1992). Conflict and development: An introduction. In C. U. Shantz & W. W. Hartup (eds.), *Conflict in child and adolescent development*. (pp. 1-11). Cambridge: Cambridge University Press.

Shantz, C. U., & Shantz, D. W. (1985). Conflict between children: Social-cognitive and sociometric correlates. In M. Berkowitz (Ed.), *Peer conflict and psychological growth* (pp.3-21). San Francisco, CA: Jossey-Bass.

Shantz, D. W. (1986). Conflict, aggression, and peer status: An observational study. *Child Development, 57*, 1322-1332.

Shoda, Y., Mischel, W., & Peake, P. K. (1990). Predicting adolescent cognitive and self-regulatory competencies from preschool delay of gratification. *Developmental Psychology, 26*, 978-986.

Sinha, S. K. (2003, October 21). *Robust Analysis of Generalized Linear Mixed Models*. http://io.uwinnipeg.ca/~ssinha/rglmm_r2.pdf (Retrieved 11/18/05)

Skinner, B. F. (1974). *About Behaviorism*. NY: Knopf.

Siegler, R. S., & Crowley, K. (1991). The Microgenetic Method: A direct means for studying cognitive development. *American Psychologist*, *46*, 606-620.

Smetana, J. G., Yau, J., Restrepo, A., & Braeges, J. L. (1991). Conflict and adaptation in adolescence: Adolescent-parent conflict. In M. E. Colten & S. Gore (Eds.), *Adolescent stress*: *Causes and consequences* (pp. 43-65). NY: Aldine de Gruyter.

Smilansky, S. (1968). *The effects of sociodramatic play on disadvantaged children*. NY: Wiley.

Smilansky, S. (1990). Sociodramatic play: Its relevance to behavior & achievement in school. In E. Klugman & S. Smilansky (Eds.), *Children's play & learning* (pp. 18-42). NY: Teachers College Press.

Smolucha, F. (1992). A reconstruction of Vygotsky's theory of creativity. *Creativity Research Journal, 5,* 49-67.

Spodek, B. (1977). What constitutes worthwhile Educational experiences for young children? In B. Spodek (Ed.), *Teaching Practices: Reexamining assumptions*. (pp. 5-20), Washington DC: National Association for the Education of Young Children (NAEYC).

Sroufe, L. A., & Rutter, M. (1984). The domain of developmental psychopathology. *Child Development, 55*, 17-29.

Staub, E. (1978). Positive social behavior and morality: Social and personal influences (Vol. 2). NY: Academic Press.

Stetsenko, A. (2004). Scientific Legacy: Tool and Sign in the Development of the Child. In R. W. Rieber and D. K. Robinson (Eds.), *The Essential Vygotsky*. NY: Kluwer Academic/ Plenum Publications.

Stetsenko, A., & Arievitch, I. (1997). Constructing & Deconstructing the Self: Comparing Post-Vygotskian & Discourse-Based Versions of Social Constructivism. *Mind, Culture, & Activity, 4,* 159-172.

Stetsenko, A., & Arievitch, I. M. (2004). The Self in Cultural-Historical-Activity-Theory: Reclaiming the Unity of Social and Individual Dimensions of Human Development. *Theory and Psychology, 14*, 475-503.

Toelken, B. (1996). *The dynamics of folklore*. Logan: Utah State University Press.

Vaughn, B. E., Kopp, C. B., & Krakow, J. B. (1984). The emergence and consolidation of self-control from eighteen to thirty months of age: Normative trends and individual differences. *Child Development, 55,* 990-1004.

Vygotsky, L. S. (1962). *Thought and Language*. (E. Hanfmann & G. Vakar, Eds. & Trans.). Cambridge, MA: M.I.T. Press. (Original work published 1934).

Vygotsky, L. S. (1966). Play and its role in the mental development of the child. Voprosy Psikhologii, No. 6 (C. Mulholland, Trans). (pp. 1-18). http://www.marxists.org/archive/Vygotsky/works/1933/play.htm (Retrieved 10/24/02). (Taken from a stenographic record of a lecture given in 1933).

Vygotsky, L. S. (1978). *Mind in Society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press. (Original work Collected from 1930-1935)

Vygotsky, L. S. (1981). The genesis of higher mental functions. In J. Wertsch (Ed. & Trans.), *The concept of activity in Soviet Psychology* (pp. 144-188). Armonk, NY: M. E. Sharpe. (Reprinted from *Razvitie vysshikh psikhicheskikh funktsii,* 1960, pp. 182-223).

Vygotsky, L. S. (1987). Thinking and Speech. In *The collected works of L.S. Vygotsky*: Volume 1. *Problems of general psychology*. In R. W. Rieber & A. S. Carton, (Eds.), & N. Minick, (Trans.). NY: Plenum Press. (Original work published 1934).

Vygotsky, L. S. (1996). *Pedagogicheskaya psikhologia* [*Educational psychology*]. Moscow: Pedagogika Press.

Vygotsky, L. S. (1997). The history of the development of higher mental functions. R. W. Rieber & M. J. Hall (Eds.), *The collected works of L. S. Vygotsky*, Volume 4. NY: Plenum.

Vygotsky, L. S. (1999). Tool and Sign in the development of the child. In *The collected works of L. S. Vygotsky, Volume 6*: *Scientific Legacy* (R. W. Rieber, Ed.; pp.3-68) NY: Kluwer Academic/Plenum.

Vygotsky, L. S., & Luria, A. R. (1994). Tool and symbol in child development. In J. Valsiner and R. van der Veer (Eds.), *The Vygotsky Reader: A quest for synthesis* (pp. 99-175). Oxford, UK: Blackwell.

Weinstein, C. (1991). The classroom as a social context. *Annual Review of Psychology, 42*, 493-525.

Wood, D. J., Bruner, J., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry, 17*, 89-100.

Wertsch, J. V. (1980). The significance of dialogue in Vygotsky's account of social, egocentric and inner speech. *Contemporary Educational Psychology, 5,* 150-162.

Wertsch, J. V. (1985). *Vygotsky and the social mind.* Cambridge, MA: Harvard University Press.

Wertsch, J. V. (1998). *Mind as action*. NY: Oxford University Press.

Wertsch, J. V., & Hickmann, M. (1987). Problem solving in social interaction: A microgenetic analysis. In M. Hickmann (Ed.), *Social and functional approaches to language and thought* (pp. 251-266). San Diego, CA: Academic Press.

Wheeler, E. J. (2004). *Peer Conflicts in the Classroom*. ERIC number: ED372874 http://www.ericdigests.org/1995-1/conflicts.htm (Retrieved on 12/15/05).

White, L. (1942). On the use of tools by primates. *Journal of Comparative Psychology, 34*, 369-374.

Zimmerman, B. J. (2000). Attaining Self-Regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation*: *Research, theory, and applications.* NY: Guilford Press.