Chapter –II

Review of Literature

2.1 Organization of Literature Review

Based on the objectives of the current study, the literature review for the study has been organized to develop background and understand the inline work of earlier researchers. Published literature from ERIC (EBSCO), ERIC (FirstSearch), and PsycInfo, using the following keywords: early adolescence, boys, girls, female, aggression, emotional disturbance, behavior disorders, gender, relational aggression, age, and adolescents, was searched for relevance to the topic of this paper. Additionally, recent issues of Journal of the American Academy of Child and Adolescent Psychiatry, Sex Roles, Aggressive Behavior, Developmental Psychology, Journal of School Psychology, Child Development and Journal of Abnormal Psychology were searched for studies pertaining to gender based aggression and research articles obtained through the preliminary search were examined for additional, related literature.

In selecting the studies for this review, research where aggression in early adolescence as a result of socio-economic factor, parental occupation, and differences in aggression levels based on demographics and sexes etc. were chosen. As Indirect Aggression or relational aggression is a very important constituent of the Aggression special focus has been directed towards this.

2.2 Definition of Aggression

Aggression” is a familiar term in common parlance, as well as a key concept in the study of human behavior. In conversation, we may use the word “aggressive” to define a person assaulting another, a carnivorous animal seeking prey, even a storm wreaking havoc on the earth it passes.
The variety in the definitions have been used by researchers for different type of aggression i.e. direct, indirect, and verbal aggression which adds confusion to the process of effectively reviewing studies. In their review of studies on gender and aggression, Frodi, Macaulay, and Thome (1977) found that boys were generally more aggressive than girls. They admitted, however, that a major difficulty they encountered when conducting the review was the way in which indirect and direct aggression were defined by various researchers. MacCoby and Jacklin (1974), in their review of literature on gender based aggression, also found boys to be more aggressive than girls. MacCoby and Jacklin noted, however, that in the studies reviewed, aggression was generally defined as behaviors which could be described by rough-play in schoolyards. Researchers agreed that direct aggression was generally defined as physical aggression toward a target, whereas indirect aggression took on many forms, to include acts that are now identified as verbal and social aggression.

Definitions of direct and indirect aggression are still evolving as researchers continued to study gender differences in aggression. Consequently, studies emerged with conflicting results. For example, in the following three studies, researchers examined gender based aggression and reported conflicting results perhaps due to the differences in their definitions of indirect aggression and use of instruments to measure aggression. Lindeman, Harakka and Keitikangs-Jarvinen, (1997) examined the relationship between age, gender and aggression. A total of 2,594 children, 1,307 girls and 1,287 boys, at the ages of 11, 14 and 17 years old from Finland participated in this study. A Social Problem Questionnaire was developed from a pilot study and the participants responded to situational descriptions as to the type of aggression they would use. The factor structure of the Social Problems Questionnaire included items for direct aggression, indirect aggression, prosocial strategy and withdrawal. Lindeman, et al., (1997) found that boys
used more aggression, indirect and direct, than girls across all three age groups studied: 11-year-olds, 14-year-olds and 17-year-olds.

Carlo, Raffaelli, Laible and Meyer, (1999) also used self-report methods, the Weinberger Adjustment Inventory, to determine whether gender differences in physical aggression could be accounted for by gender differences in personality and social contextual factors. In this study, 46 boys and 43 girls, ages ranging from 12 to 19 years old, with the mean age of 16 and standard deviation age of 1.8, participated. In contrast to Lindeman, et al., Carlo, et al. found that males consistently scored higher than females in aggression measures.

Lagerspetz, Bjorkqvist and Peltonen (1988) investigated the prevalence of indirect aggression among school aged children. In this study, indirect aggression included the manipulation of friendship patterns to harm the victim. Participants included 89 girls and 78 boys, ages 11 to 12 years old, who first rated their peers and then rated themselves on behaviors while angry. Lagerspetz, et al. used discriminate analysis to determine which item was best discriminated between the sexes and found that it was possible to correctly classify the items 95.8% of the time. “Girls preferred more indirect means of aggression. Boys tended to employ direct aggression e.g., physical violence, cursing, and taking things”

When comparing studies, where definitions of indirect aggression were more clearly aligned, results were found to be more consistent. Pakaslahti and Keitikangas-Jarvinen (1997) examined dominating types of aggressive behavior and sex-related variance and similar to Lagerspetz, et al. (1988) found that girls tended to be aggressive indirectly while boys tended to be aggressive directly. In this study, 839, 14-year old boys and girls were divided into groups based on their peer-assessed total aggressiveness scores. The
participants used a peer assessment instrument focusing on four aspects of aggression:
(1) intriguing (a form of indirect aggression, secretly or underhandedly plotting, scheming),
(2) arguing (direct verbal aggression),
(3) fighting, (direct physical aggression), and,
(4) bullying (making threatening remarks). Pakaslahti, et al. found that boys preferred to bully their target first and intrigue their target second, followed by fighting or arguing.

Girls preferred intriguing their target first, then arguing and fighting as the last choice. Behaviors exhibited by boys reflect what past research has shown to be important to boys’ socialization and within their peer group context, specifically, physical dominance (Boulton, 1993).

Crick and Grotpeter (1995) hypothesized that just like boys’ tendencies to act out aggressively in a manner which has been shown to be important to boys’ socialization, aggression among girls would be focused on relational issues, which are important to girls’ socialization and peer interactions. Crick and Grotpeter thus suggested the term relational aggression. Aggression among girls, “would include behaviors that are intended to significantly damage another child’s friendships or feelings of inclusion by the peer group (e.g., angrily retaliating against a child by excluding her from one’s play group; purposefully withdrawing friendship or acceptance in order to hurt or control the child; spreading rumors about the child so that peers will reject her)”.

For our purposes, the more narrow definition used in psychology is most appropriate. Aggression is behavior whose intent is to harm another. More specifically, aggression is defined as “any sequence of behavior, the goal response to which is the injury of the person toward whom it is directed.”[Dollard, John., Doob, Leonard.W., Miller, Neal E., Mowrer, O.H.,
While the definition of aggression varies somewhat from author to author, it is helpful to look at theories of aggression by dividing them into three schools: those that consider aggression as an instinct, those that see it as a predictable reaction to defined stimuli, and those that consider it learned behavior. The three schools form a continuum along which, at one end, aggression is seen as a consequence of purely innate factors and, at the other end, of external factors. In fact, much of the debate on aggression might be framed as a more general “nature vs. nurture” debate.

2.3 Theories of Aggression

2.3.1 Psychoanalytic Theory

Freud was one of the first to consider the concept of aggression as a personality characteristic. He believed that human behavior is motivated by sexual and aggressive drives or instincts (Freud, 1949). While Freud's theory of aggression was written in 1920, today, there are still many followers of his psychoanalytic theory that believe aggression is innate. Harris' (1998) theory of aggression is based on a combination of Freud's psychoanalytic theory and British object relations theory. Other psychoanalysts have abandoned the notion that aggression is an instinctual drive and have developed a position that aggression is an instinctual response to external stimuli (Mitchell, 1998).

One substantial limitation of psychoanalytic theory is that it, in most circumstances, is unable to be empirically validated. Psychoanalytic theories are based on experiences and opinions of therapists and are not backed by scientific research. A researcher can neither confirm nor nullify psychoanalytic theory. Pervin and John (1997) state that many psychoanalysts support psychoanalytic theory with observations that are influenced by the theory,
which bias the behaviors of their subjects and the researchers perception of the data. Due to the limitations of psychoanalytic theory and the drive to have psychology recognized as a science, many new theories arose to explain aggression.

2.3.2 Biological Theories

Some researchers believe that aggression is an innate behavior but, however, do not subscribe to psychoanalytic theory. Maxon (1998) proposed a theory that one’s genes effect one or more types of aggression in mice, which may be applied to humans as a genetic explanation of aggression. Lucki (1998) claims that the neurotransmitter, serotonin, may effect social behaviors involving aggression and anxiety. Lucki suggests that serotonin be used as a treatment for subjects suffering from abnormally high levels of aggression or anxiety. These researchers believe that aggression is caused by some genetic, or biological factor, and, thus, believe that cases involving aggression should be treated chemically, rather than treated by psychotherapy. These views of genetic or material essentialism claim that not only are the physical characteristics of an individual determined by genetic information, but one’s social roles, behaviors, and relationships also have a biological-genetic base (Kegley, 1996).

2.3.3 Drive Theories

In the 1940s, Clark Hull created a theory that explains behavior in terms of needs and drives. Hull (1943) defined a need as a lack of something that is essential for survival. Needs create drives which motivate behavior to reduce or eliminate needs. Aggression, according to this theory is a drive, created by some innate human need. While Hull’s theory defined drives as solutions to needs, other theorists described other drives. Dollard, Doob, Miller, Mowrer, and Sears (1939) suggested that aggression was a drive to harm another person that was caused by frustration. Their view is known as the frustration-aggression hypothesis and suggests that aggression occurs as a result of
frustration, which can have a number of other reactions. It was later believed that there are many sources of aggression, frustration is not the only one, and this hypothesis was dismissed (Berkowitz, 1990).

2.3.4 Early Behaviorist Theory

In the 1960s, behaviorism was the driving force in psychology. The work of Russian physiologist Ivan Pavlov on conditioned responses had been applied to human learning and behavior by John B. Watson. B. F. Skinner's operant conditioning was gaining popularity among psychologists. It was the general consensus that most social behaviors were learned through positive and negative reinforcement, punishment and the association of these principles to other antecedent behaviors (Hergerhahn, 1997).

2.3.5 Social Learning Theory

Bandura, Ross, and Ross (1961) did some pioneering research on aggression in children. They compared the behavior of children that witnessed aggressive acts to the behavior of children that witnessed non-aggressive acts. They found that subjects that were exposed to aggressive behavior reacted more aggressively when instigated by an aggression arousal, than subjects that were not exposed to aggressive behavior. The subjects in the aggressive condition imitated the aggressive actions and words they were exposed to.

Bandura, Ross, and Ross (1961) demonstrated that social imitation may be responsible for the acquisition of some of the behaviors not explained by Skinner's model of reinforcement. Aggression may be imitated rather than learned through reinforcement. The implications of this finding are important for several reasons. If aggression can be learned through imitation, parents who wish to dissuade their children's aggressive behavior need to censor the child's environment so that he or she has no aggressive models from which to learn aggressive behavior. If one subscribes to the social learning theory of
behavior, we as a society should be concerned with the content of television shows, video games, and other means in from which children may learn inappropriate behaviors from models.

Since the publication of Bandura, Ross, and Ross' (1961) article, numerous studies have been performed examining the correlation between viewed aggression and aggressive behavior. Research on the relationship between television violence and aggressive behavior is summarized in Paik and Comstock's (1994) meta-analysis. Paik and Comstock examined both published and unpublished research articles that investigated the effect of television violence on aggressive behavior. Using 217 studies, conducted from 1957 to 1990, they found a highly significant, positive correlation between television violence and aggressive behavior. They included a variety of studies, using a wide spectrum of ages for subjects and four different research designs: laboratory experiments, field experiments, times series, and survey. The results of their meta-analysis provide support for the conclusions of the research done by Bandura, Ross, and Ross. Paik and Comstock demonstrated that 30 years of research on the topic aggression has replicated Bandura, Ross, and Ross' conclusion, that viewing aggression increases the likelihood of the viewer acting aggressively.

Bandura, Ross, and Ross (1961) also found that children in the non-aggression condition played more non-aggressively than the control group. This suggests that both aggression and nonaggression can be social learned. While this finding is often overlooked in this study, other researchers have considered this relationship further. Liss and Reinhardt (1980) showed that children are influenced by both prosocial and antisocial messages within prosocial programs. They suggest that while watching a prosocial television program, a child learns both the prosocial behavior of the hero (heroine) and the antisocial behavior of the villain.
Other researchers have taken a different approach to studying the validity of the social learning theory's explanation of aggression. Reidy (1977) was the first to compare aggression in abused and nonabused-neglected children to aggression in normal children. He found that abused and nonabused-neglected children showed significantly more aggression than did normal children. The social learning theory states that children exposed to aggressive parental models will demonstrate aggressive characteristics outside the home (Bandura, 1973). Reidy's finding lends empirical validation for the social learning theory's explanation of aggression. Children can learn aggression from their aggressive parents, who may wish to prevent antisocial behavior in their children, but in punishing undesired behavior, they may actually be teaching it. This implies that physical punishment teaches aggression. Parents must be careful in what behaviors they model for their children.

The effect of conflicts between mother and son on the child's aggression was studied by Snyder, Edwards, McGraw, and Kilgore (1994). They observed the interaction of 20 mothers and their 5-year-old sons during social conflicts. Ten of the sons had been classified as aggressive in home and school settings, while the other ten had been described as non-aggressive. They found that aggressive sons had more conflict and engaged in conflict longer and more intensely with their mothers than non-aggressive sons. These results support the social learning theory of aggression and the results of Reidy's (1977) study. Children who are often in conflict with a parent will act more aggressively outside the home. The mother is teaching the child how to act aggressively.

Perry, Perry, and Rasmussen (1986) also adopted the social learning theory's explanation of aggression, combined with a cognitive explanation, to study aggression in children. The subjects were 160 children, 80 of which were classified as aggressive and 80 which were classified as nonaggressive by classmates on a standardized inventory. They looked for differences in
children's perceptions of self-efficacy and their response-outcome expectancies between the two groups. These researchers found that aggressive children, when compared to nonaggressive children, reported that it is easier to act aggressively and more difficult to control aggressive impulses. They also discovered that aggressive children expected that behaving aggressively would be positively reinforced and improve poor treatment from their peers. This finding is consistent with social learning theory's view that self-efficacy perceptions and outcome expectancies determine a child's decision to behave aggressively.

Other researchers have used the framework of social learning theory to study gender differences in aggression. Sanson, Prior, Smart, and Oberklaid (1993) conducted a longitudinal study of 300 families to examine gender differences in aggression from infancy to age eight. They found little or no gender differences from infancy to early childhood. When the subjects got a little older, they found that boys were more aggressive, as well as more hyperactive, noncompliant, and uncooperative, and less developed socially and cognitively than their female counterparts. The older their subjects were, the more pronounced these differences. These results support the social learning theory of aggression. If no gender differences are found at early ages, later gender differences are not biological or genetic, they are learned in the environment of the subjects. Boys learn to be aggressive, while girls do not.

Crick and Grotpeter (1995) also studied gender differences in aggression. They interpret the results of studies finding more aggression in boys, such as the Sanson, Prior, Smart, and Oberklaid (1993) study, as reflecting a lack of research on forms of aggression for girls. They believe that levels of aggression are equal in both genders, but the aggression is manifested in different manners. They used 491 grade school boys and girls as subjects to examine levels of relational aggression, which is believed to be a common
form of aggression in girls, unlike physical and verbal aggression which is usually studied and found to be more common among boys. They found that, as a group, females were significantly more relationally aggressive than boys. This is an important finding because it changes the interpretation of previous studies that have reported higher levels of aggression in young males compared to young females. Aggression is consistent in both genders, as groups, it simply takes different forms in young boys and young girls. While boys with high levels of physical and verbal aggression have been found to be at risk for antisocial behavior, Crick and Grotpeter suggest that relationally aggressive females are at risk for serious adjustment difficulties. According to the social learning theory, boys learn to be physically and verbally aggressive, while girls learn to be relationally aggressive, because of the models which with they are presented.

Wiegman and van Schie (1998) investigated the amount of time children spent playing video games and aggressive and prosocial behavior. They also considered the child's preference for aggressive video games and their behavior. They found that video game use did not effect the child's aggression, but was significantly negatively related to prosocial behavior. They also found that children, especially boys, who preferred aggressive video games not only showed less prosocial behavior, but also were more aggressive. Another significant correlation found in this study was that these children that preferred more aggressive video games were less intelligent than other children. This provides further support for social learning theory, more specifically, the social cognitive theory of the development of aggression. Aggressive models increase aggressive behavior in the subject. Furthermore, exposure to aggressive models may alter one's cognition, creating a preference for aggressive material.
2.4 Historical Overview of Research on Aggression

Prior to the 1970s, researchers primarily studied aggression by conducting observational studies of children’s physical and verbal behaviors in classrooms and schoolyards (MacCoby & Jacklin, 1974; Frodi, Macaulay, & Thome 1977; Bjorkqvist, 1994). Despite findings from cross-cultural studies where women were found to be more physically aggressive than men (Fry, 1992), in these western-culture studies males were found to be much more aggressive than females (MacCoby & Jacklin, 1974; Frodi, Macaulay, & Thome, 1977). MacCoby and Jacklin (1974), reviewed 28 observational studies on aggression in children and found that boys consistently scored higher in physical aggression categories than girls. In a literature review of 142 observational studies of gender and aggression, Frodi, Macaulay, and Thome (1977) also found that boys were generally more aggressive than girls. Boys appeared to be so much more aggressive than girls that some researchers actually omitted female participants from their studies and deemed the study of female aggression as unnecessary (Buss, 1961; Frodi, et al. 1977).

2.4.1 Bjorkqvist’s Critique

In the reviews of literature by MacCoby and Jacklin (1974) and Frodi, et al. (1977) on gender and aggression, all of the studies examined used observational measurements. Bjorkqvist (1994) questioned the conclusions that boys were more aggressive than girls. Bjorkqvist posed that these reviews were based on observational studies alone, conducted with mostly kindergarten aged children and conducted in schoolyards where rough-play was considered aggression, limiting the definition of aggression to only observable behaviors. As Bjorkqvist (1994) stated:

*There is no reason to believe that females should be less hostile and less prone to get into conflicts than males. But being physically weaker, they simply have to develop other means than physical ones in order to reach successful results.*
Accordingly, one should not expect women to develop and use exactly the same strategies for attaining their goals as men do. If strategies for aggression and conflict resolution are learned, not innate, then women are likely to learn different methods than men. Important aspects are power and capacity, not only physical, but also verbal, and social. (p.178)

Bjorkqvist's theory sparked researchers to re-examine the definitions of aggression that were being used in the study of gender and aggression.

In their study, Crick and Grotpeter (1995) developed a peer nomination instrument that facilitated the exploration of relational aggression and overt aggression. The peer nomination instrument included items on relational aggression, overt aggression, prosocial behavior and isolation. A total of 491 students, 128, 3rd graders (65 girls, 63 boys), 126, 4th graders (56 girls, 70 boys), 126, 5th graders, (51 girls, 69 boys) and 111, 6th graders (57 girls, 54 boys) participated. Approximately 37% of their sample was African-American, 60% was European-American, and 3% was made up of other ethnic groups. Their schools were located in a medium size town in the mid-west where the SES ranged from low to medium with the bulk of the families in the low range.

The number of nominations participants received from peers for each item was summed and standardized for each classroom. Aggressive groups were then classified into four distinct groups: (1) non-aggressive, (2) overtly aggressive, (3) relationally aggressive, and, (4) combined overtly and relationally aggressive. Although approximately the same number of boys and girls were identified as non-aggressive, girls were significantly more relationally aggressive than boys (17.4% of girls versus 2.0% of boys) and boys were significantly more overtly aggressive than girls (15.6% of boys versus .4% of girls). Additionally, they found relational aggression to be
distinct from overt aggression and found a significant main effect for gender for both relational aggression and overt aggression.

Definitions of direct and indirect aggression continued to be explored as gender based aggression began to be categorized into a variety of direct and indirect groups. Support for Crick and Gropeter’s (1995) findings, was found in subsequent research on relational aggression and gender. Using both a Teacher Assessment instrument and a Peer Assessment instrument, Crick, Casas and Mosher (1997) identified four distinct groups among their participants: (a) nonaggressive, (b) overtly aggressive, (c) relationally aggressive, and (d) relationally plus overtly aggressive. In this study, a total of 65 students, 16 boys and 15 girls ages 3.5 to 4.5 years old, and 18 boys and 16 girls ages 4.5 to 5.5 years old, participated. The teacher reports of aggression yielded a significant effect of gender where boys were significantly more overtly aggressive than girls and girls were significantly more relationally aggressive than boys.

In studies where peers were evaluated as to their perceptions of aggression and gender, boys were viewed by peers as being more overtly aggressive and girls were viewed by peers as being more relationally aggressive (Crick, 1997; Crick, Bigbee & Howes, 1996). Boys also evaluated overtly aggressive behavior in instrumental conflicts more positively than did girls, and girls evaluated relational aggressive behaviors in relational conflicts more positively than did boys (Crick & Werner, 1998) further supporting the theory that boys will select a form of aggression that fits their socialization tendencies and girls will select a form a aggression that fits with their socialization tendencies.

Crick and Gropeter’s (1995) hypothesis that aggression among girls would focus on relational issues, which are important to girls’ socialization. Contrary to the previous findings, researchers in two different studies with second and
third graders, found no difference in the types of aggression exhibited between girls and boys when examining relational aggression and overt aggression. The first study by Hennington, Hughes, Thomspson and Cavell (1998) attempted to “determine gender differences in levels and correlates of relational and overt aggression in children in early elementary grades”, and to “determine the implication of assessing relational aggression when identifying children for intervention”. Teachers in regular education classrooms identified two or three children who behaved aggressively to participate in this study. Of the 904, second and third grade, identified students, 461 were boys and 443 were girls. Through a peer-nominating instrument, the student participants nominated three peers that were considered to be relationally aggressive and three peers that were considered to be overtly aggressive. Interestingly, the distribution of overt aggression in girl’s scores was leptokurtic and positively skewed which was interpreted to reflect that girls are rarely perceived by classmates as being highly, overtly aggressive.

Additionally, and contradicting Crick and Grotpeter’s 1995 results, Hennington et al. (1998) conducted a one-way analysis of variance of data and found that not only did boys exhibit more overt aggression than girls, but boys also exhibited more relational aggression than girls and more of a combination of overt aggression and relational aggression than girls. Thus, in this study boys were more aggressive across all types of aggression than girls. The participants in this study were, however, identified prior to the study by their teachers as being aggressive children. This selection criterion may have affected the results because only children who were already perceived as aggressive by their teachers participated. Girls who may have been relationally aggressive but not identified as aggressive by their teachers, did not participate in the study. The pre-selection process limited the participant numbers and age, and may have impacted the internal validity of the study.
2.4.2 Gender, Age and Aggression

The variation and instability of aggression among girls may be explained by the development (in older girls) or lack of development (in younger girls) of social skills and the structure of girls’ peer group expectations. Young girls start out using more direct forms of aggression, and as they develop social skills and peer groups, which occur earlier with girls than with boys, end up using more indirect forms of aggression (Lagerspetz, Bjorkqvist & Peltonen, 1988). As seen in an earlier study, McCabe and Lipscomb (1988) found that older girls used a non-confrontative verbal aggression almost solely. Further, 29% of all verbal aggressive comments were directed toward someone other than the victims of their hostility. In this way, the aggressor maintained their anonymity as the aggressor from the target. Although researchers in this study did not examine age as it related to aggression, the girls who participated in this study were identified as pre-adolescent. Thus, age may be an important factor when assessing the type of aggression used by girls.

Hyde (1984) examined 143 studies on gender differences in aggression including 63 studies used by Maccoby and Jacklin (1974) in their meta-analysis. Her criticism of the Maccoby and Jacklin review was that their study was not a truly developmental analysis because they limited their review to studies of children six years old and younger. Hyde presented a comprehensive meta-analysis providing estimates of the magnitude of the differences and included the developmental effects for all ages for which she was able to obtain data. Hyde found a modest negative association between age and magnitude of gender differences. Gender differences in aggression were larger for younger children and smaller for older children. Hyde recommended cautious interpretations of her findings noting that studies on age are confounded by a number of design features, particularly on the kind of aggression being measured in the study.
In assessing whether girls’ normative beliefs about aggression changed with age, Crick, Bigbee and Howes (1996) found that when examining girls’ responses regarding girls’ angry behavior, girls’ normative beliefs about angry behavior changed with age. In this study, conducted in the U.S.A., a total of 459 subjects, 239 boys and 220 girls ages 9 to 12 years old were asked a series of open-ended questions related to what they believe girls do when being aggressive and what boys do when being aggressive. Fourth-grade girls viewed relational aggression as the norm for angry behavior and sixth grade girls viewed relational aggression as more normal for girls than did third and fourth-grade girls. Older girls viewed relational aggression as more normal than the younger girls.

Age was also a factor examined by Lindeman, Harakka and Keitikangas-Jarvinen (1997), when they studied girls in three age groups (preadolescence, mid-adolescence and late adolescence), aggression and social cognition. In this study, conducted in Finland, a total of 2,594 subjects, 1,307 girls and 1,287 boys, ages 11, 14, and 17 years old, participated using self-report methods. Fourteen-year-old girls were found to use aggressive methods more than the 11 year olds and the 17 year olds; however, no differentiation was made as to whether the aggressive techniques were direct or indirect.

“The most important finding was that aggression developed curvilinear in adolescence: whereas aggression was the least often used reaction in preadolescence, it was the most often used reaction in mid-adolescence”.

This phenomenon may be further understood by the possibility that adequate pro-social strategies may not be available in mid-adolescence. “At age 11, pro-social reactions were the most often used reactions whereas at age 14, pro-social reactions were at their lowest level. Furthermore, among girls, the
decrease ended at age 14, whereas boys’ pro-social reactions continued to decrease from mid-adolescence to late adolescence”. Behaving in a pro-social manner is thus more important to 11 year old girls than 14 year old or 17 year old girls, where using indirect, anonymous methods of aggression seemed optimal for the 11 year olds.

In a study of children ages 8, 11, 15 and 18, Bjorkqvist, Osterman and Kaukiainen (1992) found that girls were more relationally aggressive than boys across all except the youngest age group. These findings depicted an increase of relational aggression among girls as they age from the youngest age group, age eight, to the next age group, age eleven. According to Bjorkqvist et al., school-aged girls learned ways of harming others through attacking social reputations or standing without risking themselves to retaliation because they matured earlier and had improved social intelligence in comparison to boys.

Crick and Grotpeter (1995) also found that fifth and sixth grade girls viewed relational aggression as a more typical expression of anger toward a peer when compared to third grade girls, supporting the theory that as girls mature, relational aggression becomes the optimum choice in expressing anger.

Using a peer rating method, Lagerspetz et al. (1993) studied the indirect aggression patterns among 11- to 12-year-old boys and girls. As predicted, girls in this age group preferred more indirect means of aggression while boys preferred more direct forms of aggression. The indirect means of aggression in this study included circumventory behavior that “exploits social relations among peers in order to harm the person at whom the anger is directed” which is similar to Crick’s definition of relational aggression. There were significant differences between the boys and the girls in this study where girls more typically chose the indirect means while the boys typically chose the direct means of aggression.
Supporting the idea that age of the participant may play a critical role in predicting aggression type, Henington, Hughes, Cavell and Thompson (1998) wrote that, “Between the ages of 8 and 11, girls appear to increase their reliance on relational aggression, whereas boys decrease their reliance on relational aggression”. Age eleven appears to be a critical turning point for girls with respect to the type of aggression selected.

Relational aggression is thus a form of aggression, primarily used by girls who have developed social skills to be able to successfully implement this indirect form of aggression. Outcomes of such aggression can be detrimental, and according to some researchers can lead to social-psychological maladjustment (Crick & Grotpeter, 1995; Crick, 1996; Crick & Bigbee, 1998), peer rejection (Crick, Casas & Moser, 1997; Hennington, Hughes, Cavell & Thompson, 1997), higher distress levels (Crick, 1995), and withdrawal and depression (Hughes, Cavell & Thompson, 1997) for the instigator and/or aggressor. Additionally, the victims or the target of the relationally aggressive acts are primarily girls (Crick & Bigbee, 1998) who also report higher levels of distress, feelings of being upset, hostile attributions (Crick, 1995), loneliness, social anxiety, submissiveness and peer rejection (Crick & Bigbee, 1998).

Researchers have found that relational and overt aggressions are positively related to peer rejection for both boys and girls, and negatively related to future peer acceptance for girls only (Crick & Grotpeter, 1995; Crick, Casas & Mosher, 1997; Crick, 1996; Crick, 1997; Henington et al. 1998). Additionally, friendships of girls who are relationally aggressive suffer higher levels of conflict, betrayal and exclusivity (Grotpeter & Crick, 1996; Rys & Bear, 1997) than friendships among girls where neither girl is relationally aggressive.
2.4.3 Psychosocial Maladjustments

One of the hypotheses that Crick and Grotpeter (1995) investigated in their study was that aggressive children would be more socially and psychologically maladjusted than non-aggressive children. Using a self-report method, 491, 3rd, 4th, 5th, and 6th grade, boys and girls completed the Asher and Wheeler (1985) Loneliness Scale, the Franke and Hymel (1984) Social Anxiety Scale, the Children's Depression Inventory (CDI) and an adaptation of Crick's (1995) Children's Peer Relations Scale. An analysis of the peer nomination scores yielded a significant main effect of the aggression group for peer rejection. Peers disliked aggressive children.

Additionally, aggressive girls, reported higher levels of loneliness than non-aggressive boys and girls. Loneliness scores for aggressive boys, however, did not differ from their non-aggressive peers. Further, aggressive children reported significantly higher levels of depression than non-aggressive peers.

When examining self-perceptions among the 491 participants, Crick and Grotpeter (1995), found that aggressive children perceived themselves as not being accepted by their peers and felt more isolated from their peers with aggressive girls reporting significantly more isolation from peers than both nonaggressive girls and boys. In assessing the relationship between relational aggression and status group membership, Crick and Grotpeter found that rejected children were significantly more relationally aggressive than the children in all other status groups including popular and neglected children.

Hennington et al. (1998) found that for girls, withdrawn/depressed nominations were significantly and positively associated with relational and overt aggression; however, these scores were significantly higher for girls than for boys. As part of their study on gender differences in aggression and
the prevalence of relational aggression in boys and girls, Hennington, et al. examined whether there was an association between relational aggression, overt aggression and peer perception of liking, disliking and other social behaviors. In this study, a total of 904 subjects, 461 boys and 443 girls, in grades 2 and 3, participated.

Hennington et al. (1998) found that “girls who exhibited high levels of overt aggression with or without high levels of relational aggression were most likely to be rejected (75% of overtly aggressive girls and 47% combined aggressive girls)”

Girls who were classified as relationally aggressive were rejected (25% of relationally aggressive girls) and some were even perceived as popular (16% of relationally aggressive girls). “Both types of aggression explained a similar amount of variance in peer rated liking, disliking and social behaviors “. Further, for both boys and girls the strength of the association between overt aggression and relational aggression and peer-rated variables was similar, except for a much stronger association between relational aggression and peer-rated withdrawal/depression for girls (r=.22) as compared to boys (r=.03). Thus, there is a greater chance that girls who are relational aggressive will be viewed by their peers as shy, withdrawn or sad.

2.4.4 Genetic Vs Environmental Influence on Aggression – Study on twins

To corroborate the genetic vs environmental influences on level of aggression, in a very different vein, is a British twin study (Eley, Lichtenstein, & Stevenson, 1999) in which parents of 501 twin pairs completed the Aggression (e.g., fighting, threatening) and Delinquency (non-aggressive antisocial behaviour, e.g., lying, cheating, stealing) subscales from the Child Behaviour Checklist (Achenbach, 1991). This study was included in this
review even though the age range was 8-16 years because the researchers began with 13-year old twins from a British Register for Twins and then recruited additional families from twins clubs. No mean age was reported for the study. This sample had low aggression scores with means on the two aggression scales being lower for both boys and girls than means reported for American children in the test manual. Within-pair correlations on Aggression scores resulted in .77 for identical female twins, .44 for fraternal female twins, and .27 for opposite sex twins. Male data was similar on this scale which indicates the presence of some genetic effects for aggression scores because of the higher correlation between identical twins.

The data were different for non-aggressive antisocial behaviour (Delinquency subscale). While the female correlational pattern was similar to the Aggression scale (.75 identical twins, .57 fraternal twins, and .32 opposite sex twins), for males there was no difference between the correlations for the two types of twins (.65 identical twins, .66 fraternal twins). In addition, the correlation between aggressive and nonaggressive antisocial behaviour was .55 for females (Eley et al., 1999). These high correlations and more similar values for both types of twins in both sexes suggest shared environmental influences for nonaggressive antisocial behaviour. However, the larger difference between the correlations of the two types of female twins compared to the boys suggests that genetic factors play a greater role in nonaggressive antisocial behaviour for girls. The lower correlations in the opposite-sex pairs also imply sex differences in the etiology of both types of antisocial behaviour. While there may be a genetic factor in both aggressive and nonaggressive antisocial behaviour for girls, Paikoff et al. (1991) found no relationship between hormonal status and aggressive behaviour in their sample of 10-14 year old girls.
2.5 Aggression, Peer Influence & Friendships

During early adolescence, the function and importance of the peer group change dramatically (Crockett, Losoff, & Petersen, 1984; Dornbusch, 1989). Adolescents, seeking autonomy from their parents, turn to their peers to discuss problems, feelings, fears, and doubts, thereby increasing the salience of time spent with friends (Sebald, 1992; Youniss & Smollar, 1985). However, this reliance on peers for social support is coupled with increasing pressures to attain social status (Corsaro & Eder, 1990; Eder, 1985). It is during adolescence that peer groups become stratified and issues of acceptance and popularity become increasingly important. Research indicates, for example, that toughness and aggressiveness are important status considerations for boys, while appearance is a central determinant of social status among girls (Eder, 1995). Some researchers believe that the pressure to gain peer acceptance and status may be related to an increase in teasing and bullying. This behavior may be intended to demonstrate superiority over other students for boys and girls, either through name-calling or ridiculing.

Peers can play a dual relationship in both the promotion and protection from aggression among children and adolescents (Matthews, 1998). However, unlike boys who see popularity increase within a select peer group when they express aggression, girls seem to be the recipients of rejection at the expression of their aggression (Messer & Gross, 1994). This relationship seemed to hold for girls who were expressing relational, as well as overt forms of aggression (Crick, 1996; Rhys & Baer, 1998).

While the results of expressed aggression for girls may be different than for boys, the victimization pattern may be quite similar. In a study reported by Matthews (1998), girls reported they were most likely to be victimized by another girl; boys reported that they were most likely to be victimized by another boy. Matthews concluded that the role of aggression amongst female
peers may indeed be quite similar to that of males. That is, children and adolescents are aggressive with one another primarily for competition, status and dominance.

As part of a larger longitudinal study examining biological and social-contextual factors on adolescent aggression, Caspi et al. (1993) assessed whether association with delinquent peers was related to aggression in girls. They found that females who had a history of aggressive behaviour were more likely to know delinquent peers than females without aggressive problems, t(127) = 2.16, p <.05. Similar to findings with males (Patterson, 1992), aggressive girls may continue to have behaviour problems because associating with delinquent peers provides more opportunities for engaging in delinquent behaviours.

Woodward and Fergusson (1999) have reported data suggesting that girls reflecting high rates of early relationship problems continued to report behaviour problems into late adolescence. These later difficulties included criminal offending and aggression.

Friendships with relationally aggressive girls are reported as having more incidents of betrayal, higher levels of exclusivity and more conflict than friendships with non-relationally aggressive girls. Grotpeter and Crick (1996) examined friendships among relationally aggressive girls in a pilot study of 171 participant girls in grades 3, 4, 5 and 9, and found that girls who were friends with relationally aggressive girls reported more relational aggression in their friendships, more intimacy and more conflict and betrayal. Additionally, girls reported that there were higher levels of exclusivity in the relationship, with increased levels of divulging personal information.

Rys and Bear (1997) also explored the association between various behaviors, including friendship and social outcomes. The behaviors examined
in this study were: Physical aggression, relational aggression and pro-social behaviors including friendships. The social outcomes examined in this study were: peer rejection, acceptance and reciprocal friendships. Specifically, when examining relational aggression and popularity, Rys and Bear found that “among girls, negative nominations [peer rejection] were more strongly associated with relational aggression than with overt aggression. However, the difference in magnitude of correlation coefficients for these two variables was statistically significant only in 6th grade (z=2.42, p<.01) and only when aggression was assessed by peers”. Thus, being friends with a relationally aggressive girl may cause higher levels of distress and uneasiness and instills fear of being rejected or targeted by the aggressor. The target or victim of the relationally aggressive act can also experience negative consequences.

2.6 Dimensions of Friendship

Based on his and others' work, Youniss (1980, 1986) provides a rich description of the development of reciprocity in friendships and peer relations. Before the age of nine years, children engage in direct reciprocity. Positive behavior is responded to with positive behavior; negative behavior is responded to with negative behavior. When positive acts are reciprocated, children are friends; when negative acts are reciprocated, they are not. Relationships are defined in terms of the concrete interchanges and thus, are not very stable. Around the age of nine, children began to recognize that friendships transcend specific acts of positive reciprocity. Cooperation begins to be treated as a principle, and friendship is defined as a relationship that is sustained by cooperation. Children also emphasize the importance of treating their friends as equals. Certainly, they do not always act this way, but when the principle of equality is violated, they recognize remediation must occur if the friendship is to be sustained.
In early adolescence, the principle of equality is expanded into a sense that friends have similar personalities and partially share an identity. They not only respond to each others' needs, but also come to one another with their problems and concerns. Children also learn to co-construct or mutually develop a relationship through their interactions with peers. Play or conversation may be used as a means of developing a shared meaning or elaborating a mutual theme (Youniss, 1986). Because they are peers, neither child's ideas are inherently preferred or accepted; instead each must express his/her ideas or feelings and the two must work together to determine how to proceed. As a consequence, they learn interdependence and mutual respect. As they grow older, children become more effective in producing a joint reality through the relationship they have mutually developed. A sense of mutuality or "we-ness" emerges.

Early relationships with caretakers play a critical role in the development of trust and the capacity for intimacy (Collins & Sroufe, in press), but such competencies are further developed in Role of Peers & children's friendships. Intimacy and disclosure change from being unidirectional to mutual. Children not only learn how to turn to peers, but also how to listen and be supportive. The mutuality and intimacy of pre-adolescent friendships or chumships provide opportunities for consensual validation of one's worth (Sullivan, 1953).

Similarly, children's initial lessons in learning how to resolve conflicts occur in interactions with parents, but the interactions with peers provide new challenges. If they choose, parents can determine the outcome of a conflict, whereas the successful resolution of a conflict between peers usually requires negotiation on the part of both parties, as the participants are equal in status and power. Moreover, if the resolution is unsatisfactory to either participant, s/he has the option of ending the relationship. Consequentially, coercive
conflict strategies are minimized in friendships because of the voluntary nature of the relationship (Laursen, Hartup, & Koplas, 1996).

As these ideas concerning intimacy and conflict resolution illustrate, peer relations and parent child relationships are expected to have synergistic effects on development. Earlier experiences with parents influence children's peer relationships. At the same time, friendships and other peer relationships provide further opportunities for development, and the course of that development is not fully dictated by past experiences with parents.

Similarly, the cognitive representations children have concerning friendships are expected to be influenced by their representations of their experiences with parents, but they may also be influenced by experiences in their friendships (Furman & Wehner, 1994).

2.7 Socio-Economic Factors

Socio-economic status accounts for a large part of the variance in parenting practices. Bronfenbrenner’s (1989) Ecological Systems Theory shows that differences in macrosystems (the general cultural milieu) affect microsystems (such as family, peers, school, and the community) as they influence the child’s development. Bronfenbrenner explicitly predicts that macrosystem differences such as socioeconomic status and racial or ethnic group membership result in very different developmental outcomes.

2.7.1 Socio-Economic Status & Aggression

Economic hardship influences children through its effect on the parents. Economic hardship and adaptations to hardship increase husband's but not wives hostility and negative behavior toward their spouses. Financial difficulty
is related to irritable parenting and parent's irritable responses to discipline situations evoke expressions of aggression in their adolescent children. The concentration of poverty and diminished employment opportunities for under-class exacerbates the despair and hopelessness which characterize the economically under privileged (Wilson, 1987). Skinner, et al. (1992) has linked economic hardship to adolescent aggression in a middle-class rural sample.

McLoyd's (1990) literature review presents evidence that anxiety, depression, and irritability - states heightened by economic hardship - increase the tendency of parents to be punitive, erratic, unilateral, and generally non supportive of their children. Poor mothers value obedience more, are less likely to use reasoning, and more likely to use physical punishment as a means of disciplining and controlling the child. McLoyd also shows that in both black and non-black families poor parents who are supportive but firm and consistent disciplinarians are more likely to have children who function well socio-emotionally and academically than those who are punitive, power assertive, and erratic.

Kohn (1969) found that work related differences in values correspond to child rearing practices. Men in middle-class occupations, jobs that usually permit considerable self-direction, report weighing their child's intention when considering discipline. Middleclass parents favor psychological disciplinary techniques, such as withdrawal of love to shape their children's behavior. Working-class parents tend to favor physical discipline, punishing children as a consequence of their actions, deemphasizing intention.

2.7.2 Aggression & Family Factors

Numerous studies have demonstrated the importance of family processes and family dynamics in promoting and maintaining aggressive behaviours and attitudes (e.g., Farrington, 1992; Patterson et al., 1989; West & Farrington,
Beginning with the family variable of communication styles, Heaven (1994) examined the relation between adolescents’ perceptions of the quality of family communication style and their self-reported aggression. Using the 40-item Family of Origin Scale (Manley et al., 1990), family communication style was examined with respect to positive communication (e.g., encouraging child to express views), negative communication (e.g., "unpleasant atmosphere in family"), and acceptance of loss. Only negative communication correlated significantly, but weakly, with self-reported violence in females indicating that girls from families with more negative communication patterns tended to report higher levels of aggression.

The influential role of parents as models in adolescents’ social learning was explored in several studies. Bjorkqvist and Osterman (1992) provided a comprehensive study of the influence of exposure to parental behaviour on adolescent aggression. Consistent with social learning theory, the findings show a strong relationship between parental behaviour and their children’s aggressive behaviours. For example, females who witnessed verbal aggression by parents had higher levels of verbal aggression. The authors distinguished between two contexts: at home and with friends. Interestingly, across various types of aggression, a stronger association was found between parental behaviour and aggression at home for females than was found for males.

Fathers’ behaviour was more strongly related to daughters’ aggressive behaviour than to sons’ aggressive behaviour. In fact, further analyses indicated that some behaviours of fathers that were strong predictors of female aggression were significant negative predictors for males (e.g., hitting). In contrast, the behaviour of mothers was more strongly related to their sons’ aggression than to their daughters’ aggression. The authors argue
that males may not be as influenced by their fathers because they distance themselves and, therefore, may not identify with the same-sex parent.

To further understand the role of parents in the socialization of aggression, Bjorkqvist and Osterman (1992) conducted structural equation analyses examining the interaction between parental behaviour, emotional relationship with parent, and aggressiveness. They found that a child's emotional relationship with a parent was the strongest single predictor of children's aggressiveness. However, it should be noted that the influence of mother's behaviour only included shouting and father's behaviour only included hitting and drinking alcohol.

Another aspect of parental behaviour, problem-solving strategies, was examined by Pakaslahti et al. (1998). Comparing aggressive and nonaggressive girls, the study examined group differences in the influence of mothers' and fathers' social problem-solving skills. Fathers of aggressive girls tended to produce less problem-solving strategies than fathers of nonaggressive girls. With respect to solving problems in interactions, mothers were the only parents to have a significant influence. Mothers of aggressive girls tended to be more indifferent, more reprimanding, and tended to discuss problems less with their daughters than mothers of nonaggressive girls.

The influence of parenting style on adolescents' aggression also was examined in three studies (Carlo et al., 1999; Saner & Ellickson, 1996; Viemero, 1996). Viemero (1996) found that girls who were rejected by their parents were more likely to be aggressive. Further, Carlo et al. (1999) found that the more supportive and involved parents were in their adolescents' lives (regardless of gender), the less likely their children would engage in physical aggression. In a similar vein, Saner and Ellickson (1996), in a longitudinal study of youth, report from a logistic regression that low parental support and affection predicted persistent hitting and predatory violence in females. Although these variables were significantly related for both genders, the
relationship between low parental support and violence was stronger for the adolescent girls. Lastly, disrupted family status was predictive of persistent hitting only for girls.

Several studies also examined the extent to which parental neglect and abuse affected the expression of aggression in adolescent girls. Langhinrichsen-Rohling and Neidig (1995) asked economically disadvantaged youth to complete surveys concerning their own history of victimization and the extent to which they are violent towards their parents, siblings, friends, or strangers. Victimization by parents was significantly associated with daughters’ perpetration against parents and friends. From a stepwise multiple regression, 39% of the variance in girls’ perpetration against parents was accounted for from the four predictors of sibling victimization, parent victimization, friend victimization, and witnessing parental aggression.

These studies illustrate the importance of family factors in relation to aggression in adolescent girls. Both maternal and paternal verbal and physical aggression were significantly related to daughters’ aggression at home and with peers (Bjorkqvist & Osterman, 1992). Negative communication styles by parents (Heaven, 1994; Pakaslahti et al., 1998), parental rejection (Viemero, 1996), or low parental support (Saner & Ellickson, 1996) were also related to adolescent girls’ aggression.

### 2.7.3 Parental Occupation

Kohn and Schooler (1973) also found that parents who work in occupations which involve close supervision, have low substantive complexity, and routinized flow of work are lower in intellectual flexibility and hold values of conformity to authority for their children. Conversely, occupational conditions conducive to the exercise of self-direction in one’s work are empirically tied to intellectual flexibility and parent’s valuing self-direction for both themselves and their children.
Middle-class workers have always had the opportunity to take initiative, and use thought and independent judgment in their work. These are job characteristics which seem to facilitate adult development (Crouter, 1984). Kohn and Schooler (1973) have shown that unskilled employment in large bureaucratic organizations does not allow workers to use initiative, thought and independent judgement in one's work, to direct one's own occupational activities.

2.7.4 Maternal Employment

Among lower-class families maternal income makes an important contribution to the family's economic well being. Poor mothers are likely to work because of necessity and are more likely to use an authoritarian parenting style (McLoyd, 1990). However, poor mothers who work in participative settings should be more likely to use an authoritative style of parenting which is conducive to children's socio-emotional functioning, academic achievement and lower the level of Aggression. Parents who have complex jobs could be expected to value self-direction for their children and to hold sophisticated and complex pro-social skills and conflict resolution scripts which they could teach to their children; consequently, the children would be more likely to use pro-social scripts with better conflict solving strategies and will avoid aggressive behavior.

2.7.5 Aggression & Effects of Televised and Video Violence

While there is considerable evidence regarding the effects of televised violence in influencing aggression in children (Sege, 1998), the tendency has been for the literature to not differentiate the effects by gender. As a reminder, the general literature on the effects of violent television suggests children’s viewing of violent television increases the risk of subsequent violence. But, the relationship may not be that simple nor straightforward. What also seems
to come through in that work is the finding that certain types of children seem to develop a preference for violent content, and hence, there appears to be a reciprocal aspect to that relationship. Individual differences play a role in understanding the influence of exposure to violent content in the media.

The few studies on the effects of video violence on girls’ behavior present a different pattern when contrasted with the effects for boys. Fling, Smith, Rodriguez, Thornton, Atkins and Nixon (1992) found that girls were simply not attracted to violent content in video programming to the same extent as boys when youths in grades 6 to 12 were asked for their attitudes regarding violent TV watching and violent video games. This finding seems, in part, to reflect a heightened sensitivity for girls regarding violent content that is expressed as rejection for increasing exposure. Aluja-Fabregat and Torrubia-Beltri (1998) found that girls rate the amount and intensity of violence in videos higher than boys with coincidentally lower levels of enjoyment in their viewing. It would appear from these findings that, what boys see as enjoyment and entertaining, girls see as being “just plain violent.” It would seem, therefore, in the few studies available, that girls may not be influenced in the same manner and degree in developing a pattern of violent reactions as a result of exposure to media violence.

2.8 Instrumentation for Aggression

Most studies on aggression have been conducted using observational techniques in school-yards, where only physical aggression can be distinguished (Bjorkqvist & Niemela, 1992). With the introduction of indirect types of aggression, researchers saw a need for a different technique in assessing the prevalence of aggression. Indirect aggression, however, was still ambiguously conceptualized and not clearly defined (Bjorkqvist, 1994). Bjorkqvist and her colleagues began to investigate female aggression types. Through extensive interviews with adolescent girls, they formulated specific behaviors identified by girls as being typical aggressive conflicts with each
other. Based on these interviews, Bjorkqvist & her colleagues developed a peer nomination technique to measure indirect aggression, the Direct & Indirect Aggression Scales (DIAS) (Bjorkqvist, Lagerspetz & Osterman, 1992).

2.8.1 Peer Nomination Measures

Peer nominating techniques have been found to be valid and reliable in many studies on aggression (Huesmann & Eron, 1984; Huesmann, Eron, Lefkowitz & Walder, 1984). “Since indirect means of aggression are used exactly in order to cover one’s harmful intentions from the target person, self-reports of indirect aggression are not likely to be honest” (Bjorkqvist, 1994, p. 183). Because indirect aggression is not visible through observations alone and indirect aggression is covert, where the aggressor can remain anonymous to the target child to avoid counterattack, observational studies are not considered as effective as peer-nomination. The DIAS developed by Bjorkqvist and her colleagues, measures both direct and indirect aggression using a peer nomination method where participants identify classmates who behave in various aggressive ways (Bjorkqvist, 1994).

Crick and Grotpeter found that the peer rating scales used by Lagerspetz, Bjorkqvist and Peltonen (1988) confounded relational aggression with non-verbal aggression. One of the goals for Crick and Grotpeter’s study was to develop a reliable measure of relational aggression which did not confound relational aggression with any other type of indirect aggression. They developed a peer nomination scale, the CSBS-P to specifically measure relational aggression among other types of aggression. The CSBS-P asks participants to identify three peers that behave in ways described on the 15 item instrument.

In studies where peer nomination instruments were used to assess the prevalence of indirect and direct aggression among girls and boys, girls were identified as exhibiting more indirect aggressive behaviors (i.e., intriguing,
verbal aggression, spreading of rumors) while boys were identified as exhibiting more direct means of aggression (i.e., bullying, fighting) (Lagerspetz, Bjorkqvist & Peltonen, 1988; Pakaslahti, Keitikangas- Jarvinen, 1997; Archer & Westerman, 1981; Cairns, Cairns, Neckerman, Ferguson & Gariepy, 1988).

2.8.2 Self-Report and Teacher Report Measures

In addition to using a peer-nomination instrument, researchers have implemented various combinations of types of instruments in measuring or rating aggression. Crick and Grotpeter (1995) created both a self-report version (CSBS-S) and a teacher-report version (CSBS-T) of the Children’s Social Behavior Scale - Peer Nomination (CSBS-P) to ask the participant about his or her own behavior and to ask the teachers about student behavior.

Several researchers have administered only self-reports (Crick & Bigbee, 1998; Crick, Bigbee & Howes, 1996; Carlo, Rafaelli, Laible & Meyer, 1999), or only teacher reports (Crick & Dodge, 1996) or a combination of peer-nomination with self-reports (Lagerspetz, Bjorkqvist & Peltonen, 1988; Crick & Werner, 1998), and combinations of peer-nomination with teacher reports (Crick & Casas, 1997; Crick, 1997; Crick, 1996; Hennington, C., Hughes, J. N., Cavell, T. A., & Thompson, B. 1998) in measuring aggression. Self-reports included open-ended questions, such as “What do most boys do when they are mad at someone?” (Crick, et al, 1996) and survey questions such as “How often does another kid say they won’t like you unless you do what they want you to do?” (Crick & Bigbee, 1998).

A combination of peer-nomination and self-report instruments was administered by researchers in a study on aggression by Lagerspetz, Bjorkqvist and Peltonen, (1988).
Literature survey on the instrument amply indicates that a variety of methods have been used to assess indirect, relational and overt aggression. The development of DIAS peer nomination instrument by Bjorkqvist, Lagerspetz and Osterman, (1992) and subsequently the CSBS-P, the CSBS-S and the CSBS-T, have enabled researchers to examine indirect and direct aggression and in some cases more specifically relational aggression, more effectively.

2.9 Instrumentation for Peer relationship

Historically, friendship has received less attention than topics like popularity or rejection, or even peer-directed behavior by the individual child such as aggression versus pro-social behavior (Hartup, 1970, 1983; Hartup W.W., 1996). Socio-metric methods, are relatively easy to implement and are a good fit for classroom-level data that yield indices of children's likeability and acceptance by the peer group. Likewise, observations of individual children's peer-directed behavior such as aggression and pro-social behavior, whether they are obtained in naturalistic settings or using laboratory manipulations, yield relatively straightforward interpretations at the level of the individual child. Measurement issues for assessing children's friendships, however, are longstanding and remain difficult to solve.

Because friendships exist between children, and are neither group nor individual constructs, it is particularly challenging to operationalize them. Thus, unique assessment techniques have been developed to identify and study children’s dyadic relationships with one another.

Perhaps the most challenging issue is establishing the defining features of children's friendships (Bukowski & Hoza 1989; Furman, 1996). This is particularly difficult because the nature of friendship changes with
development, even while fundamentals such as companionship, reciprocity, and shared positive affect remain constant (Berndt, 1989; Gottman, 1983; Hartup W.W., 1996).

These include behavioral observations that concentrate on the frequency, stability, and affective quality of children’s interactions with each other (e.g., Berndt, Perry, & Miller, 1988; Gottman, 1983; Hartup et al., 1988). **Children’s Enjoyment, Acceptance, Trust, Respect, Mutual Assistance, Confiding, Understanding and Spontaneity and other indices of their relationship are tallied or rated from naturally occurring interactions.** Children’s interactions can then be compared to determine which features distinguish friends from non-friends. Teachers or parents are also sometimes asked to identify children’s friends. Children themselves are often asked to identify their friends using questionnaires or interviews, as well as to report on the characteristics and quality of their friendships and peer relationships.