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Social Behavioural Correlates of Risk in Peer Relations: A Multimethod Assessment of Aggressive, Withdrawn, and Aggressive-withdrawn Children

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ABSTRACT

Social Behavioural Correlates of Risk in Peer Relations: A Multimethod Assessment of Aggressive, Withdrawn, and Aggressive-withdrawn Children

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Concordia University, 1992.

Early failure in peer relations is widely recognized as predictive of maladjustment, and numerous studies have identified social skill deficits as an important factor contributing to difficulties with peers. The present study examined the social behavioural correlates of children (9-11 years old) at risk in peer relations, identified as extreme on the aggression and/or withdrawal factors of the Pupil Evaluation Inventory (PEI; Pekarik et al., 1976). Playground observations revealed social entry profiles (Study 1) for the peer-identified Aggressive group and the Withdrawn group consistent with the groups' extreme ratings on global PEI factors. Withdrawn boys and girls initiated interaction at a relatively low rate, exhibited the least aversive social entry style, and were comparable to an "average" Contrast group on a measure of peer likeability. Aggressive boys and girls exhibited elevated rates of aggressive and inappropriate social entry, but only Aggressive girls were significantly different from the Contrast group in this respect. Aggressive boys were more successful in peer relations than Aggressive girls, possibly due to the degree to which girls' aggression is inconsistent

with same-sex normative playground behaviour. In contrast, Aggressive-withdrawn boys and girls exhibited a social entry profile that was not significantly different from Contrast peers, and which failed to account for the group's significantly lower likeability scores. Analysis of peer nominations on individual items of the PEI (Study 2) provided additional information on the Aggressive and Withdrawn groups, and revealed a distinct social profile for the Aggressive-withdrawn children. The PEI item profiles for Withdrawn children were consistent with the observational findings and provided evidence of the self-isolated nature of the group. While aggressive threats were characteristic of Aggressive boys and girls, the Aggressive boys' profile also revealed several "competent" modes of seeking attention which may further account for their success with peers relative to Aggressive girls. Finally, Aggressive-withdrawn boys and girls were clearly characterized by PEI items reflecting immaturity, disruptiveness, and emotional lability, suggesting that low likeability and rejection may follow from the degree to which Aggressive-withdrawn children interfere with group activities. Social behavioural profiles are discussed with respect to the relative risk status of the groups, implications for intervention, and the degree of correspondence between sociometrically and behaviourally defined risk classifications.

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Integration into the complex peer network represents one of the critical tasks of childhood. For some, this task seems relatively easy, and could hardly be construed as work. Such children enjoy many strong friendships and relative harmony in their frequent peer interactions. For others, attempts to find their place within the peer group seem futile, rarely resulting in sustained positive involvement with peers.

Investigation of the causes and consequences of difficulties in peer relations represents an important area of research with implications for the early identification of children at risk and the development of intervention programs. The present study represents a multimethod assessment of the social behaviour of children believed to be at risk in their peer relations. The primary aim is to establish characteristic behavioural profiles for children identified by peers as aggressive or withdrawn, with an emphasis on a group of children identified by peers as extreme on both major dimensions.

This section proceeds with several literature reviews including: a) a brief description of the use of peer ratings and behavioural observation in the assessment of peer relations, b) an overview of studies addressing the predictive validity of measures of peer relations, and c) a review of research aimed at identifying the behavioural correlates of children identified as having difficulties in

peer relations. Finally, the aims of the present study and hypotheses are presented.

The Assessment of Peer Relations

Considerable research has been devoted to understanding the nature of children's peer difficulties and, in fact, such efforts have clearly intensified over the past 20 years (Rubin, 1983). Peer and teacher ratings, and behavioural observations represent the three major sources of information on children's peer relations. Two of these procedures, peer ratings and behavioural observation, represent direct attempts to assess the quality of a child's relationship with his or her peers. The procedures for peer ratings and behavioural observation are briefly reviewed below with an emphasis on the most common peer nomination and rating techniques.

Behavioural Observations

Researchers have increasingly relied on observations of social behaviour in recent years and several important advantages and disadvantages of direct observation have been enumerated. Perhaps the major limitation of the observational approach is the cost in terms of both time and money. Whereas a behavioural checklist can be completed in several minutes, it is usually necessary to conduct observations of social behaviour over the course of several weeks or months in order to ensure a representative sampling

of behaviour. On the other hand, many researchers believe that direct observation represents the most face valid method of assessment (e.g. Hymel & Rubin, 1985), requiring only minimal inference about what the data represent (Foster & Ritchey, 1979). A wide variety of observational methodologies have been developed, varying along several important continuums ranging from naturalistic to contrived, structured to free-play, and classroom to playground. Complementary to the numerous methodologies, observational coding systems are designed to tap the various behavioural dimensions of interest.

Researchers have made infrequent use of behavioural observation to target or identify children with peer relations problems, and the focus of such assessments has almost always been the isolated or socially withdrawn child. Specifically, time-sampling techniques have been used to identify children exhibiting a low rate of interaction with peers and, on that basis, classify them as withdrawn or isolated (e.g. Furman, Rahe, & Hartup, 1979; Greenwood, Walker, Todd, & Hopps, 1979).

Perhaps a more common use of behavioural observation in peer relations research has been to identify behavioural profiles for children previously determined to be "at risk" on the basis of peer or teacher ratings. In fact, a rapidly growing body of research involves classifying children in terms of their peer-rated social status or behavioural

reputation, and subsequently attempting to identify a characteristic behavioural profile (see Coie, Dodge, & Kupersmidt, 1990; Hymel & Rubin, 1985, for reviews).

Ratings and Nominations by Peers

Peers are frequently consulted in the initial screening and assessment of children with adjustment difficulties and, along with teachers, represent the most cost efficient source of evaluation. However, the importance attributed to peer ratings is not based on practical issues alone. Peers have been found to be better informants than adults in identifying classmates who are likely to have continuing difficulties into adolescence and adulthood (Bower, 1969; Cowen, Pederson, Babigian, Izzo, & Trost, 1973; Mednick & Schulsinger, 1970; Zax, Cowen, Izzo, & Trost, 1964). Several explanations for the predictive sensitivity of peer assessments have been proposed: a) peers provide an evaluation from the perspective of the reference group, b) peers are exposed to a wider range of contexts, c) peers are more likely to observe the rare events which may be most important to peer relations, and d) peer rating instruments reflect multiple viewpoints, in contrast to the use of a single, possibly biased, informant (Hymel, 1983). Furthermore, peer ratings are believed to offer greater stability due to an averaging of multiple raters (Moskowitz & Schwarz, 1982).

Two major techniques are used to draw upon the privileged experiences and unique position of peers in the identification of children with difficulties in peer relations: a) sociometric nominations and ratings, and b) peer assessments of social behaviour. The sociometric approaches generate measures of "social status" which have been defined as "indexes of the collective attraction of a group of children toward one member" (Parker & Asher, 1987) or, perhaps more simply, the degree to which someone is accepted by the peer group. On the other hand, peer assessments of social behaviour focus on the social skills that are relevant to, and perhaps predictive of, status or acceptance. Peer assessments of behaviour generate scores for specific behavioural items, factor scores on broad dimensions of behaviour, and overall indices of the positive or negative reputation of a child within the peer group. A description of each of these approaches is provided below.

Sociometric measures of status. The most frequently employed sociometric approach to assessing peer relations was originated by Moreno (1934) and involves children's nominations of their peers according to interpersonal criteria. The procedure is commonly used with both positive (e.g. liked most) and negative (e.g. liked least) criteria, generating scores on status dimensions of acceptance and rejection, respectively. Studies investigating the degree of relation between measures of acceptance and rejection

have found a moderate negative correlation at best (e.g. Gottman, 1977), suggesting that the two scores should be retained as distinct measures of social status (Hymel & Rubin, 1985).

Based on both positive and negative sociometric nominations, Gronlund (1959) developed a two-dimensional classification system to identify four groups of children. The four category system included: a) "Stars" - many positive nominations but few negative nominations, b) "Controversials" - many positive/many negative nominations, c) "Rejected" - few positive nominations/ many negative nominations, and d) "Neglected" - few positive nominations/few negative nominations. The major contribution of the Gronlund system lies in the differentiation of children who are actively disliked by their peers (i.e. rejected) from those who are neither liked nor disliked (i.e. neglected). Previously undifferentiated at the lower end of the social status continuum, the recent literature suggests that these two groups are distinct both in terms of behaviour profile and predictive outcome (see review below).

Several variations on the above system have evolved. Peery (1979) used positive and negative nominations to compute two new measures of social status: Social Preference (a child's positive nominations minus negative nominations) and Social Impact (the sum of a child's positive and

negative nominations). Coie, Dodge, and Coppotelli (1982) used standardized scores on the two Peery dimensions of Social Preference (SP) and Social Impact (SI) to identify five distinct status groups: Popular (high SP, high "liked most", and low "liked least" nominations), Average (average SP, average SI), Controversial (high SI, and high "liked most" and high "liked least" nominations), Rejected (low SP, low "liked most", and high "liked least" nominations), and Neglected (low SI, and low "liked least" and low "liked most" nominations).

Peer ratings of behaviour. Peer assessments of social behaviour have been a popular alternative to the sociometric procedures described above. Behaviour ratings, unlike the sociometric techniques, provide information about the specific behaviours that are believed to be relevant to social status or acceptance by peers. They usually require children to nominate peers for behavioural descriptors such as "Those who are mean and cruel to other children" or "A bully who picks on smaller boys and girls." A standardized score is calculated, based on the number of nominations a given child receives for an item. Overall indices of aggression, withdrawal, or likeability are often generated by combining scores on items deemed similar on the basis of factor analysis.

Of the peer assessment instruments currently in use, the Class Play (Bower & Lambert, 1961; Bower, 1969) and the

Pupil Evaluation Inventory (Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976) have enjoyed the widest following. The Class Play technique requires children to select classmates for roles in a hypothetical class play (e.g. "someone who is smart"), and a recently revised version of the procedure (Masten, Morison, & Pellegrini, 1985) includes 30 items loading on three factors: "sociability-leadership", "aggressive-disruptive", and "sensitive-isolated."

More recently, the Pupil Evaluation Inventory (PEI; Pekarik et al., 1976) was developed to assess peer ratings of the behaviour of male and female children in grades one through nine. The PEI consists of 35 items selected from an initial pool of 80 items loading on discrete factors in previous studies, and showing a strong association with psychopathology in the literature. The procedure for administering the PEI is similar to that of the Class Play described above. Students are simply asked to think about either the boys or girls in their class and to put an "X" under the name of everyone who fits the description on the questionnaire, choosing nominees from a list of classmates.

The items of the PEI have been factor analyzed (based on 350 ratees and 4000 raters) and found to load on three factors: Aggression, Withdrawal, and Likeability. The Aggression factor includes items indicative of class disruption, physical aggression, and attention-seeking. The

Withdrawal factor includes items which suggest social withdrawal, shyness, and oversensitivity. However, the Withdrawal factor also appears to include several items that would seem indicative of rejection (e.g. "Those who are usually chosen last to join in group activities"). The Likeability factor includes items reflecting popularity, acceptance and competence.

Social status vs. ratings of behaviour. Parker and Asher (1987) note that in discussions of peer relations there has been a tendency to treat findings from sociometric assessments of social status as interchangeable with findings from peer assessments of behaviour. Specifically, sociometric rejection is often equated with aggression, and neglect is often equated with social withdrawal. However, they note that correlations between measures of acceptance and any given behaviour are rarely high and depend partly on the age of the child, the setting, and the history of the group. Furthermore, Parker and Asher (1987) acknowledge the role of nonbehavioural factors such as physical attractiveness in predicting acceptance by peers (e.g. Langlois & Stephen, 1981). Consequently, they argue that the distinction between sociometric measures and assessments of social behaviour is important and must be preserved.

Adjustment Following Early Difficulties in Peer Relations

Studies reporting significant individual differences in children's peer status have provided the impetus for investigations of the long-term adjustment of individuals who have experienced problematic peer relations in childhood. Although such studies have consistently found that children with poor peer relations are "at risk" of developing later difficulties, the degree to which peer problems are directly or causally implicated in later maladjustment has been the focus of debate. On the one hand, proponents of a causal model attribute an important role to peer relations in determining later adult maladjustment. This position relies heavily on the theories of Piaget, Mead, and Sullivan, "each of whom accorded child-child interaction a central place in facilitating children's development" (p. 357, Parker & Asher, 1987). Hartup (1983) has also recently emphasized the critical role of peer interaction in children's development. Alternatively, proponents of an incidental model maintain that peer difficulties are simply one symptom of disturbances stemming from early forms of an emerging disorder. In this respect, "peer-relationship problems are tangential and epiphenomenal to later maladjustment, though potentially useful for screening purposes" (p. 378, Parker & Asher, 1987).

Claiming that both the causal and incidental models are deficient, Parker and Asher (1987) call for a more

comprehensive model allowing for feedback among the causes and consequences of peer relationship problems and the course of later maladjustment. Furthermore, Kupersmidt, Coie, and Dodge (1990) note that there are few empirical data to address the validity of models which attempt to explain correlational findings. In the absence of strong evidence supporting either model, a brief overview of the predictive validity of measures of peer relations follows.

Three measures of outcome which have appeared consistently in the peer relations risk literature are included in the following brief overview: school adjustment, delinquency or criminality, and mental health problems (see Parker & Asher, 1987, and Kupersmidt, Coie, & Dodge, 1990 for extensive reviews). A distinction is made between those studies that have assessed peer relations through sociometric measures of acceptance/rejection and those that have relied on acceptance-relevant behaviour such as aggression and withdrawal.

Sociometric Assessments and Later Adjustment

A major task of childhood and adolescence involves the successful completion of a secondary school education. Nevertheless, it has been estimated that as high as 20% of children fail to complete high school (recent studies suggest that the drop out rate may be as high as 35% in Quebec), and that easily half of those who drop out possess at least average intellectual ability (Havighurst, Graham, &

Eberly, 1972). Follow-back and follow-up studies have consistently supported the premise that low peer acceptance predicts later school dropping out (see Parker & Asher, 1987 for review). The effect is typically stronger for boys than for girls and there is little consensus on the age at which it is possible to distinguish future graduates and dropouts in terms of acceptance.

Delinquency and criminality represent an important dimension of adolescent and adult adjustment. However, relatively few studies have investigated the relation between sociometric measures of acceptance and later involvement in juvenile and adult crime. Support for the risk premise has been variable and studies have suggested that the distinction between neglected and rejected status is likely important in the prediction of criminal involvement. West and Farrington (1977) used only positive sociometric nominations (e.g liked most), thus failing to differentiate neglected and rejected children, and were unable to find support for the risk hypothesis with respect to juvenile crime. In contrast, Roff, Sells, and Golden (1972) found support for the link between peer status and juvenile crime when both "liked most" and "liked least" scores were used to obtain a social preference measure and, consequently, a measure of rejection. In their sample of 18,000 children, Roff and colleagues found delinquency to be predicted by peer rejection at the lower end of the SES

continuum. Very few studies have examined the relation for females separately, citing base rates of delinquency too low for statistical analysis. However, a reanalysis (Roff, 1975) of the Roff et al. (1972) data for the females in the sample found a positive relation between low peer status and delinquency, at least at lower SES levels.

Mental health has been a common outcome measure in peer relation risk studies, perhaps due to the enormous impact of mental health problems on the afflicted individual. Researchers have examined both specific diagnostic categories and nonspecified mental health problems as measures of outcome with the majority of studies demonstrating that both peer- and teacher-rated peer relation problems predict later difficulties. An often cited study by Cowen, Pederson, Babijian, Izzo, and Trost (1973) determined that negative Class Play nominations were stronger predictors of later use of mental health services than measures of physical health, intellectual potential, academic performance, self-esteem, or anxiety. Roff and Wirt (1984) conducted a follow-up of a large sample of elementary school children for whom peer status had been determined through "liked most" and "liked least" peer nominations. The prevalence rates for treated mental health problems was significantly higher for low peer status males (14%) than for middle (5.1%) or high status males (4%), and

marginally higher for low peer status females (9%) than middle (6.4%) or high status females (3.8%).

Only one study has examined long-term adjustment in risk groups while making the distinction between neglected and rejected peer status. Kupersmidt (1983) identified children as Neglected, Rejected, Controversial, Average, and Popular in the fifth grade and examined adolescent adjustment at a seven year follow-up. Rejected children were found to have twice the rate of delinquency (35% vs 17%) and almost twice the rate of school withdrawal (38% vs 21%) in contrast with the total sample. Furthermore, Rejected children were more likely to have later contact with the police and juvenile courts than were the children of Neglected status. These results provide a strong impetus for further follow-up research making the important distinction between Rejected and Neglected status groups.

Behaviour Ratings and Later Adjustment

Kupersmidt et al. (1990) note that the majority of peer relations risk studies have utilized ratings of behaviour, rather than sociometric data, in longitudinal investigations of risk for later maladjustment. The popularity of the behavioural approach to risk may follow from the belief that specific disorders can be predicted from certain patterns of early peer relations. Kohlberg, Ricks, and Snarey (1984) suggest that "if the particular forms and temporal sequences

of peer difficulties are examined, particular kinds of outcomes may be predictable" (p. 148).

Most studies following the behavioural approach have focused on aggression or withdrawal as the dimensions of interest. Aggressive/externalizing and withdrawn/internalizing patterns of behaviour have been factor-analytically identified as the two broad dimensions under which most childhood psychological problems can be classified (Achenbach & Edelbrock, 1978). Both broad dimensions are considered to be quite stable characteristics of the individual from as early as the elementary school years (Eron, 1983; Loeber, 1982; Olweus, 1977; Rubin, Daniels-Bierness, & Bream, 1984). Furthermore, by the late elementary grades, aggression and withdrawal are found to be highly cohesive behavioural categories underlying children's ratings of peers (Younger, Schwartzman, & Ledingham, 1985).

Studies investigating the relation between aggression in childhood and later school difficulties have produced somewhat inconsistent results. Havighurst, Bowman, Liddle, Matthews, and Pierce (1962) examined aggression in a grade 6-7 sample and reported that almost two-thirds of peer-rated aggressive children eventually dropped out while only one-sixth of those with very low aggressiveness scores did not complete high school. In contrast, Janes, Hesselbrock, Myers, and Penniman (1979) did not find a predictive relation between aggression and later dropping out with

respect to a guidance clinic sample. Few studies have examined the relation between withdrawn behaviour and later school maladjustment and, although several studies have found support for the link (e.g. Lambert, 1972), Parker and Asher (1987) suggest that the relation has not been adequately evaluated.

Both follow-back and follow-up studies have consistently supported a relation between childhood aggression and later involvement in juvenile and adult crime. Feldhusen, Thurston, and Benning (1973) found aggressive boys and girls to be twice as likely as non-aggressive children to have later police contact (47% vs. 22%), 7 times as likely to appear in juvenile court (24% vs. 3%), and nearly 10 times as likely to have a later conviction (9.9% vs. 1%). Many studies have reported group differences of a similar magnitude (see Parker & Asher, 1987 for review). In contrast, there is little support for the premise that childhood withdrawal relates to later criminality, despite the fact that "factor-analytic models of delinquency continue to identify a type of passive, neurotic delinquent described as anxious, shy, seclusive, sensitive, and timid" (p. 370, Parker & Asher, 1987). Furthermore, few studies have examined sex differences in this relation, or the strength of the association for girls specifically.

Retrospective and follow-back studies have frequently identified aggression and withdrawal in the childhood behaviour profile of adults diagnosed with psychiatric disorders (see Parker & Asher, 1987 for review). However, until recently, few follow-up studies had established a predictive relation between childhood aggression or withdrawal and later mental health problems. Recently, Morison and Masten (1991) administered the Revised Class Play to a normative sample of 207 children in grades three to six, generating scores on Aggression-Disruption and Sensitivity-Isolation. At seven-year follow-up, Aggression-Disruption was found to be a significant predictor of a higher externalizing composite score (including contacts with the law, mental health problems, and general externalizing symptoms), as well as lower academic achievement, and lower job competence. Sensitivity-Isolation was not predictive of later mental health problems, but was related to lower social competence (as measured by a composite of social life, social acceptance, dating, and closeness to friends) and fewer externalizing symptoms. On the basis of archival data from the Berkeley Guidance Study (Macfarlane, Allen, & Honzik, 1954), Caspi, Elder, & Bem (1988) conducted an important 30 year follow-up of children originally identified as shy and reserved. Shy boys were "more likely than their peers to delay entry into marriage, parenthood, and stable careers; to attain less

occupational achievement and stability; and - when late in establishing careers - to experience marital instability". Shy girls were "more likely than their peers to follow a conventional pattern of marriage, childbearing, and homemaking" (p. 824).

Several studies have identified a combination of aggression and withdrawal as characteristic of those at greatest risk of later maladjustment (Mednick & Schulsinger, 1968; Robins, 1972; Watt, Stolorow, Lubensky, & McClelland, 1970). For example, Michael, Morris, and Soroker (1957) followed-up boys seen at a child guidance clinic 14-29 years earlier and found that mixed reactors (identified as both aggressive and withdrawn) had a higher incidence of schizophrenia than those classified as internal (withdrawn) or external (aggressive) reactors. Recent studies by Kellam, Ensminger, and Brown (1987) and McCord (1987), examining drug abuse and delinquency, provide additional support for the view that aggression and withdrawal may be a particularly potent combination from a risk perspective.

The Concordia Risk Project. Schwartzman and colleagues (Schwartzman, Ledingham, & Serbin, 1985) have made an important contribution to this literature in the form of a prospective longitudinal study of the adolescent and adult adjustment of children identified by peers as aggressive, withdrawn, and aggressive and withdrawn on the Pupil Evaluation Inventory (Pekarik et al., 1976). Three cohorts,

in grades one, four, and seven at the time of selection (1976-77), have now entered early adulthood and have been followed-up on numerous measures of adjustment including school achievement, mental status, social service contact, and involvement in adult crime. The groups have typically been contrasted with a large control sample selected on the basis of average scores on peer-rated aggression and withdrawal.

At 5 to 7-year follow-up, Moskowitz and Schwartzman (1989) found that the peer-identified Aggressive group and Withdrawn group both showed lower self-reported school competence than the Control group. However, they have not yet confirmed whether this finding eventually leads to a higher drop out rate. A 10 to 12-year follow-up of criminal activity suggests that Aggressive males and females are more likely to have been charged with an adult criminal offence (Moskowitz, Crawley, & Schwartzman, 1989). However, Aggressive males (45.5%) were far more likely to have appeared in court than Aggressive females (3.8%). Rates for the Withdrawn males (3.8%) and females (1.8%) were not significantly different from their counterparts in the Control group (male rate of 10.8%, female rate of 1.8%). Beltempo, Schwartzman, Marchessault, and Moskowitz (1990) found a significantly higher rate of social service contacts for peer-rated Aggressive children in contrast with a Control group (17% vs. 9%). Finally, Schwartzman and

Moskowitz (1991) have examined the mental status of a representative sample of each of the peer-identified groups. Results indicate a significantly higher incidence of: a) substance abuse, and both histrionic and antisocial personality disorders for Aggressive males, b) histrionic personality disorder for Aggressive females, and c) phobic disturbances for Withdrawn females and males.

Follow-up on the children identified as both aggressive and withdrawn (Aggressive-withdrawn), believed to be at greatest risk on the basis of previous research, has been of particular interest for the Concordia Risk Project. In contrast with a Control group, Aggressive-withdrawn males and females were found to have significantly lower school competence (Moskowitz & Schwartzman, 1989). Aggressive-withdrawn males (26.1%) and females (10.1%) had significantly more court appearances for criminal offenses than Control males (10.8%) and females (1.8%) (Moskowitz et al., 1989), and an overall higher rate of contact with social service agencies (29% vs. 9%) (Beltempo et al., 1990). Aggressive-withdrawn boys were found to be at elevated risk for later substance abuse and antisocial personality disorder, while Aggressive-withdrawn girls were found to be at risk for later substance abuse, phobic disturbances, histrionic personality disorder, and major depression (Schwartzman & Moskowitz, 1991). Thus, consistent with previous studies (Kellam et al., 1987;

McCord, 1987; Michael, Morris, & Soroker, 1957), individuals identified as having shown patterns of both aggression and withdrawal in childhood are at higher risk of negative outcomes than a Control group of non-deviant children. Perhaps more important, Aggressive-withdrawn children also appear to be at risk for a wider range of difficulties than individuals identified as either primarily aggressive or primarily withdrawn.

Behavioural Correlates of Sociometric Status and Behaviour Ratings

Following strong support for the peer relations risk premise, numerous studies have focused on the behavioural correlates of peer acceptance. Based on a skills deficit model, which assumes that children often experience difficulties in peer relations due to atypical social skills (Asher & Renshaw, 1981; Ladd & Mize, 1983), the primary aim of such studies has been to identify the skills which are critical to successful peer relations. An ultimate goal in this field of research is to contribute to the development of programs of early intervention on behalf of children exhibiting difficulties with peers.

Many studies have demonstrated a correlation between patterns of social behaviour and peer acceptance. However, support for the assumption of causality, underlying the skills deficit model, has emerged only recently in the peer

relations literature. Specifically, several studies (Coie & Kupersmidt, 1983; Dodge, 1983; Putallaz, 1983) have demonstrated that "behavioral interaction style is a cause of status, not just a consequence" (p. 1428, Asher, 1983) or correlate, and that later sociometric status can be predicted from a sample of behaviour. Rubin (1983) describes these studies as "ground-breaking" in that they go beyond the correlates of status and address the behaviours that are responsible in establishing negative and positive peer reputations. Another substantial literature has taken the causal model one step further in attempting to identify cognitive, temperamental, and environmental/situational causes of skills deficits (e.g. Cairns, 1979; Dodge, 1986; Patterson, Capaldi, & Bank, 1991). While such studies have made a significant theoretical and clinical contribution to the peer relations literature, addressing the diversity of conditions underlying social skills deficits is beyond the scope of the present study.

It should be noted that the majority of studies of the behavioural correlates of status have focused on an early childhood sample, possibly due to the greater opportunities for observation in a preschool context. However, the stability of peer nominations in children below the third grade is believed to be weak (Moskowitz, Schwartzman, & Ledingham, 1985). Consequently, the following review will

focus primarily on children at the middle to late elementary school grades.

Sociometric Status Groups

Attempts to identify the behavioural correlates of sociometric measures of status have examined a wide range of social behaviours in a variety of settings (see Coie, Dodge, & Kupersmidt, 1990; Newcomb, Bukowski, & Pattee, in press, for reviews). Although numerous studies have examined the behavioural correlates of unidimensional measures of status (e.g. Coie, Dodge, & Coppotelli, 1982; Gottman, Gonso, & Rasmussen, 1975; Hymel & Asher, 1977; Ladd, 1983), the following section will focus almost exclusively on the correlates of status groups identified on the basis of two-dimensional classification systems.

Behavioural correlates of two-dimensional measures of status. Recently, researchers have emphasized the importance of distinguishing between two subgroups of unpopular children, namely those who are actively "rejected" by peers and those who are "neglected". Identification of the social behaviours differentiating the two groups is essential due to the belief that peer rejection is particularly important in the prediction of later difficulties (see Kupersmidt, Coie, & Dodge, 1990 for review). Based on several studies, behavioural profiles associated with the Rejected and Neglected groups are summarized below. Although less frequently studied, the

profile for peer-identified Controversial children is also presented when available.

Dodge, Coie, and Brakke (1982) selected groups of Popular, Average, Rejected, and Neglected children in the third and fifth grades. In naturalistic observations in the classroom and on the playground, they found that Rejected children displayed fewer task-appropriate behaviours and more task-inappropriate and aggressive behaviours. On the other hand, Neglected children displayed relatively few task-inappropriate and aggressive behaviours, and socially approached peers infrequently. Although Rejected children prosocially approached peers as frequently as the Popular children, peers' responses were more likely to be negative. Similarly, the Neglected children's social approaches were frequently met with rebuff.

Coie and Dodge (1988) conducted classroom and lunchtime observations, and collected teacher ratings and peer nominations for boys identified as Rejected, Neglected, Controversial, Average, and Popular. Rejected and Controversial boys were the most aggressive and disruptive of the groups, however Controversial boys were also characterized as highly prosocial on the basis of peer ratings and observations. Neglected boys, in contrast, were far less aggressive than any of the other boys. However, Coie and Dodge note that the Neglected boys were rated lower than the Average group on all items of the peer nominations,

and that "this may imply that peer assessments tell us nothing definitive about the behavior of neglected children except that they rarely come to their peers' minds" (p. 826, Coie & Dodge, 1988). Observations indicated the Neglected group to be the most solitary during play, and teacher ratings suggested that the Neglected boys were avoidant of aggressive interactions.

Several important studies have begun to address the causes of status, rather than simply the correlates. Coie and Kupersmidt (1983) formed play groups of Rejected, Neglected, Average, and Popular boys who met on a weekly basis for six weeks. Within half of the play groups the boys were previously familiar with one another, while boys in the remaining play groups were unfamiliar prior to the initiation of the study. Results indicated that status evaluated within the "familiar" play groups was highly correlated with school based status as early as the third play session, as might be expected due to the effect of reputation. However, the high correlation between play group and school-based peer status was also observed within the "unfamiliar" groups by the end of the three week period, thus demonstrating the re-emergence of social status within a relatively brief period. Behavioural observations revealed Rejected boys to be extremely active and aversive, but no more physically aversive than Average boys. However, group members perceived Rejected boys as starting fights.

Neglected boys were the least interactive and least aversive of the groups studied.

Employing a similar methodology, Dodge (1983) examined the behavioural antecedents or determinants of peer social status in groups of previously unacquainted second-grade boys. Boys who eventually became Rejected or Neglected within the play groups were those who engaged in inappropriate behaviours. Furthermore, Rejected boys also engaged in physical aggression more than any other group. Although Rejected and Neglected boys approached peers quite frequently, they were rebuffed at relatively high rates relative to the boys of the other status groups. Boys who were eventually identified as Controversial spent very little time in solitary play and a great deal of time interacting with peers. The Controversial boys exhibited high rates of cooperative play, but were also higher than the Average group on measures of aggressive play and hostile verbalizations. Thus, the Controversial children were quite involved with peers in both a prosocial and antisocial manner. Dodge suggests that the results underline the critical roles of social entry and aggression in determining peer status.

Social entry. Social entry has been defined as the manner in which children approach and attempt to enter into the ongoing activities of groups of their peers (Putallaz & Wasserman, 1990). Furthermore, social entry has been the

primary focus of several studies and has been described as an "important phase of social interaction that appears especially diagnostic of social skilfullness" (p. 297, Putallaz & Wasserman, 1989). Putallaz and Wasserman (1989) suggest that successful entry into the peer group is difficult in general, but especially critical for low-status children because it is a prerequisite for continuing social interaction.

Putallaz and Gottman (1981) compared the social entry attempts of popular and unpopular children and found that unpopular children were less likely to be accepted and more likely to be ignored by the groups they entered than the popular children. Unpopular children were more disagreeable than popular children and were more likely to call attention to themselves by stating their feelings and opinions, by talking about themselves, and by asking informational questions. Popular children were more likely to try to ascertain the "frame of reference" common to the group members and then attempt to fit in with the group by being relevant, making group-oriented statements, or imitating the group's actions. Putallaz (1983) examined boys' attempts to enter a group of 2 unfamiliar boys who were experimental confederates, and used the entry behaviours to predict sociometric status four months later in the first grade. Replicating previous findings (i.e. Putallaz & Gottman, 1981), Putallaz (1983) found that an effort to "fit in with

the group" (e.g. relevant comments) was predictive of higher status in first grade.

Putallaz and Wasserman (1989) aimed to extend previous findings by examining the relation between entry behaviour and status under more naturalistic conditions. Playground observations of first, third, and fifth grade children revealed low status children to be more likely to engage in passive entry attempts (hovering) and less sustained group interaction than children of high peer status. However, the passive entry attempts of the low status children were more likely to be ignored than the passive entry attempts of the high status peers. Similarly, entry attempts involving redirection (changing the group's activity) were more likely to be accepted from a high status than a low status child, suggesting that prior reputation plays an important role in determining the valence of the group's response. Overall, low status children's entry attempts were accepted less and ignored more frequently than the entry attempts of high and average status peers.

Dodge, Schlundt, Shocken, and Delugach (1983) have examined social entry in relation to the two-dimensional classification system. Consistent with previous studies, Popular children were more likely to maintain the group's frame of reference. Rejected children engaged in 10 times as many disruptive entry attempts than either Neglected or Popular children, and Rejected children were more likely to

respond negatively to the statements initiated by peers. Consequently, peers were more likely to respond negatively to the entry attempts of Rejected children. Neglected children, on the other hand, were not frequently disruptive in their entry attempts, but often employed passive entry tactics (waiting and hovering). Peers often ignored the passive entry tactics of children of Neglected status. Controversial boys, on the other hand, had a relatively high probability of receiving a positive response from peers.

Additional studies of the behavioural correlates of sociometric status. Several additional studies have provided further elaboration on the characteristics of children at the low end of the status continuum.

Coie, Dodge, and Coppotelli (1982) examined peer nominations on six behavioural descriptors for groups of Neglected, Rejected, and Controversial boys and girls in grades 3, 5, and 8. Rejected children were perceived by peers as disruptive, starting fights, and as often seeking help. Furthermore, the Rejected children received few nominations for items reflecting cooperation and leadership. Controversial children displayed a profile which was best described as a combination of the Popular and the Rejected groups. Specifically, Controversial children were similar to the Rejected group in that they were perceived as disruptive and starting fights. On the other hand, Controversial children were perceived as being leaders

in the peer group. Neglected children received few nominations on the behavioural descriptors and appeared to be the polar opposite of the Controversial group. The Neglected children comprised a low visibility group whereby peers had difficulty reaching a consensus as to their behaviour.

Cantrell and Prinz (1984) compared Rejected, Neglected, and Average children on the individual items of the Pupil Evaluation Inventory (PEI; Pekarik et al., 1976). They found the Rejected group to have significantly more nominations than both the Average and Neglected children on all the aggression cluster items including those tapping attention-seeking behaviours, disruptiveness, and aggression. Rejected boys also had significantly more nominations for 5 of 9 withdrawal items including two items that reflect social withdrawal on the child's part, two items describing rejection by peers, and an item reflecting distress at being called on in class. Rejected girls had significantly more nominations than Neglected girls on 8 of 9 withdrawal items of the PEI.

Although the Cantrell and Prinz (1984) results clearly indicated the notable deviance of Rejected boys and girls, the authors likely did not intend the results to serve as a behavioural description of the groups. The utility of their results in the development of behavioural profiles may be limited for several reasons. Above all, the high rate of

peer nominations for Rejected children across all of the PEI aggression items, and most withdrawal items, likely represents a degree of bias and distortion resulting from a negative halo effect. That is, peers are possibly nominating Rejected children for behavioural items on the basis of their likes and dislikes rather than on the basis of an objective assessment of behaviour. As a result, the deviance of the Rejected children may be exaggerated and extended across a wider range of descriptors than may be truly characteristic of the group. Second, the fact that Rejected children were contrasted against a very low profile Neglected group and an Average group only served to further maximize the likelihood that Rejected children would be found to be "extreme" on an exceptionally wide range of items. Finally, Cantrell and Prinz did not address the possibility that the Rejected group may be comprised of several important subgroups (see Coie, Dodge, Terry, & Wright, 1991 above) and that the high number of nominations for the group on a wide range of items reflects the sum of the profiles for distinct subgroups. In short, the Cantrell and Prinz (1984) results do not differentiate the most salient or critical behaviours contributing to the peer relations problems experienced by Rejected children, and lack the specificity that would be necessary for such findings to serve as the basis for the planning of intervention programs on behalf of such children.

French (1988, 1990) has recently questioned the homogeneity of groups of peer-rejected boys and girls. In a sample of rejected boys (French, 1988), two subtypes emerged following a cluster analysis. Boys in one cluster exhibited high aggression, low self control, behaviour problems, and social withdrawal, while boys in a second cluster exhibited social withdrawal, but did not obtain elevated scores on any of the other areas of deviance. In contrast, although a study of rejected girls (French, 1990) also revealed two large clusters, aggression scores did not differentiate the two subgroups. Cluster B, the more deviant of the two clusters, was found to be more withdrawn, anxious, and lower in academic functioning than Cluster A. Cluster A was not more deviant than Cluster B on any of the measures, but was lower in self-control and higher in terms of peer-rated aggression, withdrawal, and overall problem behaviours when compared to Popular children.

Rubin, LeMare, and Lollis (1990) have speculated on the existence of a withdrawn subtype of rejected child at risk for internalizing problems such as low self-esteem, loneliness, or depression. Further, Parker and Asher (1987) report on two studies that are supportive of the withdrawn-rejected subtype, distinct from the more commonly identified aggressive-rejected subtype. Both Parkhurst and Asher (1987) and Williams and Asher (1987) reported on rejected children who were described by peers as "easy to

push around" or as "timid and hanging back", and further noted that these children were particularly lonely when compared with average status and aggressive-rejected children. Parker and Asher (1987) conclude that these studies underline the potential predictive power that may result from combining sociometric and behavioural information.

Perhaps in response to the conclusions of Parker and Asher (1987), a recent study by Coie and associates (Coie, Dodge, Terry, & Wright, 1991) involved play group observations of 7 and 9 year old boys identified as either Rejected, Aggressive, both Rejected and Aggressive, and neither Rejected nor Aggressive. The study is significant in that it examines the role of different forms of aggression in determining peer rejection, and involves classification on the basis of both sociometric and behaviour ratings. Results revealed the differential impact of certain forms of aggression as a function of age, and identified several behaviours as characteristic of the Rejected-Aggressive boys. Specifically, reactive aggression (anger or distress in response to an aggressive act) and bullying (aggression involving no clear external goal) were found to be related to peer status among 9 year olds, while instrumental aggression (attempting to reach an external goal through aversive means) was related to peer status at both age levels. Furthermore, Rejected-Aggressive boys were

more likely to demonstrate hostility toward peers and were more likely to violate norms for aggressive exchanges than were boys in the other groups.

Ratings of Aggression and Withdrawal

In contrast with the extensive literature cited above, relatively few studies have examined the behavioural correlates of peer ratings of aggression and withdrawal (Hymel & Rubin, 1985). Furthermore, observational studies of the behaviours associated with peer rated aggression and withdrawal are rare and almost exclusively conducted within a preschool or early elementary school population. One explanation for the paucity of observational studies may lie in a wide spread assumption that peer ratings of behaviour can be accepted at face value. That is, researchers may assume that children identified by peers as aggressive or withdrawn naturally exhibit social behaviours consistent with the reputation or rating. However, investigation of the observed behaviours associated with peer ratings of aggression and withdrawal is important for several reasons.

First, Yarrow and Campbell (1963) expressed concern about the objectivity of peer ratings of behaviour. Specifically, they reported that peer ratings are vulnerable to halo effects whereby children nominate according to their likes and dislikes rather than on the basis of an objective assessment of their peers' behaviour. Negative halo effects, as noted above, may result in the excessive

nomination of socially deviant children for behavioural descriptors which do not necessarily reflect their actual profile (e.g. Cantrell and Prinz, 1984). In support of this position, Hymel (1986) has noted that children's explanations of a peer's behaviour vary significantly as a function of whether the peer is liked or disliked. Liked peers, relative to disliked peers, appeared to be given "the benefit of the doubt", while disliked peers were attributed greater responsibility or blame for negative behaviours. In addition, children may nominate peers for negative behavioural items on the basis of unrelated factors such as attractiveness (e.g. Langlois & Stephen, 1981).

Secondly, Younger, Schwartzman, and Ledingham (1985) report that a social-evaluative distinction is dominant in the behaviour ratings of first-grade children. That is, young children are adept at discriminating socially unacceptable behaviour from socially desirable behaviour but are less capable of making finer distinctions between specific types of deviant behaviour. In contrast, at grade 7, both aggression and withdrawal were found to comprise highly cohesive categories of behaviour that were distinct from each other. Further research (Younger & Boyko, 1988) on social schemas suggests that children do not necessarily rate aggression and withdrawal with equal accuracy or reliability across various grade levels. While the accuracy in ratings of aggression would likely be quite consistent

through the elementary school grades, accuracy in ratings of withdrawal would likely range from poor in the early years to quite good at higher grades.

Finally, while global measures of aggression and withdrawal may be useful for screening purposes and for studies of prediction, such scores do not allow researchers to determine the specific behaviours associated with a reputation of behavioural deviance (Coie et al., 1990), nor the impact of such behaviours on success or failure in peer relations. Information concerning specific behaviours, and behavioural clusters, is important in establishing the existence of behavioural subtypes within broader risk classifications, as well as the critical social behaviours to serve as the focus of intervention attempts.

Rubin and Mills (1988) observed children in grades 2 and 4 during free-play, and correlated observed measures of isolation with ratings by teachers and peers. The data revealed two subtypes of social isolation, passive-anxious and active-immature. Passive isolation tended to be stable across the grade levels studied and was related to peer rejection, internalizing difficulties, and negative self-perceptions. Active isolation appeared to reflect immaturity and a disposition toward aggression, especially in the early to midyears of childhood. The authors emphasized the importance of distinguishing between socially withdrawn children who are isolated from the peer group

because of fearfulness and anxiety, and those who are isolated because of other difficulties.

Complementary to the Coie et al. (1991) study, Bierman (1986) has examined the behavioural correlates of risk groups identified on the basis of both behaviour (PEI) and sociometric ratings (this study has been reported in the present section due to its emphasis on the Pupil Evaluation Inventory for classification purposes and, consequently, its similarity to studies reported below). However, unlike the observational findings of Coie et al. (1991), Bierman found similar teacher- and peer-rated aggressive behaviours attributed to Aggressive-Rejected and Aggressive-Nonrejected boys, although the boys in the latter group were well-accepted by peers and showed no other signs of social maladjustment. The study clearly indicates the variability in quality of peer relations that may be observed in a group of children bearing an aggressive peer reputation.

Peer ratings of aggression and withdrawal have been studied extensively within the context of the Concordia Risk Project (Schwartzman et al., 1985). Ledingham (1981) examined teacher ratings of children identified by peers as either aggressive, withdrawn, or both aggressive and withdrawn on the basis of the PEI. Teachers rated the Aggressive-withdrawn children as more deviant on scales of external reliance, inattention-withdrawal, inability to change tasks easily, and slowness to complete work.

Together, the Aggressive and the Aggressive-withdrawn group were rated by teachers as more deviant on measures of classroom disturbance, impatience, disrespect-defiance, external blame, irrelevant responsiveness, and giving up on tasks. In contrast, teacher ratings of creative initiative and comprehension were the only factors on which the Withdrawn group were more deviant than the Contrast group.

Interestingly, Ledingham (1981) found that the probability of identifying children as Aggressive-withdrawn decreased as grade level increased (grd 1 = 11% vs. grd 7 = 2.5%), while the probability of identifying children as either Aggressive or Withdrawn increased with age. Perhaps most important, as the Aggressive-withdrawn children became statistically less common toward the end of the elementary grades, their peer likeability systematically decreased relative to children in the other groups. While there were no significant likeability differences among the groups at grade 1, the Aggressive-withdrawn children identified in grade 7 were significantly less liked than their Aggressive, Withdrawn, or Contrast peers.

Schwartzman, Marchessault, and Leung (1988) examined individual items of the Pupil Evaluation Inventory in an effort to identify the social behaviours which differentiate peer-identified Aggressive-withdrawn children from their Aggressive or Withdrawn peers. Such behaviours were believed to be important in explaining the low peer

likeability of Aggressive-withdrawn children relative to the other risk groups. Several important characteristics of the Aggressive-withdrawn children were found. Aggressive-withdrawn boys were nominated more frequently for aggression items describing "those who mess around", "those who do strange things", and "those who act like a baby", and one withdrawal item describing "those who are chosen last". In contrast, Aggressive-withdrawn girls were nominated more frequently on only one aggression item describing "those who mess around" and one withdrawal item, "those who don't want to play".

However, as a method of developing a behavioural profile of the risk groups, the Schwartzman et al. (1988) approach to analysis was limited by several factors stemming from the study's selection criteria. Above all, little could be concluded concerning the unique behavioural correlates of the Aggressive or Withdrawn groups as they were originally selected on the basis of more extreme PEI scores than the Aggressive-withdrawn group, and would, therefore, be expected to be more extreme than the latter in terms of nominations for individual items. Similarly, the researchers chose to conclude that a behaviour was characteristic of the Aggressive-withdrawn group in only those instances where the group elicited a higher proportion of nominations than either the Aggressive group or the Withdrawn group. They admitted that the

probability of finding such items was low, due to the less extreme criteria used to select children to the Aggressive-withdrawn group. In short, this approach yielded a limited, albeit rigorously selected, pool of characteristics as descriptive of the low-liked Aggressive-withdrawn children.

Milich and Landau (1984) have also attempted to clarify the nature of groups of boys defined as at-risk on the basis of peer ratings of aggression and withdrawal. Although the study was conducted exclusively within a kindergarten population, the findings are noteworthy in that they represent an independent assessment of the rather unique Aggressive-withdrawn risk classification. The Aggressive and the Aggressive-withdrawn groups were both found to be high on peer-rated rejection, but the Aggressive group was also high on peer-rated popularity while the Aggressive-withdrawn boys were low. Similarly, free-play observations revealed both the Aggressive and the Aggressive-withdrawn boys to be high in negative peer interactions, but the Aggressive group was also high in positive interactions. Finally, Aggressive-withdrawn boys were rated by teachers as significantly more hyperactive than Aggressive boys. Only the observed proportion of solitary play served to differentiate the Withdrawn boys, and in this respect they were only distinct with respect to the Aggressive boys. Milich and Landau report that their results demonstrate the importance of making the distinction between Aggressive and

Aggressive-withdrawn subtypes of aggressive behaviour in childhood.

Concordia observational project. Studies of the free-play behavioural correlates of peer ratings of aggression and withdrawal are rare in the literature, particularly in a later elementary school sample where peer ratings of behaviour are believed to be more accurate or reliable. As a precursor to the present study, Serbin and colleagues (Lyons, Serbin, & Marchessault, 1988; Serbin, Lyons, Marchessault, Schwartzman, & Ledingham, 1987) conducted naturalistic observations of the free-play social behaviour of boys and girls identified by peers as primarily aggressive, primarily withdrawn, or both aggressive and withdrawn. Children in the Aggressive group and Withdrawn group displayed distinctive social profiles when compared to a Contrast group. Aggressive boys and girls were generally highly active and very involved in social interaction, and displayed high levels of aggressive and non-aggressive physical contact. Withdrawn boys and girls spent more time alone and were low in terms of level of involvement with peers as well as attempts to elicit attention from peers. Similarly, peers were less involved with children rated as Withdrawn.

Teacher ratings (Marchessault, 1985) revealed aggression and nervous-overactive behaviour as characteristic of both boys and girls in the Aggressive

group. However, only Aggressive girls were rated as unpopular by teachers, while Aggressive boys were not rated as more unpopular than Contrast boys. Teacher ratings of peer-rated Withdrawn children were interesting in that only the Withdrawn boys were rated as withdrawn, while Withdrawn girls were not rated as deviant in any respect. Sex differences in the degree of association between teacher and peer ratings were concluded to be a function of differences in boys' and girls' normative play styles, as well as differences in the types of behaviour that adults consider appropriate for each sex.

Consistent with previous studies, the children in the Aggressive-withdrawn group were significantly less liked than children in either the Aggressive or Withdrawn groups. Furthermore, likeability scores for the Aggressive-withdrawn children were homogeneously low, while the likeability scores for children in the Aggressive group and the Withdrawn group ranged from above the class mean to substantially below, suggesting heterogeneity in the quality of their peer relations. Teacher ratings (Marchessault, 1985) identified the Aggressive-withdrawn children as the most deviant of the risk groups. Aggressive-withdrawn girls were rated by teachers as extreme in terms of unpopularity and general externalizing behaviours, while Aggressive-withdrawn boys were extreme on a wide range of factors including unpopularity, inattentiveness, aggression, and

general internalizing and externalizing behaviours. However, extensive playground observations failed to identify characteristics of the Aggressive-withdrawn children's social behaviour that might account for their poor peer relations. In fact, Aggressive-withdrawn children appeared most similar to the non-deviant Contrast group and were only distinct in terms of a disproportionate amount of aggression received from peers.

Lyons et al. (1988) proposed several reasons for the failure of the naturalistic observations to identify distinct characteristics of the Aggressive-withdrawn children's social behaviour. Above all, the authors suggested that the Aggressive-withdrawn group's social difficulties may be a function of qualitatively inappropriate attempts to initiate contact with peers, rather than the result of behavioural excesses as observed in the Aggressive group. Furthermore, they noted that the observational code used in their study was primarily quantitative and likely inadequate for detecting qualitative aspects of social behaviour. Lyons et al. (1988) emphasized the need for further study of the social behaviour of Aggressive-withdrawn children in order to determine the group characteristics contributing to their low peer likeability and negative treatment by peers.

The Present Study

The present study examines the social entry style and peer-nominated behavioural correlates of children at risk in peer relations, identified as extreme on behavioural dimensions of aggression and/or withdrawal. Whereas numerous outcome studies have identified childhood aggression and withdrawal as predictors of later maladjustment, studies of the behavioural correlates of global ratings of aggression and withdrawal are lacking in the literature. Furthermore, there have been few studies of the observed free-play behaviour of such groups, and virtually no previous literature addressing the social entry skills of such children. Identification of the specific social behaviours associated with the aggressive and/or withdrawn profile is critical to the understanding of processes underlying peer relations and an important step in the development of programs of intervention on behalf of the frequently rejected children in such groups.

Although children rated as either uniquely aggressive or withdrawn represent an important focus of the study, those identified as both aggressive and withdrawn are of particular interest. Based on the results of several independent studies, peer-rated Aggressive-withdrawn children are believed to be at particularly high risk for concurrent and later maladjustment. Previous studies suggest that Aggressive-withdrawn children experience

significant difficulties in peer relations and are more frequently the target of peer aggression than children identified as primarily aggressive or withdrawn, and in this respect may represent a behaviourally distinct at-risk group. However, a preliminary study (Lyons et al., 1988; Serbin et al., 1987) found no characteristics of the Aggressive-withdrawn children's social behaviour that might account for their poor peer relations or rough treatment by peers. Thus, the present study aims to extend the results of previous studies, and specifically the work of Serbin and colleagues, in an effort to develop distinct social behavioural profiles for peer-identified Aggressive, Withdrawn, and Aggressive-withdrawn children.

Study 1 involved direct observation of the social entry attempts of the three risk groups relative to a Contrast group. Social entry was chosen as a focus for several reasons. Perhaps most important, several studies (Dodge et al., 1983; Putallaz, 1983; Putallaz & Wasserman, 1989) have identified social entry as an area of deficit for children of low peer status. Entry bids by low status children are accepted less and ignored more often than entry bids by popular children, and appear to differ on several important qualitative dimensions including relevance and aggressivity. Given the homogeneously low peer likeability of children of the Aggressive-withdrawn classification, and their similarities to children of sociometrically Rejected

status (Milich & Landau, 1984), social entry is believed to be an area within which Aggressive-withdrawn individuals may exhibit skill deficits. Secondly, social entry, as a qualitative dimension of playground behaviour, was not examined by Lyons et al. (1988) and, in fact, no known study has examined the social entry skills of children identified as at risk on the basis of peer ratings of aggression and withdrawal. Despite the importance of aggression and withdrawal as screening criteria, most studies of social entry have utilized samples identified on the basis of sociometric measures of acceptance and rejection. Finally, social entry has rarely been examined in an entirely naturalistic context. Social entry within a truly unstructured free-play context likely represents a major influence in the formation and maintenance of peer reputations and is potentially an important focus of intervention.

Through a recoding of the videotaped playground observations of Serbin et al. (1987), the social entry attempts of the children in the peer-identified groups (target children) were evaluated on several qualitative dimensions believed to be critical to success in the initiation of social interaction. The observational code involved ratings on several aspects of social entry including appropriateness, aggressivity, degree of interruption, and the nature of the peer group response to

the entry bid. In addition, entry attempts initiated by peers and directed toward the target children were coded on the same dimensions, with the target child's reactions taken as the response to the entry bid.

Study 2 examined peer nominations on the individual items of the Pupil Evaluation Inventory (Pekarik et al., 1976) in an effort to differentiate the Aggressive, Withdrawn, and Aggressive-withdrawn children in terms of behaviours subsumed under the broad band aggression and withdrawal factors. As complementary to the direct observations, peer ratings have the distinct advantage of providing information on: 1) dimensions of social behaviour not easily measured through observational procedures due to difficulties of operationalization, and 2) the rare events that may have an important impact on peer relations but that are not likely to be observed on a supervised playground. Several researchers (Coie et al., 1990; Parker & Asher, 1987) have emphasized the importance of examining rating scale data at the item level, suggesting that global scores can obscure important distinctions between subtypes of behaviour. Furthermore, several studies (e.g. Coie et al., 1982) have demonstrated that distinct behaviours loading on global factors (e.g. Aggression or Withdrawal) can have varying degrees of impact on a child's peer relations and, thus, may have differential importance as targets of intervention.

Several studies have examined the individual items of the PEI in relation to quality of peer relations (e.g. Bierman, 1986; Cantrell & Prinz, 1984), but only Schwartzman et al. (1988) have investigated the PEI items with respect to children identified as aggressive and/or withdrawn. Although Schwartzman and colleagues identified important behavioural correlates of the risk groups, several limitations to their approach to analysis were noted. The present study involved further analysis of the individual items of the PEI with an effort to control for factors (e.g. negative halo effect) that may have limited the scope of the findings in previous studies. The study specifically aimed to decompose the global Aggression and Withdrawal factors of the PEI, originally used as group selection criteria, to determine whether the risk groups could be differentiated in terms of the most salient items contributing to their shared extreme global factor scores. For example, while Aggressive and Aggressive-withdrawn children were both rated as extreme on the PEI aggression factor, differences in the group profiles on the individual PEI aggression items were addressed.

To this end, a first level of analysis was conducted within each of the peer-identified risk groups in order to identify the most salient PEI items loading on each group's extreme PEI global factor. A second level of analysis involved between-group comparisons of the salience of each

PEI item in order to identify those behaviours which differentiate the groups within their shared dimensions of deviance (e.g. Aggressive group and Aggressive-withdrawn group were compared on the PEI aggression items). In short, the major aim of the between-group analyses was to determine: a) the unique characteristics of each group, and b) whether the Aggressive-withdrawn children exhibit a blend of the characteristics of the Aggressive group and the Withdrawn group or, alternatively, a distinct behaviour profile explaining significantly lower likeability scores.

Hypotheses and Predictions

Based on extensive research investigating the behavioural correlates of peer status, the present study addresses the primary hypothesis that children in the three peer-identified risk groups exhibit distinct social behavioural profiles both consistent with peer ratings on dimensions of aggression and withdrawal and predictive of relative difficulties in peer relations. A second hypothesis proposes that the very high risk Aggressive-withdrawn group exhibits a distinct behavioural profile which is not simply a combination of the profiles exhibited by the groups identified as deviant on a single behavioural dimension.

Few studies have examined the behavioural correlates of children identified as either Aggressive, Withdrawn, or Aggressive-withdrawn, particularly within an elementary

school setting where observational studies are difficult to conduct. In contrast, many studies have examined the behavioural correlates of risk groups defined on the basis of sociometric ratings and nominations. Consequently, specific predictions concerning the behavioural profiles associated with each of the peer-identified groups borrow heavily from the sociometric literature, and particularly the work of Coie, Dodge, and associates. Of course, the validity of references to the sociometric literature rests on assumptions about the relation between sociometrically defined groups and groups identified on the basis of peer ratings of behaviour.

Milich and Landau (1984) have speculated on the nature of the relation between the two-dimensional classification system of Coie and associates and the classification system used in the present study. In their study, Aggressive-withdrawn boys were found to be both significantly lower in popularity and higher in rejection. Furthermore, the Aggressive-withdrawn boys were found to engage in negative interactions and, thus, would appear to resemble the sociometrically classified Rejected children of the Coie studies. In contrast, although Aggressive boys were rejected by many of their peers, they also received the highest popularity scores. The behavioural observations revealed both positive and negative interactions in the Aggressive group along with a very low rate of solitary

play. Milich and Landau concluded that the Aggressive boys were most similar to sociometrically classified Controversial children. It is important to note that Milich and Landau (1984) did not examine a sample of girls. However, the absence of Sex by Classification group interactions in the Lyons et al. (1988) study of Aggressive, Withdrawn, and Aggressive-withdrawn boys and girls would suggest that a similar correspondence may apply for girls.

Hymel and Rubin (1985), in an extensive review of studies investigating children's difficulties in peer relations, have also speculated on one aspect of the correspondence between the systems. Noting a study by Serbin et al. (1987), they concluded that the less active, and minimally aggressive, Withdrawn children were most similar to a sociometrically classified Neglected group.

Admittedly, the correspondence reported above is not precise. However, for the purposes of the present study, it serves as a rough guideline for the following predictions regarding the social behavioural profiles for peer-identified Aggressive and/or Withdrawn groups.

Aggressive children. The Aggressive boys and girls, believed to correspond most closely to the Controversial group of sociometric studies, are predicted to be among the most active children on the playground. It is predicted that they will initiate a relatively high number of social entry attempts, and will exhibit a high rate of aggression

and disruption (interruptions) in their initiation efforts. However, due to observed sex differences in the base rates of aggression on the playground, aggressive boys and girls may not enjoy the same quality of peer relations. Specifically, Aggressive boys may exhibit better peer relations than their counterparts among the girls because aggression is more acceptable or normative within the male social arena. Consequently, peers may be more likely to initiate and respond positively to Aggressive boys than to Aggressive girls. For similar reasons, Aggressive girls are expected to receive significantly fewer "best friend" nominations than the Contrast girls, whereas Aggressive boys may not differ significantly from their "Average" counterparts in the Contrast group.

Peer nominations on the PEI are expected to reveal inattentiveness and hyperactivity as highly characteristic of the children identified as Aggressive. However, consistent with the "Controversial" profile, the Aggressive children would also be expected to demonstrate some areas of competence which may contribute to their degree of popularity. Physical aggression would be expected to be more prominent in the ratings of Aggressive girls than Aggressive boys, again largely due to the normative status of aggression in the playground behaviour of boys.

Aggressive children are predicted to be distinct from the Aggressive-withdrawn children in that some limited area

of competence may be characteristic of the former, but not the latter.

Withdrawn children. The peer-identified Withdrawn boys and girls, believed to correspond most closely to the Neglected group of sociometric studies, are predicted to be among the least active and the most solitary children on the playground, initiating relatively little social interaction. They are predicted to be the least aggressive and the least disruptive in their initiations, and possibly avoidant of aggressive initiations on the part of peers. However, like the Neglected groups of previous studies, the social approaches of Withdrawn boys and girls are predicted to be frequently met with rebuff (e.g. aggression, ignored, or avoided). Both Withdrawn boys and girls are expected to have significantly fewer "best friend" nominations than their same-sex peers in the Contrast group due to their low levels of playground involvement.

Peer nominations of the Withdrawn group are expected to reveal a high degree of isolation or lack of involvement with respect to the peer group. However, rejection is not expected to be a salient characteristic of the Withdrawn group profile as the Withdrawn children are not expected to be characterized by behaviours which might be considered aversive or disruptive within the peer group. Similar profiles are expected for the boys and the girls. However, isolation may be more salient in the boys profile due to the

degree to which it is inconsistent with the boys' normative playground behaviour.

Relative to the Aggressive-withdrawn group, Withdrawn children are predicted to be distinct in terms of greater self-isolation and being less noticed by peers. However, the Withdrawn children are expected to be rated as less rejected by the peer group than Aggressive-withdrawn children.

Aggressive-withdrawn children. The peer-identified Aggressive-withdrawn children, believed to be most similar to the Rejected children of sociometric studies, are predicted to be as socially active as any other group on the playground. Further, they are predicted to exhibit relatively high rates of aggressive, inappropriate, and disruptive behaviour. Consequently, the initiation attempts of Aggressive-withdrawn boys are predicted to be more often rebuffed (ignored, avoided, or responded to negatively), and they will be subjected to a high rate of aggressive peer initiations. To the degree that the Aggressive-withdrawn children are expected to resemble children of Rejected peer status, they are predicted to have the fewest "best friend" nominations of any children on the playground.

Similar to the Aggressive children, peer nominations are expected to reveal inattentiveness and hyperactivity as characteristic of the peer-identified Aggressive-withdrawn children. Items reflecting peer rejection are also expected

to be highly salient in the behaviour profile for the Aggressive-withdrawn boys and girls. Furthermore, peer ratings are expected to identify several aversive or disruptive behaviours as highly salient in the Aggressive-withdrawn profile. Specifically, behaviours which might interfere with peer group activities are expected to be characteristic of the Aggressive-withdrawn children and may represent an important factor in the rejection experienced by the group.

Relative to the Aggressive group, Aggressive-withdrawn children are predicted to be distinct in that there will be few, if any, prosocial or competent behaviours in their group profile.

Relative to the Withdrawn group, Aggressive-withdrawn children are predicted to be distinct in that items reflecting rejection will be highly salient in the group profile. However, self-initiated isolation and not being noticed by peers is not expected to be highly salient in the group profile for the Aggressive-withdrawn children, in contrast with the Withdrawn group where these behaviours are expected to be strongly characteristic.

STUDY 1: AN OBSERVATIONAL STUDY OF SOCIAL INITIATIONS

Method

Consent and Ethics

Two French language elementary schools in the Commission des Ecoles Catholiques de Montréal (CECM) participated in the study. Schools in the French sector were selected in order to remain consistent with the Concordia Risk Project (Schwartzman, Ledingham, & Serbin, 1985) and thus permit generalization of results to that project. All procedures for subject selection and data collection were approved by the University's ethics review committee, the school board (CECM), as well as the teachers and parents' committees at both schools involved.

Identification of Sample

Screening procedure. At each of the participating schools, the children in the two oldest grades were studied: School 1, grades 5 and 6; School 2, grades 4 and 5. Selection of target subjects for observation involved the administration of a French translation of the Pupil Evaluation Inventory (PEI; Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976) to all children present on the day of testing in each of 16 classes. The PEI consists of 35 items (including one practice item) that might be described as brief statements of behaviours common to children and observable by teachers and peers. Each item loads on one of three factors: Aggression/disruption (20 items, e.g. "those

who are mean and cruel to other children"), Withdrawal (9 items, e.g. "those who are too shy to make friends easily"), and Likeability (5 items, e.g. "those whom everybody likes"). Copies of the French and English versions of the PEI items are included in Appendix A.

In each class the children were provided with a list of classmates complete with an identification number for each child. They were asked to nominate a maximum of four boys and four girls who best fit the description of each item on the questionnaire. All children participated in the procedure for same and opposite sex peers. However, boys and girls were nominated in separate administrations in order to control for sex differences in the base rates of the behaviours described, as well as possible same sex biases in the nomination procedure (Asher & Hymel, 1981). Thus, each child was asked to complete the questionnaire twice; once to nominate male classmates and once for female classmates. Children could nominate themselves for an item if they chose to do so.

The total number of nominations received by each child, from both male and female peers, was calculated for items loading on each of the three factors. These scores were subjected to a square root transformation to minimize the skew in distribution and then converted to z-scores, relative to same sex classmates, in order to control for sex differences in base rates.

Sample selection: For the observational phase of the project, children were selected to one of four target groups based on their PEI aggression and withdrawal z-scores: Aggressive, Withdrawn, Aggressive and Withdrawn, and Contrast. It should be noted that the selection criteria were adhered to as strictly as possible but were slightly relaxed in several instances in an effort to increase the overall sample size as well as to obtain a more balanced distribution of subjects across sex and PEI target group. The number of subjects selected to each of the Classification groups, broken down by sex, is presented in Table B-1.

A total of 117 children were selected as observational targets. The children selected to the Aggressive group (n=29) were chosen from among those with the highest z-scores on the Aggression factor, but with a Withdrawal z-score below +0.68 (75th percentile). The majority of this group surpassed the predetermined criterion of +1.65 (95th percentile) on Aggression. However, 11 subjects with lower z-scores were included to increase sample and cell sizes. The lowest score on the Aggression factor of any child included in the group was +1.26 (90th percentile).

Similarly, children selected to the Withdrawn group (n=27) were chosen from among those with the highest z-scores on the Withdrawal factor of the PEI, but with an Aggression z-score below +0.68. Again, to increase cell

sizes, 9 children with Withdrawal scores falling short of the predetermined criterion of +1.65 were included, the lowest of which was +1.26 (90th percentile).

The Aggressive-withdrawn group (n=28) was selected from among those children with high z-scores on both the Aggression and Withdrawal factors of the PEI. The majority of this group surpassed the predetermined criterion of +0.68 on both the Aggression and Withdrawal factors. However, 2 children with lower scores were included, the lowest set of scores for any child being +0.55 (71st percentile) on Aggression and +0.67 (75th percentile) on Withdrawal.

A fourth group, serving as a Contrast (n=33), was selected from among those children with z-scores falling between -0.68 (25th percentile) and +0.68 (75th percentile) on both the Aggression and Withdrawal factors. An effort was made to select one or two such children from each class participating in the study. These children represent a group that is centred around their respective class means (i.e. z-score = .00) on the two factors and does not include children with exceptionally low z-scores on either Aggression or Withdrawal. The latter children were excluded from the study as it was thought that they may represent a group that is unknown to their peers thus receiving very few nominations.

Distinct nature of the groups on the selection criteria. One-way analyses of variance (Classification group) conducted within each of the sexes confirmed the distinct nature of the groups on the dimensions of aggression and withdrawal. Table B-2 reports the mean aggression and withdrawal z-scores broken down by Classification group and Sex, as well as the results of the ANOVAs conducted for each of the measures. For the boys, all four groups differed significantly from each other on the aggression z-score [$F(3,57)=123.85$, $p<.01$] and fell on a continuum with the Aggressive group highest and the Withdrawn group lowest. On the withdrawal z-score, the Withdrawn boys were highest and were significantly greater than all other groups [$F(3,57)=89.93$, $p<.01$]. The Aggressive-withdrawn boys had the second highest mean withdrawal score and were significantly greater than both the Aggressive and the Contrast boys who did not differ significantly.

Aggressive and Aggressive-withdrawn girls had significantly higher aggression scores than both the Withdrawn and Contrast girls [$F(3,52)=103.07$, $p<.01$]. However, unlike the pattern found among the boys, the Aggressive and Aggressive-withdrawn girls did not differ, nor did the Withdrawn and Contrast girls on the PEI aggression z-score. A similar pattern was noted on the withdrawal z-score. Specifically, the Withdrawn and

Aggressive-withdrawn girls had significantly higher scores than both the Aggressive and Contrast girls [$F(3,52)=80.95$, $p<.01$] in terms of peer-rated withdrawal on the PEI.

Naturalistic Observation of Target Children

Identification of target children. With the permission of school officials, photographs were taken of all children in each of the 16 classrooms that had been administered the PEI (see Appendix C for full procedure). The children were photographed in small groups of 2 to 4, with and without their outer winter clothing. The photographs of all children were then inserted in 8 1/2 x 11 inch transparent sheets and those that had been selected for observation were identified by an adhesive dot indicating the child's identification number. This photo album was used daily by the filmers as a reference for identification of target children, and by coders for verification in the event of a crowded playground.

Videotaping of target subjects. The target children were videotaped during the morning and afternoon recess sessions throughout the Fall, Winter and Spring seasons. Videotaping sessions were typically 12 to 15 minutes in duration and were held daily, weather permitting.

In order to remain unobtrusive, videotaping at both schools was conducted from a second-story window overlooking the playground. Making use of colour video-cameras equipped with a telephoto lens, even the furthest points on the

playground (70-100 metres) could be recorded with clarity. Although the filmers were visible to the children, the latter were not aware of the specific targets of the observations due primarily to their number (200-300) and density.

The filming procedure involved locating and identifying a target child from a photograph, and then filming that child for a two to four minute segment. The author, two graduate students, an undergraduate honours student, and five research assistants served as technicians in the collection of the videotaped observations. Film crews consisted of two members; a spotter and a filmer. The role of the spotter was to locate a target child with the aid of binoculars, describe that child to the filmer, and then time the segment once the videotaping had begun. The filmer's responsibilities included maintaining a focus on the target child and reporting his/her disappearance should the line of vision be obscured. While the filmer was filming, the spotter's task was to locate another target child for observation. Additionally, the spotter called out the target child's identification number and a description of his or her clothing which was simultaneously recorded on one of the two audio tracks of the videotape (see Appendix C for full description of filming procedure and equipment).

Once filmers had returned from the field they were required to review the videotaped segments that had been taken and to enter the appropriate documentation in a log book listing all segments filmed. The log contained the date, film number, technicians' names, identification number of the child filmed, starting and ending footage, and duration of the segment. The log served as a master reference of all videotape used for the study.

Filming schedule. Children were filmed on a rotating basis to ensure an even sampling of behaviour across time and seasons. It occurred to researchers that there was a risk that higher profile children might be easier to spot and consequently filmed more frequently. In order to ensure an even sampling, a pool of target subjects to be filmed was generated before each recess session, rather than simply filming subjects as they became visible. Although the number of segments tended to lag on certain "hard to find" subjects, this procedure was generally successful in maintaining a uniform rate of data collection for the target children.

The initial segment for children at School 1 was at least 4 minutes in length. However, filmers had difficulty obtaining 4-minute segments due to the mobility of the subjects and the limited duration of the recess period. For these reasons, and because shorter segments subjectively seemed to be as representative of the children's behaviour,

it was decided that all subsequent segments would be only 2 minutes in duration. In total, children at School 1 were filmed an average of 3.2 times (SD=0.6) during the Winter and Spring seasons of the 1981-82 academic year, yielding an average of between 8 and 9 minutes of observation per child. The number of segments per subject ranged from 2 (2 subjects) to 5 (2 subjects).

Subjects at School 2 were filmed during the late Fall, Winter, and Spring seasons of the 1982-83 academic year. A mean of 13.7 2-minute segments (SD=0.9), or approximately 28 minutes of observation, were collected for each child. The number of segments per subject ranged from 12 (5 subjects) to 16 (2 subjects).

Observational code development and description. Previous analysis of the videotaped segments (Lyons, Serbin, & Marchessault, 1988; Marchessault, 1985; Serbin, Lyons, Marchessault, Schwartzman, & Ledingham, 1987) suggested the importance of a detailed qualitative coding of the target children's social entry attempts and the subsequent peer responses. "Social entry attempt" and "initiation" are used interchangeably in the present study and conceptually refer to an individual child's specific behaviour aimed at establishing some form of interaction with a peer(s) when not previously involved with that peer.

Using a subsample of the videotapes, an observational coding system was developed by the author, Dr. Lisa Serbin (Research Supervisor), and Valerie McAffer (Graduate Student), all working blind as to the peer-identified classifications of the children. The coding system was designed to reflect the appropriateness, precise nature, and context of the initiation attempts and responses between target children and their peers. These are aspects of playground interaction to which the previous observational coding system (Marchessault, Lyons, & Serbin, 1986) was not sensitive because it was predominantly quantitative in nature, utilizing frequency counts and duration measures.

The resulting observational code (included in Appendix D) borrowed extensively from related research involving observations of popular, rejected, and neglected children (Coie & Kupersmidt, 1983; Dodge, 1983; Putallaz, 1983). Focusing primarily on each independent initiation-response sequence as a discrete event, each of 10 different categories, many of which have been found to differentiate children experiencing peer relationship problems, were evaluated. A brief rationale for these categories appears in Appendix E. The options within each category were as follows:

1) Context: The nature of the activity within which the initiation-response sequence (interaction) occurs was coded as structured or unstructured.

2) Sex: The sex of the peer(s) involved in the interaction with the target child was coded.

3) Appropriateness of the initiation: The initiation was rated as either inappropriate, marginally appropriate, or appropriate based on the playground norms for the context within which the interaction took place.

4) Nature of the Initiation: The nature of the initiation was rated as non-aggressive or, alternatively, as mild/playful aggression, moderate aggression, or severe aggression.

5) Nature of the Response: The nature of the response to the initiation was coded as either; ignored, avoided, responded to with same kind of behaviour (same, lesser, or greater intensity), or responded to with different kind of behaviour (positive or negative).

6) Interruption of the ongoing activity: The degree to which the initiation interrupts the ongoing activity was coded as no interruption, interrupts activity only for the children involved, interrupts activity for more than just the children involved in the interaction, or not applicable (no ongoing activity involved).

7) Eye contact: The eye contact between the children was coded as appropriate or inappropriate.

8) Orientation or position: The orientation or position of the child during the approach and/or initiation was coded as either behind or side/front.

9) Leadership or organizational behaviour: The target child's initiation was coded for an organizational or leadership quality on a five-axis coding system.

10) Change in the interaction: Finally, the nature of the interaction following the initiation was coded as having become either more aggressive, more intense, less aggressive, less intense, remained the same, or interaction did not continue.

In addition, the duration of interactions between target and peers was coded as well as the total number of target and peer initiated interactions across a 2 minute segment of videotape. Finally, the coders made a global rating of the target child's general level of social competence based on the entire segment.

Preparation of videotapes for coding. In order to clearly identify the initiation-response sequences to be coded, "beeps" were dubbed onto one of the two videotape audio tracks. The author, one other graduate student, and two research assistants reviewed every videotaped segment and selected target and peer initiated interactions for future coding. A "social entry attempt" or "initiation", for the purposes of the project, was operationally defined

as "a voluntary and intentional attempt to initiate interaction with another child, regardless of the intensity of that attempt, when no previous form of interaction existed with the other child in the previous 5 seconds". Extensive reviewing of the videotapes indicated that there were an average of 2 to 3 of both target and peer initiations within a 2 minute segments. Thus, in an attempt to give equal statistical weighting to each two-minute observation, at School 2 only the first two initiations of each type (target and peer) were selected for coding within any given segment. At School 1 the maximum number of initiations selected per segment was increased to nine. Given that there were fewer videotaped observations on each child at School 1 (an average of 3.2 for each child at School 1 vs. 13.7 at School 2), the increase was designed to provide some degree of balance in the number of coded entry attempts for children at the two schools.

Each initiation-response sequence was clearly indicated by a beginning and ending "beep" thus identifying tne precise interaction to be coded according to the observational code. The first "beep" was dubbed onto the videotape just before (temporally) the beginning of the initiation. The second "beep" was dubbed onto the videotape just after the response. The placement of the "beeps" was critical as coders were instructed to consider only

behaviours occurring between the "beeps" when coding all but the last of the code categories.

In addition to the dubbing of "beeps", the preparation of the tapes involved timing the total duration of each interaction to be coded. This measure represented the length of the total interaction between target and peer rather than just the initiation and immediate response as delineated by the "beeps". Additional information was recorded for later use by coders including the starting footage of each segment and initiation-response sequence, and the type of activity within which an initiation occurred. The latter was coded as either "alone", "dodgeball", "rough and tumble", "other game", "group or peer communication", or "other activity". Furthermore, the total number of target and peer initiations was recorded including those delineated for later coding as well as those occurring after the limit (2 or 9 per segment, depending on the school) had been reached. The above information was entered on a form which later served as a work sheet during the coding phase of the project. In approximately 14% of the segments neither a target nor a peer initiation occurred (e.g. target was alone for entire segment) in which case the above information was recorded on a separate sheet for later inclusion with the coded interactions (see Appendix F for summary of beeping procedure).

Number of initiations available for coding. The group means for the total number of target and peer initiations identified for coding purposes (per target child) are presented in Table B-3. In order to avoid the overrepresentation of a single videotaped segment in the data set, an upper limit to the number of initiations that could be coded from any single segment was established (restrictions described above). Obviously, the number of initiations actually identified for coding was also a function of the total number of initiations observed (reported in the Result section). That is, when fewer than two target or peer initiations were observed within a videotaped segment, the maximum number of initiations prepared for coding was not attained. Thus, group differences noted below are a result of this fact.

The number of coded target initiations showed a tendency to be greatest for the Aggressive (15.9) and Contrast (15.2) boys, surpassing the Withdrawn (10.0) boys [$F(3,57)=2.35$, $p<.10$]. Aggressive-withdrawn (14.4) boys were intermediate on this measure. There were no significant differences among the four groups of boys in terms of the number of peer initiations coded [$F(3,56)=0.93$, n.s.].

The four peer-identified groups of girls did not exhibit significant group differences on either the number

of target initiations [$F(3,52)=1.52$, n.s.] or peer initiations [$F(3,51)=0.48$, n.s.].

Coding procedure and adaptation of code to OS-3 microprocessors. The OS-3 microprocessors (Observational Systems, Seattle, Washington), used for data collection in the coding phase of the project, are hand-held event recorders with both keys (numbered 0-9 and A-Z) and toggles (numbered 0-9). The OS-3 has an internal clock and extensive memory (maintained even when the unit is turned off) enabling the storage of data for up to one month without a recharge. Due to the simple nature of the observational code, only the keys were required for data entry. Both the header information and the code categories were entered in 2-5 digit strings.

The OS-3 was programmed to provide the coder with prompts requesting various "header" information (descriptive data identifying the segment). In a typical coding session, the coder worked exclusively from a "coding sheet" and typically completed a full videocassette (one hour of observation) during a three hour coding period. Following the order of segments on the coding sheet, the procedure for each two- or four-minute segment involved a number of steps. First, the coder located the appropriate segment on the videotape (according to information on the coding sheet) and positively identified the target subject for that segment. The segment was then viewed once, in its entirety, in order

for the coder to make a global rating of the child's general competence in playground interaction. Once the global rating had been made, the videotape was rewound to the beginning of the segment. The "header" information pertaining to that segment, along with the global rating, was then entered into the OS-3. The coder then began viewing the videotape until the first pair of "beeps", delineating the first interaction to be coded, were encountered. At this point the interaction was coded according to the 10 categories described in the previous section (Observational code development and description). These 10 entries, one for each observational code category, were then entered into the OS-3 in a preassigned order. Once the procedure had been completed for the first interaction, the coder continued to view the videotape until the next pair of "beeps" were encountered. When the end of the segment was encountered, the coder located the next segment and entered the new "header" information, thus reinitiating the procedure.

At the end of a coding session the coder was responsible for "dumping" the data stored in the OS-3. The data for the session was loaded onto a 5 1/4 inch floppy diskette on an Olivetti PC using software designed specifically for the OS-3 microprocessors.

Training of coding personnel. The author, another graduate student, and two research assistants participated

in intensive group training sessions over a four month period. The initial sessions involved 1) discussion of the meaning of the observational code categories, 2) fine tuning of the category definitions, and 3) an introduction to the OS-3 microprocessors and the VCR equipment.

Once the observational code had been memorized, practice coding was begun in order to determine problematic categories in terms of interrater reliability. Using randomly selected segments from the pool of observations, the process involved coding on paper rather than with the OS-3 units in order to be able to immediately determine disagreement among coders. Once the coders had reached 80% agreement on all code categories, the training sessions were terminated and several practice sessions on the OS-3 were conducted.

Each target and peer initiation was coded by one trained observer. However, approximately 15% of the videotapes were coded by two observers as an ongoing measure of interrater reliability. Interrater reliability is further discussed in the Results section. The coding of the videotapes was completed over an 18 month period.

Results

Target-initiated and peer-initiated social entry attempts were observed and coded on dimensions believed to be related to success in peer relations. The goal of the analyses was to develop behaviour profiles based on the target and peer social initiations, and the subsequent responses to those initiations. In the following section, several measures of peer acceptance, global ratings of competence, quantitative characteristics of the social initiations (e.g. frequency and duration), and, finally, qualitative characteristics of the coded initiations (e.g. appropriateness, aggressiveness) and responses are examined.

Two-way analysis of variance (PEI Classification Group by Sex) was initially used to examine Classification Group and Sex main effects and interactions on each of the measures of interest. The two-way ANOVAs were followed by one-way ANOVAs for Classification Group conducted within each sex. It is important to note that the following description of group differences is always based on the results of the one-way ANOVAs conducted within each sex separately, unless otherwise stated. Because there were no significant Sex by Classification Group interactions found on any of the observational measures, it was believed to be more informative to discuss the two sexes separately in order to develop distinct profiles for boys and girls. With

the lack of Sex by Classification Group interactions, it might be argued that the boys and girls could be analyzed together and behaviour profiles developed for the sexes combined. However, from a descriptive and clinical point of view, this approach would be less informative and would not allow comparison of male and female differences in profiles that might have been missed (statistically) due to the relatively small cell sizes.

The approach to analysis described above allowed for comparison of the three peer-identified risk groups with the Contrast group, thus addressing the manner in which children at-risk in peer relations differ from the "average" population in terms of their social entry style. The social entry characteristics of the risk groups were considered to be important to an understanding of the processes underlying the development of peer reputations and success in peer relations.

However, the ANOVAs also included comparisons among the peer-identified risk groups, permitting an assessment of the degree to which the Aggressive-withdrawn children exhibit a blend of the social entry characteristics of the Aggressive group and the Withdrawn group or, alternatively, exhibit a distinct social entry profile.

Measures of Peer Acceptance

Several measures of acceptance were analyzed for Classification Group differences in order to examine the relative difficulties experienced by the groups in their peer relations. The PEI likeability factor and one specific item loading on that factor, "best friend", were selected as important measures of peer acceptance and general success in peer relations.

The mean PEI likeability *z*-scores and percentiles relative to same sex classmates are presented in Table G-1. The Contrast, Aggressive, and Withdrawn groups of boys showed no significant differences. However, all three groups had significantly higher mean scores than the Aggressive-withdrawn boys on the likeability factor [$F(3,57)=6.62$, $p<.01$]. For the girls, the Contrast group was found to have a significantly higher likeability score than both the Aggressive and Aggressive-withdrawn girls [$F(3,52)=2.92$, $p<.05$]. The Withdrawn girls' likeability score was intermediate and did not differ from any of the other groups.

The "best friend" item of the PEI represents an important, and perhaps more specific, measure of acceptance within the peer group. Table G-2 presents the mean proportion of classmates nominating the target children as "best friend", broken down by sex. One-way analysis of variance (Classification Group) showed the Contrast boys to

be nominated by an average of 18% of classmates as "best friend", significantly greater than rates of 10% for Withdrawn boys and 3% for Aggressive-withdrawn boys [$F(3,57)=6.63$, $p<.001$]. Aggressive boys, nominated by an average of 15% of classmates as "best friend" were not significantly different from the Withdrawn or Contrast boys, but were significantly greater than the Aggressive-withdrawn boys.

A similar pattern was observed within the sample of girls. However, the Contrast girls, nominated by an average of 23% of classmates, surpassed all other groups on this measure [$F(3,52)=7.55$, $p<.001$]. The Aggressive-withdrawn girls were the lowest (5% nominations), similar to their counterparts among the boys. Aggressive girls and Withdrawn girls demonstrated similar rates of nomination for the "best friend" item, 10% and 11% respectively.

In sum, Aggressive-withdrawn boys are most distinct on several measures of acceptance and appear to be experiencing the greatest difficulty in peer relations. The Aggressive-withdrawn boys are lower than all groups on peer-rated likeability, and are nominated by an average of only 3% of classmates as "best friend" (i.e. an average of less than 1 "best friend" nomination).

Withdrawn boys appear to enjoy adequate peer likeability but are less likely to be nominated as "best friend" than boys in the Contrast group. It is important to

note, however, that the rate of "best friend" nominations for the Withdrawn boys was more than three times as high as the rate for the Aggressive-withdrawn boys, 10% and 3% respectively.

Finally, Aggressive boys also enjoy adequate peer likeability ratings, but are different from the Withdrawn boys in that they also receive "best friend" nominations at a rate comparable to boys in the Contrast group. Thus, of the three peer-identified risk groups, Aggressive boys appear to have the least difficulties with respect to acceptance by peers.

While clearly exhibiting peer difficulties, Aggressive-withdrawn girls are not as distinct as their counterparts among the boys. That is, although Aggressive-withdrawn girls are significantly lower than Contrast girls in terms of peer-rated likeability, they are not significantly lower than the Aggressive girls or the Withdrawn girls on this measure. Similarly, Aggressive-withdrawn girls receive significantly fewer "best friend" nominations than Contrast girls but, again, are not significantly different from the other risk groups in this respect.

Aggressive girls are similar to the Aggressive-withdrawn girls in that they are significantly lower than girls in the Contrast group in terms of peer likeability and proportion of "best friend " nominations. However, it is important to note that the rate of "best friend" nominations

for the Aggressive girls was twice as high as the rate for the Aggressive-withdrawn girls (10% vs. 5%), although not significantly different.

Finally, Withdrawn girls appear to enjoy only slightly better peer relations than the other peer-identified risk groups. While the Withdrawn girls receive significantly fewer "best friend" nominations than the Contrast girls, the Withdrawn girls' group mean of 11% is more than twice the rate for the Aggressive-withdrawn girls. Furthermore, even though Withdrawn girls are not significantly higher than the other risk groups on peer likeability, their "intermediate" score is not significantly different from the mean likeability score for the Contrast girls.

These analyses serve to demonstrate the significantly lower levels of overall peer acceptance experienced by the Aggressive-withdrawn children of both sexes. However, whereas Aggressive-withdrawn boys are clearly distinct among the other risk groups in their degree of peer difficulties, Aggressive-withdrawn girls share this distinction to varying degrees with the other risk groups.

Global ratings of competence

A single global rating of the target subjects' social competence, on a 1 to 3 scale (1=low competence and 3=high competence), was made for each distinct videotaped segment. As noted previously, videotaped segments ranged from

approximately 2 to 4 minutes in duration. Global ratings were based on the entire segment and not simply on the target children's initiations during that segment. The ratings across all videotaped segments for each child were averaged to arrive at a mean global competence rating for each of the target children. Interrater reliability (coefficient Kappa) for the global rating was .86 and was based on a double coding of approximately 15% of the segments.

One-way analyses of variance conducted within sex on the mean global competence ratings indicated significant differences among the four groups of boys [$F(3,57)=3.19$, $p<.05$]. The mean global rating by Classification Group and the results of the analyses of variance are presented in Table G-3. Aggressive-withdrawn boys were rated highest on the global measure, significantly greater than the boys in the Aggressive and Withdrawn groups. The mean global rating for the Contrast boys was intermediate and not significantly different from any of the groups.

Analysis of the global competence ratings of the girls revealed no significant differences among the groups [$F(3,52)=1.64$, n.s.]. The Contrast girls exhibited the highest mean on this measure, while the Aggressive girls were lowest.

Quantitative Characteristics of Social Initiations

Several quantitative measures of competence in peer relations were examined within the context of the children's social initiations and subsequent interaction. First, the number of initiations observed (per minute of videotape) was examined as a crude measure of the target child's efforts to become involved with peers, and the peer's efforts to become involved with the target child. Second, the duration of the interaction following target and peer initiations was examined as a measure of the effectiveness of the attempt to enter into social interaction and the child's ability to sustain a social interaction once it had been initiated.

Initiations observed. The mean number of target and peer initiations per minute observed during the videotaped segments is presented in Table G-4. Aggressive (1.19) and Contrast (1.07) boys were observed to exhibit a significantly higher rate of social initiations per minute than boys in the Withdrawn group (0.65) [$F(3,57)=4.42$, $p<.01$]. The mean rate per minute for the Aggressive-withdrawn (0.96) boys was intermediate and was not significantly different from any of the other groups. On the other hand, Aggressive-withdrawn (0.70) and Aggressive (0.76) boys tended to be the focus of more peer social initiations per minute than the boys in the Withdrawn group (0.42), [$F(3,57)=2.63$, $p<.10$]. Contrast boys were intermediate and were not distinct from any of the groups on

this measure. Thus, Aggressive boys appear to deliver and receive a relatively high rate of social initiation, although the rates for the Aggressive boys were not significantly greater than the rates for Contrast peers. Similarly, Aggressive-withdrawn boys deliver and receive social initiations at a rate which is comparable to the rate for the Contrast boys. In fact, only the Withdrawn boys were distinct from Contrast boys, and even then only in terms of their low rate of social initiations delivered. Although the rate of peer initiations directed toward the Withdrawn boys was the lowest of the four groups, and significantly lower than the rate for the Aggressive boys and the Aggressive-withdrawn boys, they did not differ from the Contrast boys in this respect.

Aggressive (0.90), Aggressive-withdrawn (0.77), and Contrast (0.75) girls all exhibited a significantly higher rate of social initiations per minute than the Withdrawn girls (0.47) [$\underline{F}(3,55)=2.97$, $\underline{p}<.05$]. On the other hand, there was no significant difference among the four groups of girls in terms of the rate of peer initiations directed their way [$\underline{F}(3,55)=1.71$, n.s.]. Thus, Withdrawn girls are the only group to be distinct in terms of rate of initiation, and then only in terms of their own low rate of initiations directed toward peers.

Duration of interaction following target and peer initiations. The duration of the interaction following the initiation was recorded as a measure of the effectiveness of the attempt to enter into social interaction. The cell means across Classification Group and Sex appear in Table G-5.

For the boys, the social interaction following target initiations showed no significant differences between the groups [$F(3,57)=0.45$, n.s.]. Mean durations across the groups ranged from a high of 11.2 seconds for the Aggressive boys to a low of 8.3 seconds for the Contrast boys. The Withdrawn boys (9.6 seconds) and the Aggressive-withdrawn boys (11.0) were intermediate on this measure. No significant differences were found among the groups in terms of the duration of interaction following peer social initiations directed toward target boys [$F(3,56)=0.67$, n.s.].

Similar to the boys, the duration of social interaction following target initiations showed no significant differences for the girls [$F(3,52)=0.38$, n.s.]. Group means for the girls ranged from a high of 18.5 seconds for the Contrast girls to a low of 11.2 seconds for the Aggressive-withdrawn girls. Also similar to the boys, there were no significant differences among groups in terms of the duration of interactions following the peer initiations directed toward target girls [$F(3,51)=0.16$, n.s.].

Inspection of the within group data for individual children revealed mean duration scores ranging from 2.0 to 32.5 seconds suggesting that individual differences may account for more of the variance in the duration of interactions than Classification Group.

Qualitative Characteristics of Social Initiations

Qualitative dimensions of the target and peer social initiations were examined for Classification Group differences within each sex separately in order to develop group profiles on social entry style.

This section includes: 1) criteria for inclusion of subjects in the analysis of the qualitative dimensions of social entry, 2) reduction and combination of options within the code categories, 3) interrater reliability on the code options, 4) group profiles for the peer-identified behaviourally deviant groups within each sex separately, and 5) analysis of the conditional probabilities for selected initiation-response sequences. Although independent of the group profiles, sex differences in the base rates for selected code categories are discussed following the presentation of Classification Group profiles. The main effects of Sex provide a context for the interpretation of the Classification Group differences.

Observational subjects included in the analysis of qualitative dimensions of social initiations. Examination of the number of target and peer initiations that were actually coded revealed several target subjects with very little data in this respect. Based on the distribution of the subjects on the number of target and peer initiations coded, it was decided that subjects with fewer than 3 coded initiations of a particular type (either target or peer) would be excluded from all future analyses. Because the target and peer initiations were analyzed separately, subjects with fewer than 3 coded target initiations were only excluded from the analyses involving that data set. Similarly, subjects with fewer than 3 peer initiations directed toward them were excluded from all future analyses involving the peer initiations. In short, it was decided that fewer than 3 coded initiations would not provide a representative sampling of a particular child's social entry style and that proportions associated with observational variables could not be expected to be stable.

Table G-6 presents the number of subjects retained and dropped within each of the peer-identified groups. It is notable that 3 of 5 subjects dropped from analyses on target initiations, and 6 of 9 dropped from analyses on peer initiations, were from the Withdrawn group.

Reduction of coding options for the qualitative dimensions of the observational code. The observational coding of the social initiations was based on the 10 categories described in detail in the Method section. The categories cover qualitative dimensions of the social initiations which are believed to be important to the success of the initiations in engaging peers in ongoing social interaction and for positive peer relations in general. Within each category, several coding options were available to describe the social initiation attempt being scored. Each social initiation selected for coding was assigned an option on each of the categories of the observational code. Thus, the unit of analysis was the proportion of the total social initiations for a given child that had been coded with each of the options. Because each and every social initiation was assigned one code within each of the 10 categories, the total of the proportions corresponding to each of the options within a particular coding category always sum to 1.00 for any given target child.

The actual number of options within each category was a function of the complexity of the dimension for which the category was designed to assess. Following the initial coding, several of the options within each category were combined for theoretical and practical reasons. The manner in which options were combined is discussed in detail in

Appendix H. All further analyses were conducted on the combined options, including the analysis of interrater reliability. In many cases, the number of coding options within a category was reduced to two, following the combination of several options. In those instances, only one of the coding options was selected for analysis (e.g. the "structured" option within the Context category), as results associated with the complementary coding option (e.g. the "unstructured" option) would be redundant. The code options included in analyses are reported in Table G-7.

Interrater reliability for observational code categories. The interrater reliability of the various code categories was evaluated on the basis of a double coding of approximately 15% of the target and peer initiations.

Coefficient Kappa was calculated for each of the code categories as they were analyzed. Kappa was chosen as the most appropriate measure of agreement given the variable number of options available across the observational code categories. The Kappa coefficient takes into account the probability of a chance agreement and is, therefore, the most conservative measure when there are categories with relatively few coding options (e.g. the dichotomous nature of several of the code categories in the present study). The reliability coefficients were calculated for target and peer social initiations separately, as well as combined, and appear in Table G-8. The mean overall Kappa was .82 for the

target initiations and .74 for the peer initiations. Reliability coefficients for individual categories ranged from .65 to 1.00 (median = .84) for the target initiations and from .56 to .92 (median = .77) for the peer initiations.

Group Profiles

In the following section, group profiles for the three peer-identified behaviourally deviant groups on the qualitative dimensions of the social initiations are presented. The significance of differences between the groups is based on one-way ANOVAs for Classification Group differences. The ANOVAs were conducted within each sex separately on a transformation (square-root arcsine) of the proportion of initiations corresponding to each of the coding options described above. The mean untransformed proportions for the Classification Groups are reported separately for boys and girls. Tables G-8 and G-9 include the results for the boys' target- and peer-initiated social entry attempts, respectively. Tables G-10 and G-11 include the results for the girls' target- and peer-initiated social entry attempts. The tables also present the *F* ratios associated with the one-way (Classification Group) ANOVAs.

It should be noted that the vast majority of observed social interactions were between same-sex peers (approximately 80%). Whereas separate profiles might have been developed for same and opposite-sex initiations, the

limited number of opposite-sex initiations available for analysis precluded such a distinction. Therefore, all further analyses are based on same- and opposite-sex initiations combined.

Aggressive boys. Aggressive boys (see Table G-9) demonstrated the highest rate of **inappropriate** initiations [$F(3,55)=2.26$, $p<.10$] and initiations **interrupting** the ongoing activity [$F(3,55)=3.14$, $p<.05$]. However, the rate for the Aggressive boys was only greater than the rate for the Withdrawn and Aggressive-withdrawn boys on these variables, and was not significantly greater than the rate for boys in the Contrast group. Perhaps most interesting, the Aggressive boys did not exhibit a significantly higher rate of **aggressive** initiation [$F(3,55)=1.11$, n.s.]. In short, the Aggressive boys did not differ from the Contrast boys on any coded dimension of their own social initiations.

Peer initiations (see Table G-10) directed toward the boys in the Aggressive group were distinct only in terms of the low rate of **aggression**, and even then this difference was only marginally significant [$F(3,52)=2.73$, $p<.10$]. Descriptively, peers were least likely to direct an aggressive initiation toward Aggressive boys in comparison with the rates of aggressive initiations directed toward boys in the other groups. However, the rate for the Aggressive boys was only significantly lower than the rate for the Aggressive-withdrawn boys on this variable. In

contrast, the Aggressive boys' responses to peer initiations were significantly different from the other groups on several dimensions. Above all, the Aggressive boys were less likely to react to peer initiations by **avoiding or ignoring** [$F(3,52)=2.84$, $p<.05$] and were lower than both the Aggressive-withdrawn and Withdrawn boys on this measure. Also, Aggressive boys demonstrated a marginally higher rate of **complementary** response [$F(3,52)=2.76$, $p<.10$] than Aggressive-withdrawn boys. Again, none of the dimensions of the peer initiations, including the target responses, served to differentiate the Aggressive boys from the boys in the Contrast group.

Withdrawn boys. The peer-identified Withdrawn boys did not differ from the Contrast boys on any of the coded dimensions of the social initiations (see Table G-9) and, in fact, were only distinct in terms of lower rates of **Inappropriate** initiations [$F(3,55)=2.26$, $p<.10$] and **Interruptions** [$F(3,55)=3.14$, $p<.05$] relative to the Aggressive boys. In addition, the Withdrawn boys received the lowest rate of **different kind/positive response** from peers, again differing significantly from the rate observed for the Aggressive boys [$F(3,55)=2.98$, $p<.05$].

Peer initiations directed toward Withdrawn boys did not differ significantly in any way from any of the other groups (see Table G-10). However, the rate of peer **aggressive** initiation directed toward Withdrawn boys was almost as high

as the rate noted for the Aggressive-withdrawn boys (see below). Furthermore, in terms of the responses to peer initiations, Withdrawn boys only differed from the boys in the Aggressive group. Specifically, Withdrawn boys showed a higher rate of **avoiding or ignoring** [$F(3,52)=2.84$, $p<.05$] and a lower rate of **different kind/antisocial** response [$F(3,52)=2.21$, $p<.10$] relative to the Aggressive boys. No aspect of the peer initiations, including the responses, served to differentiate the Withdrawn boys from the boys in the Contrast group.

Aggressive-withdrawn boys. Similar to the Withdrawn boys, Aggressive-withdrawn boys did not differ from boys in the Contrast group on any of the coded dimensions of their social entry attempts (see Table G-9). They demonstrated significantly lower rates of **Inappropriate** initiations [$F(3,55)=2.26$, $p<.10$] and **Interruptions** [$F(3,55)=3.14$, $p<.05$] than the Aggressive boys and, in fact, exhibited the lowest rates on both of these dimensions. Moreover, the Aggressive-withdrawn boys were not significantly different from the other groups in terms of the nature of peer responses elicited by their initiations.

Analysis of the peer social entry attempts revealed a tendency for peers to be more aggressive in their initiations directed toward Aggressive-withdrawn boys (see Table G-10). Peer rates of **aggressive** initiation [$F(3,52)=2.73$, $p<.10$] were higher for the Aggressive-

withdrawn boys than for the groups of Aggressive or Contrast boys. Furthermore, the Aggressive-withdrawn boys differed from the Aggressive boys in terms of their responses to peer initiations. As noted above, they were more likely than Aggressive boys to attempt to **avoid or ignore** peers' initiations [$F(3,52)=2.84$, $p<.05$] and were marginally less likely to respond with a **complementary** response [$F(3,52)=2.76$, $p<.10$].

Aggressive girls. Aggressive girls were easily the most distinct of the three peer-identified deviant groups of girls (see Table G-11). They were more extreme than all other groups in terms of **Inappropriate** [$F(3,49)=3.31$, $p<.05$] and **Aggressive** [$F(3,49)=4.64$, $p<.01$] initiations, and showed a tendency to initiate more often toward peers of the **Opposite sex** [$F(3,49)=2.59$, $p<.10$] than either Aggressive-withdrawn or Contrast girls. No group differences were observed in the nature of the peer response to initiations by the Aggressive girls.

Peer initiations directed toward girls in the Aggressive group were distinct in very few ways (see Table G-12). In fact, **inappropriate eye contact** was the only variable found to differentiate the Aggressive girls, and even then the difference was only marginally significant [$F(3,48)=2.28$, $p<.10$]. Specifically, peers' initiations toward Aggressive girls involved the highest rate of inappropriate eye contact. Post hoc comparisons revealed

the rate for the Aggressive girls to be higher than the rate for the Withdrawn and Aggressive-withdrawn girls, but not significantly different from the Contrast girls.

Withdrawn girls. Withdrawn girls did not differ from the Contrast girls on any of the coded dimensions of their own social initiations (see Table G-11). In fact, the only distinct characteristic of the Withdrawn girls involved their rates of **Inappropriate** [$F(3,49)=3.31$, $p<.05$] and **Aggressive** [$F(3,49)=4.64$, $p<.01$] initiation which, not surprisingly, were significantly lower than the rates observed for the Aggressive girls.

Peer initiations (see Table G-12) directed toward Withdrawn girls showed marginally significant differences in terms of the rate of **inappropriate** initiations [$F(3,48)=2.31$, $p<.10$] and **inappropriate eye contact** [$F(3,48)=2.28$, $p<.10$]. Specifically, peers were less inappropriate in their initiations toward Withdrawn girls than they were for Aggressive-withdrawn girls, and there was less inappropriate eye contact within peer initiations directed toward Withdrawn girls than toward Aggressive girls.

Aggressive-withdrawn girls. Similar to the Aggressive-withdrawn boys, the Aggressive-withdrawn girls were not significantly different from the Contrast girls on any of the dimensions of social initiation, nor on the peer responses to those initiations (see Table G-11). However,

it is important to note that the Aggressive-withdrawn girls exhibited significantly lower rates of **Inappropriate** [$F(3,49)=3.31$, $p<.05$] and **Aggressive** initiations [$F(3,49)=4.64$, $p<.01$] than the Aggressive girls.

Peer initiations (see Table G-12) directed toward Aggressive-withdrawn girls showed marginally significant differences in terms of the rate of **inappropriate** initiations [$F(3,48)=2.31$, $p<.10$] and **inappropriate eye contact** [$F(3,48)=2.28$, $p<.10$]. Specifically, peers initiated inappropriately more often toward the Aggressive-withdrawn girls than toward girls in either the Withdrawn or Contrast groups. Furthermore, inappropriate eye contact was noted less frequently within peer initiations directed toward Aggressive-withdrawn girls than toward Aggressive girls.

Sequential Analyses

Sequential analyses were employed to examine group differences in the conditional probability of a specific response given a particular type of preceding initiation. Two sequences were examined:

1) the conditional probability of a negative response (i.e. Avoid/ignore or Different kind/negative) following an appropriate non-aggressive initiation.

2) the conditional probability of a positive response (i.e. Complementary or Different kind/positive) following an inappropriate aggressive initiation.

The conditional probabilities associated with each sequence were examined within the context of both target and peer initiations. Furthermore, all analyses were performed on children who had at least one initiation of the type under examination, and were repeated for children who had at least five such initiations. The exclusion of all children who had been involved in few initiations (less than five) of the specified type was aimed at improving the stability of the conditional probabilities. However, the more stringent inclusion criteria had no effect on the significance or direction of the results.

One-way ANOVAs (Classification Group), with the sexes combined, were conducted on the conditional probabilities for each of the sequences of interest. The sexes were combined for these analyses due to the reduced sample sizes resulting from the inclusion criteria reported above. For the target initiated sequences, the results presented in Table G-13 include only subjects with at least 5 initiations of the type being studied (i.e. appropriate/nonaggressive or inappropriate/aggressive). For the peer initiated sequences, also reported in Table G-13, application of similar inclusion criteria eliminated too many subjects. Consequently, for the peer initiated sequences, the data represented in the table are based on all subjects with at least one peer initiation of the type being studied.

Two of the four sequences showed marginally significant Classification Group differences on the associated conditional probabilities. First, peers were more likely to respond to the appropriate/nonaggressive initiations of the Withdrawn children with a negative response than for children in either the Aggressive or Contrast groups [$F(3,74)=2.46$, $p<.10$]. The conditional probability for the Aggressive-withdrawn group on this measure was intermediate and did not differ from the other groups. Second, children in the Aggressive-withdrawn and Contrast groups were more likely to respond to the appropriate/nonaggressive initiations of peers with a negative response than children in the Withdrawn group [$F(3,108)=2.37$, $p<.10$]. Aggressive children did not differ from the other groups on this measure, although the Aggressive group mean was only slightly lower than the mean for the Aggressive-withdrawn and Contrast groups.

There were no group differences on the conditional probabilities addressing a positive response following an inappropriate/aggressive initiation, for either the target or peer initiated sequences.

Sex Differences on Selected Code Options

Following the two-way Analyses of Variance (Classification Group x Sex), significant main effects of Sex were noted on many of the coded dimensions of the social initiations. The results of these analyses are reported in

Tables G-14 and G-15 and provide a context for subsequent interpretations and conclusions with respect to Classification Group differences. The most relevant and interesting of these results are noted below.

Boys' initiation style was significantly more aggressive [$F(1,104)=16.66$, $p<.01$] and more inappropriate [$F(1,104)=4.98$, $p<.05$] than girls (see Table G-14). In fact, the boys exhibited a 70% higher rate of aggressive initiations (boys=.36, girls=.21), and a 35% higher rate of inappropriate initiations (boys=.38, girls=.28) than girls. Girls, on the other hand, were significantly more likely to initiate social interaction with the opposite sex than were boys [girls=.25, boys=.16; $F(1,104)=4.71$, $p<.05$].

Peer responses to children's initiations also revealed several interesting main effects of Sex. Specifically, peers were more likely to respond to girls in a complementary or "same kind" manner [girls=.71, boys=.59; $F(1,104)=13.16$, $p<.01$]. In contrast, peers were significantly more likely to avoid or ignore boys' initiation attempts [boys=.29, girls=.20; $F(1,104)=10.16$, $p<.01$].

It is important to note that Sex differences reported above are based on the target social entry attempts. However, the Sex differences noted within the peer initiations directed toward the target children (Table G-15)

were almost identical, suggesting excellent generalizability of the results.

Summary and Brief Discussion

Skills involved in the initiation of social interaction (i.e. social entry behaviour) have been identified as critical to success in peer relations (see Putallaz & Wasserman, 1990 for review). Study 1 involved naturalistic observation of the social entry style of children identified by peers as Aggressive, Withdrawn, and Aggressive-withdrawn. Although an extensive literature has identified childhood patterns of aggression and withdrawal as predictive of later maladjustment, there have been few studies of the free-play behaviour and virtually no research addressing the social entry behaviour of such children. Identification of the social entry skills associated with the aggressive and/or withdrawn profile is critical to an understanding of the processes underlying peer reputations and peer relations, and an important step in the development of intervention programs on behalf of children exhibiting difficulties in this respect.

The primary aim of the study was to identify distinct social entry profiles for each of the risk groups relative to a Contrast group, as well as relative to the other risk groups. The social entry profile associated with the peer-identified Aggressive-withdrawn group was of particular interest as previous research had identified such children as being at particularly high risk for later difficulties. The group profiles are summarized below along with reference

to the degree to which the results correspond to the predictions stated in the Introduction.

Aggressive Group

Consistent with predictions, Aggressive boys and girls were highly visible on the playground and were involved in many social entry attempts. Aggressive boys and girls also exhibited the highest rates of inappropriate and aggressive initiations relative to the other same-sex groups. However, only the Aggressive girls were significantly higher than the Contrast group on these important qualitative dimensions of social entry. That is, the rates of inappropriate and aggressive initiation observed for Aggressive boys was not significantly greater than the rate for Contrast peers and, in fact, the Aggressive boys' rate of aggressive initiation was not significantly different from the rate for Withdrawn boys. This important sex difference in the Aggressive boys' and girls' profiles was not predicted but is possibly explained by the relatively high rate of aggression and physical contact which has been observed in boys' unstructured play (e.g. Lyons, Serbin, & Marchessault, 1988), and the high normative rate of aggressive initiation noted for boys within the present study. The Aggressive boys' rate of aggressive initiation does not appear to stand out relative to a highly physical same-sex peer group, while the rate for Aggressive girls is quite distinct within the context of the girls' normative playground style.

Differences in the degree to which Aggressive boys' and girls' play styles are compatible with that of same-sex peers may explain several other characteristics of the two groups. Perhaps most important, Aggressive girls were significantly lower than Contrast girls on peer likeability, while Aggressive boys enjoyed likeability scores comparable to Contrast boys. Similarly, Aggressive girls received significantly fewer "best friend" nominations, while the rate for the Aggressive boys was again comparable to the rate for the Contrast boys. Aggressive girls also exhibited more than twice the Contrast girls' rate of opposite-sex initiation suggesting an attraction to boys' more physical playground activities.

In short, Aggressive boys' high level of involvement, and elevated rates of inappropriate and aggressive initiation, appear to be consistent with same-sex normative playground behaviour, and may account for the adequate peer relations enjoyed by the group. In comparison, Aggressive girls were significantly more aggressive and inappropriate than Contrast girls, exhibiting a highly distinct social entry style that does not appear to be compatible with girls' normative playground behaviour. Aggressive girls also exhibited a significantly higher rate of opposite-sex initiations and may seek out boys because they are attracted to the boys' playground activities. Perhaps as a result of their distinctive behavioural profile, Aggressive girls were

significantly lower in terms of peer likeability than Contrast girls and were nominated significantly less frequently as a best friend.

Withdrawn Group

Consistent with predictions, Withdrawn boys and girls initiated relatively little social interaction and did not exhibit distinct rates of disruption, aggression, and inappropriateness in their initiation attempts. Perhaps as a result of their "non-aversive" entry style, Withdrawn boys and girls were not significantly different from their respective Contrast groups in terms of peer ratings of likeability. However, as predicted on the basis of previous studies of Neglected children, Withdrawn boys and girls were nominated significantly less frequently as "best friend". Withdrawn children may simply not "come to mind" when peers are identifying preferred playmates.

In sequential analyses, Withdrawn children were marginally more likely to receive a negative peer response to their own appropriate initiation attempts than were children in the Aggressive and Contrast groups. Although difficult to interpret within the context of the present study, this sequential result may be a function of a low intensity or passivity in the initiations of Withdrawn children. That is, Withdrawn children's initiation attempts may be easily ignored by peers, and/or peers may take advantage of such children because of a low likelihood

that they will retaliate. Regardless of the explanation for this trend, the negative treatment accorded Withdrawn children appears all the more notable in light of the fact that, as a group, they were the least likely to respond negatively to appropriate peer initiations.

In short, the low intensity and nonaggressive social entry style of Withdrawn boys and girls appears to leave them in relatively good standing within their respective peer groups. However, by the same token, peers do not appear to acknowledge Withdrawn children and, in fact, peers may even take advantage of the Withdrawn children possibly due to their passivity and/or low level of involvement.

It should be noted that the Withdrawn children were overrepresented among those dropped from analyses due to insufficient number of initiations. Given that the children who were excluded from analyses may have been among the least socially active children on the playground, one might argue that the reported social entry profile for the Withdrawn group would be biased in the direction of non-deviance. However, comparison of the results reported above with analyses involving the full sample (i.e. no subjects excluded) reveals no indication of bias due to the exclusion criteria.

Aggressive-withdrawn Group

Aggressive-withdrawn children were significantly lower than Contrast children in terms of peer rated likeability

and, as predicted, were rarely nominated as "best friend". Furthermore, consistent with predictions based on observations of Rejected children, Aggressive-withdrawn boys and girls were the targets of a particularly high rate of aggressive and/or inappropriate peer initiation.

Contrary to expectations, Aggressive-withdrawn children did not exhibit elements of the profiles reported above for children in the Aggressive group or the Withdrawn group, nor did they exhibit a distinctive profile which might account for the low peer acceptance and rough treatment from peers. Specifically, Aggressive-withdrawn boys and girls did not reveal higher rates of disruption, aggression, or inappropriateness in their initiation style, and were similar to the Contrast group on all qualitative dimensions of their social entry attempts. Similarly, Aggressive-withdrawn boys and girls were rated by observers as no different from their respective Contrast groups on global ratings of competence. Finally, Aggressive-withdrawn children did not appear to be discouraged from initiating social interaction as a result of the rough or inappropriate treatment and remained as socially active as Contrast children on the playground.

In conclusion, the group profiles reported above are highly consistent with Classification Group differences reported within a preliminary observational study (Lyons, Serbin, & Marchessault, 1988). Specifically, distinct

social entry profiles were exhibited by boys and girls identified by peers as either Aggressive or Withdrawn and, furthermore, the profiles appeared to be related to global aggression and withdrawal scores on the PEI as well as measures of success in peer relations. However, also consistent with preliminary work by Lyons and colleagues, children identified as Aggressive-withdrawn did not exhibit a highly distinctive social entry style nor did they exhibit elements of the Aggressive or Withdrawn groups' profiles. In short, the Aggressive-withdrawn boys and girls appeared most similar to the children in their respective Contrast groups and were not "deviant" on any dimension of their social entry behaviour directed toward peers.

Aggressive-withdrawn boys are clearly distinct within their same-sex peer group in terms of their extremely low likeability scores and the rarity with which they are nominated as a preferred playmate. Similarly, Aggressive-withdrawn girls are significantly lower than Contrast peers on both important measures of acceptance, although they share this distinction to some degree with the other risk groups. Thus, the absence of a distinct social entry profile for the Aggressive-withdrawn children is striking in light of evidence that they are among the least liked children on the playground. In short, social entry skills, hypothesized to be an area of deficit for children experiencing difficulties with peers, failed to explain the

low peer acceptance experienced by Aggressive-withdrawn boys and girls.

STUDY 2: ANALYSIS OF THE INDIVIDUAL ITEMS OF THE PUPIL EVALUATION INVENTORY

The naturalistic observations reported in Study 1 identified several important characteristics of the social behaviour of children rated as extreme on dimensions of aggression and/or withdrawal. However, those observations were limited to social entry skills, a significant but restricted component of children's global involvement within the peer group. Furthermore, the observations of social entry skills failed to identify specific dimensions of the Aggressive-withdrawn group profile that might explain the relative failure of such children in their peer relations.

Study 2 involves an analysis of the individual items of the Pupil Evaluation Inventory (Pekarik et al., 1976). Above all, the study represents an attempt to describe in greater detail the social behaviour and behaviour problems of children in the three behaviourally deviant groups. Specifically, the study aims to differentiate the Aggressive, Withdrawn, and Aggressive-withdrawn children in terms of behaviours subsumed under the two PEI global factors of aggression and withdrawal that had been used for classification purposes. Taken alone, extreme scores on global factors of aggression and withdrawal do not permit an analysis of the specific behaviours that may be predictive of peer relations difficulties experienced by the children

in these groups. Furthermore, the study aims to further address whether children in the Aggressive-withdrawn group exhibit a blend of the characteristics of the Aggressive group and the Withdrawn group or, alternatively, a distinct behaviour profile.

Method

Identification of Sample

For the analysis of individual PEI items, 56 subjects were added to the observational sample described in Study 1 including: 1) those not selected for the observational project but fully meeting the deviant group selection criteria, and 2) all subjects from a subsequent and related study also fully meeting the deviant group selection criteria (McAffer, 1987). The increased cell sizes were intended to improve the power of the analyses and the stability of results. The two samples are believed to be comparable in that the children who were added were identified according to the same criteria, and were from the same schools, as those selected to the observational sample described in Study 1. Consequently, the following description of the extended Item Analysis sample is brief and only serves to demonstrate the comparability of the samples on the selection criteria and on the PEI Likeability factor.

Sample size. The cell sizes for the Item Analysis sample are presented in Table I-1. Table I-1 also indicates the number of subjects that were added to the Observational sample to create the extended Item Analysis sample. It should be noted that only the three peer-identified deviant groups were included in the item analysis of Study 2.

Comparability of the Observational and Item Analysis samples on the selection criteria. Table I-2 contrasts the observational sample and the item analysis sample on the PEI aggression and withdrawal *z*-scores used for group selection, as well as on the PEI likeability *z*-score. A visual inspection of the mean scores in each group, broken down by sex, suggests that the two samples are extremely similar across the three deviant groups (Aggressive, Withdrawn, and Aggressive-withdrawn) when the males and females are examined separately. In fact, the actual differences in the mean aggression and withdrawal *z*-scores do not exceed 0.12 (i.e. slightly more than 1/10 of a standard deviation) for the behaviourally deviant groups. Similarly, the differences between the samples are minimal on the PEI likeability *z*-scores. The maximum difference between the observational sample and the item analysis sample on the PEI likeability factor is 0.11 across the three behaviourally deviant groups.

Data Collection

Peer nominations on the individual items of the Pupil Evaluation Inventory (Pekarik et al., 1976), used for selection purposes in Study 1, served as the exclusive focus of analyses in Study 2. Based on the raw number of nominations for an individual item, the proportion of classmates nominating each child for each of the 34 PEI items was computed. In addition, the PEI was administered twice (8 month interval) for a subsample of 237 children. The proportion of nominations at the first and second administrations, on each of the PEI items, were correlated as a measure of reliability and stability of the nominations over the course of a school year.

As noted in the introduction, the use of the proportion measure for group comparisons was believed to be problematic due to the effects of bias inherent in the peer nomination process (e.g. negative halo effect). Consequently, in order to improve the yield of meaningful results, a new measure was calculated for each child on each and every PEI item. The new computed variable, hereafter referred to as a salience ratio, was designed to reflect the degree to which a certain behavioural item is an important or salient element of an individual child's behavioural profile. Specifically, the proportion of classmates nominating a child for a particular item is divided by the mean proportion of nominations for all the items loading on the

corresponding PEI factor. For example, the proportion of the class nominating a child for the item "Act like a baby" would be divided by the mean proportion of nominations across all 20 aggression items.

Example: Computation of the salience ratio for the PEI aggression item "Acts like a baby".

$$\text{Salience ratio} = \frac{\text{Proportion of class nominating child for "Acts like a baby"}}{\text{Mean proportion across all aggression items}}$$

When the proportion of nominations for a child, on a particular PEI item, exceeds the child's mean proportion across all items of the associated PEI factor (i.e. a salience ratio greater than 1.00), the behaviour is interpreted to be a salient element of the child's profile. On the other hand, when the proportion of nominations for an individual item is less than the mean proportion for the factor (i.e. a ratio less than 1.00), the behaviour is interpreted to be less important or salient.

By extension, when the mean salience ratio for children of a particular Classification Group is significantly above or below 1.00 for a given behaviour, the behaviour can be interpreted to be highly salient (characteristic) or minimally salient (uncharacteristic) for the group as a whole. Of course, when ratios are consistently greater than or less than 1.00 for a particular item across all groups,

it may simply be an indication that the behaviour is more or less salient in the general population. Admittedly, the salience ratio may also be a function of 1) the frequency of the behaviour within the social arena, and 2) the social impact or noticeability of the behaviour. Thus, additional rules for interpretation of results were developed and are described in the Results section for Study 2.

Results

The following section includes: 1) an evaluation of the stability and reliability of ratings on the individual items of the Pupil Evaluation Inventory (Pekarik et al., 1976) over an eight month period, 2) within Classification Group assignment of the individual PEI item salience ratios as either High, Neutral, or Low salient, and 3) between Classification Group comparisons of salience ratios and proportion nominations on individual PEI items. The general goal of analyses was to develop behavioural profiles for each of the peer-identified deviant groups on the basis of behaviours subsumed under the global PEI factors of aggression and withdrawal. Specifically, the approach to analysis was designed to decompose the global Aggression and Withdrawal factors of the PEI, originally used as group selection criteria, in order to differentiate the risk groups in terms of items loading on their shared extreme PEI factor scores.

As noted above, the peer-identified Contrast group has been excluded from Study 2. The peer-identified deviant groups were preselected on the basis of extreme scores on the PEI aggression and withdrawal factors and, therefore, PEI item comparisons with the "average" Contrast group would not be meaningful.

Validity of the Peer Ratings

The following section examines several measures reflecting the validity of the nominations on the PEI items and, consequently, the utility of those items in developing social behaviour profiles for the peer-identified groups.

Range and mean number of raters within each of the classes administered the PEI. Many of the benefits of using peers to assess behaviour are derived from the fact that the final units of analysis are typically based on the combined ratings of many individuals. The multiple raters, in this case classmates, permits the calculation of averaged ratings which are generally more valid and stable than the potentially biased or idiosyncratic assessment of a single individual. Table J-1 presents the range and mean number of raters in the classes from which children in the Item Analysis sample were selected. The average number of raters in each class ranged from 26.0 to 26.5 across Classification Groups, and there were no fewer than 22 raters in any of the classes involved in the study. A two-way Analysis of Variance (Sex by Classification Group) found no significant differences in the number of raters across Sex [$F(1,134)=.003$, n.s.] or Classification Group [$F(2,134)=0.44$, n.s.].

Reliability and stability. The utility and validity of peer ratings is, to some degree, a function of the reliability and stability of the nominations over time. A

strong correlation between ratings made at two different points in time would argue against the peers' ratings being random or idiosyncratic and would suggest that the rated behaviours are stable and persistent characteristics.

At the second of two schools involved in the present study, the Pupil Evaluation Inventory was readministered to the ten participating classes eight months following the initial administration (October 1983 and June 1984). The proportion of the class nominating a child for a particular item at time 1 (October 1983) was then correlated (Pearson product moment correlations) with the proportion of nominations at time 2 (June 1984). It should be noted that these correlations include all children in each of the classes rather than only those selected to the peer-identified groups. Table J-2 presents the correlation between the proportion of nominations for each item at time 1 and time 2. The correlations have been presented for the boys, girls, and total sample (boys and girls combined), and have been ordered within each PEI factor according to the magnitude of the correlation for the total sample.

The correlations for the boys and girls combined range from .55 to .83 and are all significant at $p<.001$ (one-tailed test). The average correlations were .70 (median=.69) for items within the Aggression factor, .75 (median=.77) for items within the Withdrawal factor, and .74 (median=.74) for items within the Likeability factor. The

magnitude of the correlations is indicative of good test-retest reliability and would suggest that the behaviours represented by the PEI items are relatively stable over an eight month period.

Inspection of the coefficients for the two sexes separately would suggest overall higher test-retest correlations for the girls. However, it is difficult to determine the reasons for this trend without further analysis beyond the scope of the present study. The average correlation for items within the Aggression factor was .66 (median=.67) for the boys and .73 (median=.73) for the girls. The average correlation for items within the Withdrawal factor was .69 (median=.72) for the boys and .80 (median=.81) for the girls. Finally, the average correlation for items within the Likeability factor was .66 (median=.71) for the boys and .79 (median=.79) for the girls.

Statistical Approach to Developing Group Profiles

The statistical approach to developing group profiles focuses primarily on the PEI item salience ratios and involves two distinct levels of analysis. The two levels of analysis reported in this section, as well as the rationale for the two-level approach, are described below.

Level 1: Establishing the salience of items for each group. The first level of analysis involved examination of salience ratios for each of the peer-identified behaviourally deviant groups. Within-sex confidence intervals (95%) were calculated for each Classification Group mean on the salience ratio for each item of the PEI. The confidence intervals were examined in order to determine whether a salience ratio could be statistically inferred to fall above or below 1.00. Based on these intervals, the 34 PEI items were classified into three categories: 1) high salient - those behaviours with a mean salience ratio above 1.00 (i.e. the confidence interval did not include the neutral value of 1.00), 2) neutral salient - those behaviours with mean salience ratios close to 1.00 (i.e. confidence interval included the neutral value of 1.00), and 3) low salient - those behaviours with a mean salience ratio below 1.00 (i.e. confidence interval again did not include the neutral 1.00).

Although all three categories are reported in the tables (i.e. high, neutral, low), only the items found to be highly salient were used in this stage of the development of group profiles in order to avoid "overusing" the data. Although the low salience items may be indicative of behaviours that are "uncharacteristic" of the groups, the fact that some items exhibit a ratio below 1.00 is mathematically necessary if other ratios fall above 1.00.

It is important to note that, for each behaviourally deviant group, only the items from the factor on which that group was rated as extreme were examined. Children rated as extreme on only one behavioural dimension (e.g. aggression) typically had few nominations for items from the other dimension (e.g. withdrawal). Consequently, the salience ratios for items on a child's non-deviant dimension were typically highly variable and perhaps less meaningful. Whereas the salience ratios for individual children typically ranged from 0 to 2.50 on their "deviant" dimension, the salience ratios were as high as 9.00 for items on the non-deviant dimension due to the much lower denominator in the calculation of the ratio (see above). Similarly, items loading on the PEI Likeability factor were not examined due to excessive within-group variability on the global likeability scores. It is also important to note that, at this level of analysis, groups were not compared and specific behaviours could be reported as characteristic of more than one group.

Level 2: Comparison of the groups on the salience of individual items of the PEI. The second, and perhaps more important, level of analysis involved an attempt to differentiate the behaviourally deviant groups "sharing" extreme scores on a factor of the PEI. That is, Aggressive and Aggressive-withdrawn children were compared on the salience ratios for the PEI aggression items, while

Withdrawn and Aggressive-withdrawn children were compared on the salience ratios for the PEI withdrawal items. The significant differences between the groups on PEI items were classified into three categories. Following the previous level of analysis where items were classified according to their salience, the most important discriminating items were designated as those whereby the item was "High salient" (salience ratio was significantly greater than 1.00) for one group and "Low salient" (salience ratio significantly less than 1.00) for the other group, with significant differences between the ratios on the basis of a t-test. A second category of discriminating item, considered less important than the first category, involved those items which were "High salient" for one group and "Neutral salient" (salience ratio not significantly different from 1.00) for the other group, with significant differences between the ratios. Finally, a third category of discriminating item, considered to be the least important, involved those items which were "Low salient" for one group, and "Neutral salient" for the other group, again with the ratios found to be significantly different. For the items falling into one of the three categories described above, the mean proportions of nominations are presented as additional information. However, due to the problems associated with statistical comparison of the groups on the raw proportions, they have been included for descriptive purposes only.

The strict criteria for inclusion as a discriminating behavioural descriptor follows from the concerns discussed earlier over the use of raw proportions of nominations in developing group profiles (e.g. negative halo effects). Although the importance and utility of nomination data is clearly acknowledged, one must take certain precautions when analyzing peer nominations at the item level. The two-level approach to developing the group profiles in the following section has, hopefully, addressed some of these concerns.

Group Profiles and Differentiation of Behaviourally Deviant Groups on PEI Items

The following group profiles and comparisons are based on analyses reported in Tables J-3 through J-10. Profiles based on the PEI aggression items for the Aggressive and Aggressive-withdrawn boys are reported first, followed by profiles for the Aggressive and Aggressive-withdrawn girls. The section concludes with the profiles and comparisons for the Withdrawn and Aggressive-withdrawn boys and girls on the PEI withdrawal items.

Aggressive and Aggressive-withdrawn Groups Contrasted on the PEI Aggression Items

Aggressive boys. Examination of the salience ratios and the corresponding confidence intervals suggests that six items can be described as highly salient components of the Aggressive boys' profile (see Table J-3). Three of these

items, "Can't sit still", "Don't attend to teacher", and "Bother others working", seem to be indicative of attentional difficulties and possibly a heightened activity level. Two items, "Play the clown" and "Show off in class" would suggest disruptive classroom behaviour designed to attract attention, while a final item "Say they can beat up others" would suggest an aggressive/dominant dimension to the Aggressive boys' profile.

Aggressive-withdrawn boys. Similar to the Aggressive boys, three items indicative of attentional difficulties, "Can't sit still", "Don't attend to teacher", and "Bother others working" were found to be highly salient components of the Aggressive-withdrawn boys' profile (see Table J-3). However, the two remaining items found to be highly salient were not a part of the Aggressive boys' profile and appear to reflect an uncooperative/immature dimension. Specifically, the Aggressive-withdrawn boys were nominated by an average of 90% more children for the "Act like a baby" item, and 60% more children for the "Always mess around" item, than their average proportion of nominations across the 20 aggression items. The magnitude of the increases in nominations for these items would suggest that these are important dimensions of the Aggressive-withdrawn boys' profile.

Items differentiating the Aggressive and Aggressive-withdrawn boys. As noted earlier, the category of items believed to be the most important discriminators of the groups under comparison are those whereby one group exhibits a "High" salience ratio, while the ratio for the second group is "Low" and statistically different (by t-test) from the first. Only two PEI aggression items met these criteria for the Aggressive and Aggressive-withdrawn boys (see Table J-4). Specifically, "Always mess around" was a highly salient component of the Aggressive-withdrawn boys' profile while the item was minimally salient for the Aggressive boys. Furthermore, the Aggressive-withdrawn boys actually received a higher proportion of class nominations for this item than the Aggressive group (AW=.42 vs. A=.31), a finding which runs contrary to what would be expected given the more extreme selection criteria for the Aggressive group. A second discriminating item in the "most important" category was "Say they can beat up others". This item was highly salient for Aggressive boys, minimally salient for the Aggressive-withdrawn boys, and Aggressive boys were nominated much more frequently (A=.56 vs. AW=.21).

Two PEI aggression items were assigned to the second category of discriminating item, namely those items which were "High" salience for one group, while the ratio for the second group was "Neutral" and statistically different from the first. "Act like a baby" was a highly salient component

of the Aggressive-withdrawn boys' profile while the item was neutral salient for the boys in the Aggressive group. The Aggressive-withdrawn group received a higher proportion of nominations for this item than the Aggressive group (AW=.49 vs. A=.44). The salience ratios for the second item in this category, "Show off in class", were only marginally different for the two groups. The "Show off in class" item was a highly salient component of the Aggressive boys' group profile, neutral salient for the Aggressive-withdrawn group, and Aggressive boys were nominated at more than twice the rate (A=.55 vs. AW=.23).

Finally, three PEI aggression items were assigned to the third and possibly the least important category of discriminating item, including those which were "Low salient" for one group while the ratio for the second group was "Neutral" and statistically different from the first. "Act stuck up" was a minimally salient component for the Aggressive-withdrawn group of boys while the item was neutral salient for the Aggressive group. The Aggressive-withdrawn group received fewer than half as many nominations as the Aggressive group on this item (AW=.17 vs. A=.42). An item which seems to be qualitatively related, "Mad when don't get their way", exhibited the same relationship between the groups. Specifically, the item was minimally salient for the Aggressive-withdrawn group, neutral for the Aggressive group, and revealed less than half as many

nominations for the Aggressive-withdrawn group (AW=.22 vs. A=.47). A final item, "Do strange things", was minimally salient for the Aggressive group and neutral salient for the Aggressive-withdrawn group. However, the Aggressive group actually had a higher rate of nominations for this item than the Aggressive-withdrawn group (A=.31 vs. AW=.24). Thus, although the Aggressive group was nominated more frequently than the Aggressive-withdrawn group for this item, relative to all other aggression items, "Do strange things" is actually of lesser importance in the profile of the Aggressive boys than for the Aggressive-withdrawn boys.

Aggressive girls. Only one item, "Say they can beat up others", was found to be a highly salient component of the social behavioural profile for Aggressive girls (see Table J-5). The item was also found to be characteristic of Aggressive boys and, again, is suggestive of an aggressive/dominant dimension to the Aggressive girls' social behaviour.

Aggressive-withdrawn girls. In contrast, five PEI aggression items were found to be highly salient components of the social profile for Aggressive-withdrawn girls (see Table J-5). Four of the five items were identical to those found to be characteristic of the Aggressive-withdrawn boys. "Can't sit still" and "Don't attend to teacher" are indicative of attentional difficulties, while the items "Act

like a baby" and "Always mess around" would appear to represent an uncooperative and immature dimension to their social behaviour. The only additional salient item, "Nothing makes them happy", may be further indication of uncooperativeness although it may also reflect a degree of depression in the Aggressive-withdrawn girls.

Items differentiating the Aggressive and Aggressive-withdrawn girls. Three items fell within the category of most important discriminators of the Aggressive and Aggressive-withdrawn girls (see Table J-6). Similar to the boys, "Always mess around" was a highly salient component of the Aggressive-withdrawn girls' profile while the item was minimally salient for the Aggressive girls. Furthermore, and again similar to the results for the boys, the Aggressive-withdrawn girls actually received a substantially higher proportion of class nominations for this item than the Aggressive girls (AW=.38 vs. A=.22). The item "Act like a baby" revealed the same relationship between the groups. That is, the item was highly salient for the Aggressive-withdrawn girls, minimally salient for the Aggressive girls, and revealed a higher proportion of nominations for the Aggressive-withdrawn girls (AW=.48 vs. A=.27). A final item in the "important" category, "Say they can beat up others", was an important component of the Aggressive girls' profile but minimally salient in the profile for Aggressive-withdrawn girls (A=.44 vs. AW=.26).

Two PEI aggression items were assigned to the second category of discriminating item. "Nothing makes happy" was a highly salient component of the Aggressive-withdrawn girls' profile while the item was neutral salient for the Aggressive girls. The Aggressive-withdrawn girls exhibited a slightly higher rate of nomination on this item than girls in the Aggressive group (AW=.40 vs. A=.35). The salience ratios for the second item in this category, "Don't attend to the teacher", were only marginally different for the two groups. Again, the item was a highly salient component of the Aggressive-withdrawn girls' profile while the item was neutral salient for the Aggressive girls. However, the mean proportion of nominations for the two groups was identical on this item (AW=.40 vs. A=.40).

Finally, two PEI aggression items were assigned to the third category of discriminating item. "Play the clown" was a minimally salient component for the Aggressive-withdrawn girls while the item was neutral salient for the Aggressive girls. The Aggressive-withdrawn group received fewer than half as many nominations as the Aggressive group on this item (AW=.18 vs. A=.40). The salience ratios for the second item in this category, "Give dirty looks", were only marginally different for the two groups. The item was a minimally salient component of the Aggressive girls' profile while the item was neutral salient for the Aggressive-withdrawn girls. The mean proportion of nominations was

slightly higher for the Aggressive-withdrawn girls on the "Give dirty looks" item (AW=.29 vs. A=.24).

Withdrawn and Aggressive-withdrawn Groups Contrasted on the PEI Withdrawal Items

Withdrawn boys. As noted above, only PEI withdrawal items were examined in the development of behaviour profiles for the Withdrawn children and the differentiation of that group from their Aggressive-withdrawn peers. Only one withdrawal item, "Aren't noticed much", was found to be highly salient for the Withdrawn boys (see Table J-7). Although difficult to interpret when taken alone, this item would appear to indicate a dimension of low involvement as characteristic of the Withdrawn boys.

Aggressive-withdrawn boys. Three withdrawal items were found to be highly salient for the Aggressive-withdrawn boys (see Table J-7). The items "Chosen last to join groups" and "Have very few friends" would appear to be indicative of peer rejection. Again, although difficult to interpret when examined alone, the item "Upset by questions in class" may reflect a shyness or uneasiness in group situations, low self-confidence, or perhaps an emotional lability.

Items differentiating the Withdrawn and Aggressive-withdrawn boys. Only one PEI withdrawal item was assigned to the category of most important discriminators of the Withdrawn and Aggressive-withdrawn boys (see Table J-8). "Aren't noticed much" was a highly salient component of the

Withdrawn boys' profile while the item was minimally salient for the Aggressive-withdrawn boys. Furthermore, the Withdrawn group was nominated more than seven times as frequently as the Aggressive-withdrawn boys for this item (W=.39 vs. AW=.05).

Two PEI withdrawal items were assigned to the second category of discriminating item. "Chosen last to join groups" was a highly salient component of the Aggressive-withdrawn boys' profile while the item was neutral salient for the Withdrawn boys. Consistent with the direction of the difference in the salience ratios, Aggressive-withdrawn boys were nominated more frequently for this item than were the boys in the Withdrawn group (AW=.34 vs. W=.28). The salience ratios for the second item in this category, "Upset by questions in class", were only marginally different for the two groups. Again, the item was a highly salient component of the Aggressive-withdrawn boys' profile while the item was neutral salient for the Withdrawn boys. However, the mean proportion of nominations for the two groups were almost identical (AW=.23 vs. W=.24).

Finally, three PEI withdrawal items were assigned to the third category of discriminating item. Both "Unhappy or sad" and "Too shy to make friends" were minimally salient components of the Aggressive-withdrawn boys' profile while the item was neutral salient for the Withdrawn boys. For both items, the Aggressive-withdrawn group received less

than half as many nominations as the Withdrawn group (W=.29 vs. AW=.10, and W=.32 vs. AW=.12, respectively). One additional item, "Feelings are easily hurt", revealed a marginal difference between the groups. The item was a minimally salient component of the Withdrawn boys' profile and neutral salient for the Aggressive-withdrawn boys. However, the mean proportion of nominations for the two groups were almost identical on this item (AW=.18 vs. W=.17).

Withdrawn girls. None of the withdrawal items were found to be highly salient components of the Withdrawn girls' behaviour profile (see Table J-9). The items featuring the highest salience ratios were "Chosen last to join groups" and "Aren't noticed much". However, none of the salience ratios were found to be significantly different from the neutral score of 1.00.

Aggressive-withdrawn girls. Three withdrawal items were found to be important components of the Aggressive-withdrawn girls' behaviour profile (see Table J-9). Two of the items, "Chosen last to join groups" and "Have very few friends" would appear to reflect peer rejection as similarly noted in the results for the Aggressive-withdrawn boys. The remaining item, "Upset by questions in class", may reflect a shyness, lack of self-confidence, or perhaps an emotional lability.

Items differentiating the Withdrawn and Aggressive-withdrawn girls. Only one PEI withdrawal item was assigned to the category of most important discriminators of the Withdrawn and Aggressive-withdrawn girls (see Table J-10). "Upset by questions in class" was a highly salient component of the Aggressive-withdrawn girls' profile while the item was minimally salient for the Withdrawn girls. Furthermore, the Aggressive-withdrawn group was nominated more often for this item than the Withdrawn group of girls (AW=.31 vs. W=.20).

No items met the criteria for assignment to the second category of discriminating item.

Finally, one PEI withdrawal item was assigned to the third category of discriminating item. "Aren't noticed much" was a minimally salient component of the Aggressive-withdrawn girls' profile while the item was neutral salient for the Withdrawn girls. Similar to the results for the boys, the Withdrawn girls were nominated three times as often as the Aggressive-withdrawn girls for this item (W=.36 vs. AW=.12).

Summary and Brief Discussion

The aim of Study 2 was to develop a more general description of the social behaviour and behaviour problems of children within the three peer-identified risk groups, and to differentiate the groups on items subsumed under the two PEI global factors of aggression and withdrawal. Based on salience ratios computed for the individual items of the PEI, within-group and between-group analyses successfully identified the most salient characteristics and unique descriptors of the three groups. These results are believed to be particularly important in that they begin to identify social behaviours unique to the Aggressive-withdrawn profile and, by extension, the behaviours which may be considered most aversive to the peer group and most detrimental to peer relations. A brief summary of the results of the item analysis follows, including the degree to which the profiles correspond with initial predictions stated in conjunction with the hypotheses.

Aggressive group

As predicted, the Aggressive boys' profile featured behaviour problems reminiscent of Attention Deficit Hyperactivity Disorder (ADHD) including difficulties sitting still, classroom inattentiveness, and bothering other children. Aggressive girls, however, were not rated as extreme on the ADHD spectrum behaviours, perhaps reflecting

the much lower base rate for the disorder in girls (DSM-III, American Psychiatric Association).

The Aggressive boys' profile also featured attention seeking behaviour. Although such behaviour might be considered problematic by many adults, "showing off" and "playing the clown" implies that one has or can do something that may impress the other children. Thus, it is both interesting and important that these items discriminate the Aggressive boys from their low-liked Aggressive-withdrawn peers as it may reflect an area of competence (e.g. ability to make children laugh) predicted to differentiate the two groups. Supplementary analyses provided some preliminary support for the interpretation that behaviours represented by the items "showing off" and "playing the clown" may have a positive, or at least neutral, impact on peer relations. Although not included in the formal presentation of group profiles because of concerns for the stability of the results, salience ratios calculated for the "average" Contrast children would suggest that the prominence of such behaviours in a group's profile may not necessarily be destructive to peer relations (see Appendix K for salience ratios associated with Contrast boys and girls).

Finally, both girls and boys in the Aggressive group were rated by peers as claiming they could beat up others. The prediction that such behaviours would be more prominent within the Aggressive girls' profile may be supported by the

fact that aggressive threats were the only highly salient behaviour for girls, whereas the behaviour was only one of six highly salient behaviours for the Aggressive boys. The fact that aggressive threats are central in the Aggressive girls' profile, and that such behaviour is so inconsistent with the normative playground behaviour for girls, may partially explain the particularly poor peer relations experienced by Aggressive girls. Perhaps most important, whereas aggressive threats may be tempered by the presence of other "positive" behaviours (e.g. "showing off" and "playing the clown") in Aggressive boys, the absence of such behaviours as highly salient in the Aggressive girls' profile may further explain their poor peer relations relative to their male counterparts.

Withdrawn Group

Predictions regarding the peer-rated profiles for Withdrawn boys and girls were fully supported. Withdrawn boys and girls were best characterized as not being noticed on the playground, suggesting low involvement in activities and isolation with respect to the peer group. In addition, the "Aren't noticed much" item was one of the best discriminators of Withdrawn and Aggressive-withdrawn children and, as predicted, was more salient in the Withdrawn boys' profile than in the profile for the Withdrawn girls. The predicted sex difference in salience may be due to the degree to which isolation is inconsistent

with boys' normative playground behaviour. Also predicted, neither Withdrawn boys nor girls were characterized by items reflecting rejection, suggesting that their isolation is primarily self-initiated in contrast to the peer-initiated isolation (i.e. rejection) of the Aggressive-withdrawn children. Finally, additional items reflecting sadness and shyness distinguished the Withdrawn boys from the Aggressive-withdrawn boys suggesting that peers are somewhat sensitive and understanding of the Withdrawn boys' difficulties. Furthermore, the fact that peers acknowledge shyness and sadness as characteristic of the Withdrawn boys appears to be supportive of the suggestion that Withdrawn children are primarily self-isolated.

Aggressive-withdrawn Group

Peer ratings of the Aggressive-withdrawn children on the PEI withdrawal items revealed "having few friends" and "being chosen last for group activities" as highly salient characteristics. As predicted, these items reflect the peer rejection experienced by the Aggressive-withdrawn children. Furthermore, as noted above, sadness and shyness were significantly less salient in the profile of Aggressive-withdrawn boys relative to Withdrawn boys further supporting the suggestion that the Aggressive-withdrawn children are rejected by their peers rather than self-isolated. Also predicted, Aggressive-withdrawn children were distinct from the Withdrawn group in that they were very rarely nominated

for the item "Aren't noticed much". Thus, lack of involvement is not a salient characteristic of Aggressive-withdrawn children as it clearly was for children in the Withdrawn group.

An explanation for the peer rejection experienced by the Aggressive-withdrawn children was observed within the ratings on the PEI aggression items. First, similar to the Aggressive boys, peer ratings of the Aggressive-withdrawn children were characterized by difficulty sitting still in class and attending to the teacher, and a tendency to bother others who are working. Thus, as predicted, Aggressive-withdrawn children demonstrate a profile of classroom disruption and inattentiveness characteristic of behaviours within the ADHD spectrum. Second, and perhaps most important, Aggressive-withdrawn boys and girls were distinct from their Aggressive counterparts in terms of the very high salience of "acting like a baby" and "always messing around" in their group profile. In fact, Aggressive-withdrawn children easily exceeded the Aggressive group on both the salience ratio and the proportion of nominations for these two items, suggesting important qualitative differences in the way the two groups seek attention. Whereas Aggressive boys seek attention through "performances" such as showing off and acting the clown, Aggressive-withdrawn boys and girls attract attention through their immaturity, emotional lability, and disruption. The high salience of the items

"Nothing makes happy" and "Upset by questions in class" is further evidence of emotional lability and immaturity as important characteristics of the children in the Aggressive-withdrawn group.

In conclusion, the use of the salience ratio in developing group profiles and in differentiating the groups proved to be a highly effective approach to analysis. Although the salience ratio does not capture the degree of consensus with which peers believe a behaviour to be characteristic of a given child (as in the proportion of nominations), it does appear to reliably control for the effects of negative halo and differential selection criteria on between group analyses. Furthermore, the application of a two-level approach to analysis is believed to have further controlled for systematic bias inherent in the peer nomination procedure. It is strongly believed that the resulting behavioural profiles are highly valid descriptions of the most important behaviours defining the groups and impacting on the quality of peer relations.

For the most part, items within the PEI are self-explanatory and do not require extensive inference as to what they represent in social behavioural terms. However, due to the fact that the present study used a French translation of the PEI items, one of the items would appear to require further elaboration. Specifically, the item "Always mess around" seemed qualitatively similar to

items such as "Play the clown" and "Bother others working". However, the three items did not cluster together in terms of the group profiles. For example, "Play the clown" and "Bother others working" were both highly characteristic of the Aggressive boys, while "Always mess around" was highly salient for Aggressive-withdrawn children but minimally salient for the Aggressive children. Furthermore, the magnitude of the between group difference on the "Always mess around" item would suggest that it is an extremely important component of the Aggressive-withdrawn profile and is likely critical in explaining a large part of the group's difficulties in peer relations.

Examination of the French translation of the PEI that was administered suggested that the French and English versions of the "Always mess around and get into trouble" item may have been qualitatively different. The English version would appear to be quite general and possibly reflect a wide variety of disruptive behaviour ranging from mild classroom clowning to more serious problem behaviours which might have more serious consequences. The French version of the item, "Ceux qui s'empêtrent tout le temps et se mettent en difficultés", was described by an impartial francophone judge as possibly "stronger" than the English version and more specifically suggestive of those who don't follow the rules, can't cooperate with the group, get themselves into trouble, and are all mixed up. Although no

further investigation of the subtleties of the item has been conducted, there is some preliminary indication that the current French translation of "Always mess around" captures behaviours that are potentially more aversive for the peer group. The extremely high salience of the "Always mess around" item in the Aggressive-withdrawn profile, relative to its low salience in the Aggressive profile, suggests important predictive power for the range of behaviours that may be subsumed under the current French translation of the item.

General Discussion

Competence in social interaction has been consistently related to peer status, and recent studies have indicated that social skills are predictive of success in peer relations. The present study involved a multimethod assessment of the social entry skills and general social behaviour of children believed to be at risk in their peer relations. The primary aim was to establish social behavioural profiles for children identified by peers as aggressive and/or withdrawn, with an emphasis on a group of children identified by peers as extreme on both major dimensions. Identification of the specific social behaviours associated with the Aggressive and/or Withdrawn profile is critical to an understanding of the processes underlying the formation and maintenance of peer reputations and peer relations, and an important step in the development of intervention programs on behalf of the frequently rejected children in such groups.

Through behavioural observations of social entry skills and peer nominations on the individual items of the Pupil Evaluation Inventory (Pekarik et al., 1976), the study successfully identified distinct profiles for each of the peer-identified risk groups. Important elements of the group profiles were subsequently related to several measures of the degree of success in peer relations. Although the design of the study did not permit statements of causality,

the behaviours interpreted as most important to peer relations were noted and are believed to provide a basis for future studies.

Group Profiles and Peer Relations

Separate group profiles were generated on the basis of observations of social entry attempts and analysis of the individual items of the Pupil Evaluation Inventory. An integration of the results of the two studies provides a detailed general description of the social behaviour of the three risk groups.

Aggressive group. Boys and girls in the Aggressive group exhibited distinct social behavioural profiles which were consistent with their extreme scores on the PEI aggression factor. However, differences in the normative social play style for boys and girls appeared to be related to sex differences in the quality of peer relations for the two groups. Specifically, the rate of aggression and high activity level exhibited by Aggressive boys tended to be consistent with generally high base rates for these behaviours within the boys' normative playground style. Perhaps as a result, Aggressive boys were found to have adequate peer relations as indicated by PEI likeability scores and best friend nominations comparable to boys in the "average" Contrast group.

On the other hand, the elevated rate of aggression exhibited by Aggressive girls does not appear to be

compatible with girls' normative playground behaviour, and may explain the much higher rate of opposite-sex initiations by the Aggressive girls. That is, Aggressive girls may seek out boys because they are attracted to the boys' playground activities. In so much as the elementary school playground is relatively gender segregated, Aggressive girls may find themselves not quite fitting into either the boys' or girls' peer group, perhaps explaining significantly lower scores on peer likeability and fewer nominations as best friend.

On the basis of peer nominations, "showing off" and "clowning around" were found to be highly salient behaviours for Aggressive boys, but not Aggressive girls. These behaviours have been generously interpreted as the area of "competence" that had been originally hypothesized to distinguish the Aggressive group from the low-liked Aggressive-withdrawn group. Such behaviours are believed to be supportive of peer relations for Aggressive boys and perhaps temper the highly salient threatening behaviours in their profile (e.g. "Say they can beat up others"). The absence of these forms of "competence" in the Aggressive girls' profile may further explain the fact that they were rated no higher on the PEI likeability factor than the girls of the Aggressive-withdrawn group.

Withdrawn group. Boys and girls in the Withdrawn group also exhibited social entry styles consistent with extreme scores on the PEI withdrawal factor. Playground

observations of the Withdrawn children did not reveal distinct rates of interruption, aggression, and inappropriate initiation relative to Contrast peers and, perhaps related, Withdrawn boys and girls were found to enjoy adequate peer likeability. However, despite the average likeability ratings, peers often responded negatively to Withdrawn children's appropriate social initiations possibly due to a passivity and low intensity in their initiation style. Similarly, a low rate of best friend nominations for the Withdrawn children was attributed to the group's low rate of initiation and low level of playground involvement.

The most salient behaviours for the Withdrawn children, derived through analysis of peer nominations, were highly consistent with the observational results summarized above. Specifically, Withdrawn children were best characterized as not being noticed, reflecting the observed low rate of initiation and isolation on the playground. "Aren't noticed much" was the best discriminator of Withdrawn and Aggressive-withdrawn children and, as predicted, was more salient in the Withdrawn boys' profile than in the profile for the Withdrawn girls. The predicted sex difference in salience may reflect the greater degree to which isolation is inconsistent with boys' normative playground behaviour.

In general, the peer nominations provided substantial support for the prediction that the low involvement

exhibited by the Withdrawn children is primarily the result of self-initiated isolation in contrast to the peer-initiated isolation (i.e. rejection) experienced by the Aggressive-withdrawn group. While the elevated rates of negative peer response to appropriate initiations might appear inconsistent with this interpretation, the result was only marginally significant and further research is necessary to assess the nature of the negative peer responses directed toward peer-identified Withdrawn children.

Aggressive-withdrawn group. The observed social entry behaviour of Aggressive-withdrawn children was not consistent with the group's global scores on the PEI, nor did it appear to be related to the group's particularly poor peer relations. Aggressive-withdrawn children were not more aversive or deviant than their Contrast peers on any of the coded dimensions of social entry and, in fact, only the peers' high rates of aggression and inappropriate initiations directed toward Aggressive-withdrawn children appeared to be related to measures of acceptance. That is, consistent with low likeability ratings and few "best friend" nominations, children in the Aggressive-withdrawn group were targeted by peers for especially rough treatment on the playground.

Consistent with the rough treatment, peer nominations characterized the Aggressive-withdrawn children as a

rejected group "having few friends" and "being chosen last for group activities". However, in contrast to the lack of distinguishing characteristics in the observational study, the analysis of peer nominations revealed several highly salient characteristics of the Aggressive-withdrawn boys and girls which may explain their low standing among peers. Similar to Aggressive boys, the profile for Aggressive-withdrawn children included classroom disruption and inattentiveness. Most important, however, Aggressive-withdrawn children were also distinctly characterized as "acting like a baby" and "always messing around". Whereas Aggressive boys seek attention through "performances" involving showing off and acting the clown, Aggressive-withdrawn boys and girls attract attention through their immaturity, emotional lability, and disruption. Far from being unnoticed like the Withdrawn children, Aggressive-withdrawn boys and girls appear to be a nuisance within their peer group. Clearly, the Aggressive-withdrawn children exhibit a social behavioural profile which is distinct and in no way a combination of the profiles exhibited by the Aggressive group and the Withdrawn group.

Although quite speculative, the prominence of emotional lability in the Aggressive-withdrawn profile may account for another important characteristic of that particular risk classification. Specifically, Aggressive-withdrawn boys appear to be a more distinct risk group than their

counterparts among the girls. As reported above, Aggressive-withdrawn boys were distinct among the risk groups in terms of significantly lower likeability scores and fewer "best friend" nominations, while Aggressive-withdrawn girls shared this distinction with the Aggressive girls. This finding was partially explained by the suggestion that physical contact and aggression may be less compatible with girls' normative playground style and, therefore, may have a more compromising impact on the peer relations of Aggressive girls than Aggressive boys. However, differences in the distinctiveness of Aggressive-withdrawn boys and girls may also be related to socialized sex differences in the tolerance/acceptance of emotional lability. That is, emotional lability may have a more destructive impact on the peer relations of Aggressive-withdrawn boys than Aggressive-withdrawn girls. Girls may take less notice of a child who is easily brought to tears, whereas the same behaviour may cause quite a stir among boys.

Finally, although there was a degree of concordance between the social entry and PEI profiles for the Aggressive group and the Withdrawn group, a lack of concordance for the Aggressive-withdrawn children merits some attention. From the peers' and teachers' (Marchessault, 1985) perspective, Aggressive-withdrawn boys and girls represent highly deviant groups and are attributed a wide range of deficits covering

both major dimensions of deviant social behaviour (i.e. aggression and withdrawal). However, it must be noted that knowledgeable informants such as peers and teachers are witnesses of behaviour in many different settings, each of which involve unique demands on the child. Due to the nature of the Aggressive-withdrawn children's major deficits, "messing around" and "acting like a baby", their difficulties may be most pronounced within a structured environment or organized activity requiring cooperation, turn taking, and respect for limits. In the observational study, Aggressive-withdrawn children's deficits may have been left unexposed due to the limited demands placed on them in the relatively unstructured playground activity. While a "non deviant" social entry profile may seem inconsistent with the rough treatment accorded the Aggressive-withdrawn children, the discrepancy may be explained by the possibility that peers act toward Aggressive-withdrawn children as a function of the "global reputation" that they (Aggressive-withdrawn children) carry with them onto the playground.

Behaviours most detrimental to peer relations. On the basis of the present studies, several conclusions can be drawn regarding the behaviours likely to be most aversive for the peer group.

An aggressive and/or inappropriate social entry style, and playground aggression in general, has largely been

considered to compromise the quality of children's peer relations. However, the present study would suggest that aggression/inappropriateness is more likely to interfere with girls' peer relationships than boys', emphasizing the importance of considering same-sex normative or "background" behaviour when examining the characteristics of risk groups. Boys' highly physical playground style tends to mask the aversive behaviour of the Aggressive boys, while the aggression exhibited by the Aggressive girls tends to be highly inconsistent with the same-sex peer group. Consequently, Aggressive girls appear distinct relative to same-sex peers and join the Aggressive-withdrawn girls as significantly less likeable than Contrast girls. In short, girls may be less tolerant of a highly physical or aggressive play style than are boys.

It is important to note, however, that very little severe physical aggression was observed on the teacher-supervised playgrounds in the present study. Furthermore, the very low salience of the "mean and cruel" item in the profile of Aggressive boys and girls provides further evidence that much of the aggression observed on a supervised playground is likely playful or mild in nature. Perhaps even boys would be less tolerant of the more extreme or antisocial aggression that might be observed in a totally unsupervised play setting.

Several behaviours were identified from among the PEI items as highly characteristic of the low-liked Aggressive-withdrawn group and, in this respect, are interpreted as particularly detrimental to peer relations. Specifically, the broad range of behaviours subsumed under the items "Always mess around" and "Act like a baby" are believed to be the most compromising for a child within his or her peer group. These items seem to describe a child who has difficulty cooperating in group activities, following rules, and respecting limits. Such behaviours would often result in the disruption of the group's activity or interference with the group attaining their goal.

Finally, in the present study, it was important to distinguish the items "Always mess around" and "Play the clown", the latter of which was highly characteristic of the Aggressive children. Clowning around does not appear to be aversive to others and, within reasonable limits, may even serve to strengthen a child's peer relations or at least temper the impact of other aversive behaviours in an individual's social profile.

Relation between sociometrically and behaviourally defined risk groups. Several important assumptions concerning the relation between the classification system used by Coie and associates, and the system used in the present study, permitted the predictions stated in

conjunction with the study's hypotheses. The validity of these assumptions is addressed below.

The Aggressive-withdrawn group of the present study was initially assumed to correspond to the sociometrically identified Rejected group. This correspondence is believed to be valid following the results of the present study. The low scores on several measures of peer relations and the high salience of items reflecting rejection (e.g. "Chosen last for groups") are both consistent with the defining criteria for the Rejected group in previous studies. In addition, although the Aggressive-withdrawn children appeared "average" in terms of social entry behaviour (possibly due to the unstructured playground context), the peer nominations clearly identified a range of aversive behaviours that would correspond closely to the Rejected profiles noted in previous studies. Finally, the high rate of aggression directed toward the Aggressive-withdrawn children represents further evidence of peer rejection and is consistent with one of the most salient characteristics of the sociometrically identified Rejected group.

The Aggressive children of the present study were initially assumed to correspond to the sociometrically identified Controversial group. While there is evidence in the present results to partially support this assumption, the correspondence would appear to be more valid for the Aggressive boys than the Aggressive girls. Consistent with

observations of Controversial children, both the Aggressive boys and girls exhibited high rates of interaction, and aggressive and inappropriate behaviour. However, only the Aggressive boys also enjoyed high scores on the PEI likeability measure, consistent with the high popularity scores which are one of the defining criteria of the Controversial group. Aggressive girls were significantly lower than Contrast girls on the likeability and "best friend" measures, and were not different from the low-liked Aggressive-withdrawn girls in either respect. Thus, Aggressive girls may share some of the characteristics of the sociometrically classified Rejected children.

Recalling that Controversial children are high in both popularity and rejection, it is conceivable that the girls' normative play style will not fully support a Controversial classification. That is, the lower base rate for aggression in girls' playground behaviour may result in greater unanimity in the rejection of girls who are both aggressive and disruptive. In contrast, there are likely many boys who not only tolerate the aggression of certain peers, but may even be attracted to, or impressed by such behaviour.

The Withdrawn group of the present study was assumed to correspond to the sociometrically identified Neglected group. This assumption is believed to have been valid, despite an important discrepancy between the peer-nominated Withdrawn group and the sociometrically identified Neglected

group. Although Withdrawn children are similar to the Neglected children in terms of their low rates of interaction and aggression, the most important defining criterion of the Neglected children is their very low rate of nomination for both positive and negative sociometric items. At first glance, the Withdrawn children do not appear to meet this criterion in that they have been selected on the basis of extensive nominations on the withdrawal items of the PEI. However, the nature of the PEI nomination procedure and the instrument itself likely account for the discrepancy. Whereas the sociometric procedure involves nominations for extreme items (e.g. liked most, liked least), the PEI includes items that are less extreme and specific to the low profile child (e.g. "Those who aren't noticed much", "Those who never seem to want to play"). Furthermore, the fact that the PEI administration provides each child with a list of all peers improves the chances that he or she will identify the low profile child. Whereas the low profile or neglected child may not come to mind for the extreme items of the sociometric interview, the "low involvement" items of the PEI are tailor made to identify the isolated child.

Parker and Asher (1987), however, caution those attempting to draw comparisons among the two classification systems. Admittedly, the concordance between the groups, as described above, is not perfect and there are likely many

exceptions to the rule. Although the Aggressive-withdrawn group would appear to be most homogeneous suggesting that the correspondence with the Rejected group may be strong, the heterogeneity of the Aggressive group and the Withdrawn group on various measures of peer relations suggests that subgroups may exist within these classifications. For example, the peer-identified Aggressive group may include some children who are experiencing rejection due to very inappropriate, impulsive, or highly aggressive behaviour (see Coie et al., 1991). Similarly, the least liked Withdrawn children may also exhibit behavioural or emotional deficits that would demand professional attention, and may contribute to rejection by peers. In short, it is important to note that the profiles described above describe the "typical" child in each risk group. Subgroups within each PEI classification group may exist suggesting the need for further refinement in the risk classification process.

Several studies reported above have identified behavioural subtypes within the rejected profile. In a study of boys, French (1988) identified one rejected subgroup exhibiting high aggression, low self control, behaviour problems, and social withdrawal, and a second group exhibiting only social withdrawal in the absence of any other areas of deviance. In a similar study of girls, French (1990) identified a rejected group who were described as withdrawn, anxious, and low in academic functioning, in

contrast with a second group who were primarily low in self-control and higher in terms of peer-rated aggression, withdrawal, and overall problem behaviours. Examples of each of these subtypes of rejected child may be distributed across the three risk groups identified within the present study.

Similarly, Coie et al. (1991) and Bierman (1986) have differentiated Aggressive children who are rejected by peers from those who seem to have adequate peer relations. The peer-identified Aggressive children in the present study may be similarly heterogeneous with respect to peer status.

Implications for Remediation

Several recommendations concerning remediation/early intervention would appear to follow from the present results.

Above all, the Aggressive-withdrawn boys and girls appear to be at highest risk of continued difficulty in their peer relations and are perhaps most in need of some form of intervention. The Aggressive-withdrawn children are homogeneously low on the various measures of peer relations used in the study, and were rated as highly salient on several broad categories of behaviour which might be interpreted as related to their peer difficulties. Furthermore, the nature of the Aggressive-withdrawn children's deficits would suggest that they may have particular difficulty in group activities and in structured

settings. Thus, they might be predicted to have even greater difficulty as the academic environment becomes more structured in high school and, later, as the work environment places increased demands on their limited ability to cooperate and/or respect social convention. Clearly, previous longitudinal studies support the prediction that, denied some form of intervention, Aggressive-withdrawn children are at risk of a wide range of difficulties in adolescence and adulthood. By extension, the degree to which Aggressive-withdrawn children resemble the Rejected status group of previous studies would also support a recommendation of intervention on their behalf.

Finally, Milich and Landau (1984) have noted similarities between Aggressive-withdrawn children and a previously studied Hyperactive/Aggressive group (Loney & Milich, 1982), and the present study noted that Aggressive-withdrawn children exhibit many of the characteristics of children with an attention deficit. In this respect, intervention efforts directed toward peer-identified Aggressive-withdrawn children should include a thorough assessment for Attention Deficit Disorder and consideration for behaviour therapy and/or a medication trial.

Aggressive children, marked by a profile of behavioural excesses and perhaps inappropriate timing, are also believed to be at risk of later difficulties and in need of intervention. Aggressive girls' peer difficulties are

already apparent at the elementary grade level, perhaps due to the degree to which their behaviour is incompatible with the same-sex peer group. Aggressive girls are significantly lower than "average" peers on several measures of peer relations, and would be expected to continue to deteriorate in this respect to the degree that they fail to adjust to the increasingly socialized peer group. Although the Aggressive boys' social profile tends to be somewhat compatible with the highly physical peer group at the elementary grade level, an increasing incompatibility between their aggressive style and the increasingly less aggressive peer group would be expected to cause difficulties in adolescence and adulthood. Specifically, Aggressive boys may become less a part of the main stream peer group, and more a part of a delinquent/aggressive subgroup as they get older.

Again, as with the Aggressive-withdrawn group, longitudinal studies support the prediction that, denied early intervention, Aggressive girls and boys are at risk of serious later maladjustment and conflict with authority. Social skills training approaches to intervention for aggressive children have reported success in maintaining changes in targeted behaviours (Pepler, King, & Byrd, 1991).

Peer-identified Withdrawn children, as defined in the present study, are believed to be at lesser risk of later difficulties. Although less involved in playground

activity, the Withdrawn children do not exhibit a profile of aversive social behaviour and are not rated significantly lower than "average" peers on measures of likeability - the lower rates of nomination as best friend appear to be simply a function of the Withdrawn children's low playground involvement. Furthermore, an elevated rate of aggression directed toward Withdrawn boys is likely a function of the group's lack of assertiveness within a highly physical same-sex peer group, rather than victimization per se. As the peer group becomes more socialized, the relatively high rate of aggression in peers' initiations directed toward Withdrawn boys would be expected to decrease.

Nevertheless, as is common with internalizing difficulties, researchers must be careful not to ignore the risk status of peer-identified Withdrawn children altogether. Although many studies have reported relatively few long-term adjustment problems for Withdrawn children, a subgroup of Withdrawn children may remain at risk for more subtle difficulties. For example, several longitudinal studies have identified elevated rates of internalizing disorders (e.g. social phobias; Schwartzman & Moskowitz, 1991) for peer-identified Withdrawn children. Furthermore, as noted above, Caspi, Elder, and Bem (1988) have identified shy boys as at risk of lesser marital and occupational stability in adulthood. Perhaps the pattern of inhibition that is already evident in the social profile of

peer-identified Withdrawn children becomes more severe or pervasive for a subgroup of such children as they enter adulthood. Clearly, additional research is necessary in order to identify additional risk factors predicting a poor outcome from early social withdrawal.

Finally, support for early intervention on behalf of the children described above follows from the literature addressing the developmental stability of profiles of aggression and withdrawal. Although adults involved with such children often hope that the problem behaviour is simply a transient phase, there is some evidence that deviant social behaviour is sustained across time through the progressive accumulation of its consequences, producing what has been referred to as "cumulative continuity" (Caspi, Elder, & Bem, 1988).

Recommendations for Future Research

The results of the present study hold several important implications for future research into the behavioural correlates of children's risk groups.

First, the failure to identify distinct social entry behaviour for the Aggressive-withdrawn children points to the importance of carefully selecting both the mode and context for the assessment of risk groups. The nature of the deficits exhibited by certain groups may be more apparent under the unique demands of a particular context and, therefore, observations conducted within one context

(e.g. structured classroom) may be grossly inconsistent with observations conducted within another (e.g. unstructured playground). As an alternative to direct behavioural observation, knowledgeable informants clearly have the advantage of having witnessed the peer group across a range of situations and of having the unique ability to integrate and evaluate behaviours in context. While the validity of ratings or nominations by informants is often reported to be compromised by certain biases, the effects of such biases were believed to have been at least partially controlled in the present study through the use of: a) a salience ratio as the primary unit of analysis, b) a two-level approach to data interpretation, and c) the averaging of ratings by multiple informants. In short, the benefits and limitations associated with various assessment procedures must be carefully considered in the planning of future research. In fact, Newcomb et al. (in press) conducted an extensive meta-analysis of the sociometric literature and concluded that qualitative differences in the perspective of various assessment sources may have profound implications for the selection of methodologies.

Second, the differential quality of peer relations observed for Aggressive boys and girls would suggest the importance of considering sex differences in normative rates of behaviour when interpreting the behavioural profiles of risk groups. The present study indicated that the vast

majority of social interaction occurs between same-sex peers and that, in this respect, the elementary school playground is a highly segregated play environment. Consequently, the normative behaviour of the same-sex peer group must be considered one of the most important factors in attempting to interpret the peer difficulties of a group or individual child. Furthermore, the reported sex differences in the acceptance of Aggressive children will hopefully provide the impetus for further investigations involving both peer-rated Aggressive boys and girls, as the latter have been less frequently studied.

Third, as noted by Parker and Asher (1987), sociometric and behavioural assessment address independent questions and both are critical in any comprehensive analysis of children at risk. However, few studies to date have included both forms of assessment within the same research design. Future risk research must examine both sociometric and behavioural data in an effort to identify behavioural profiles for more homogeneous risk groups. Through a hybrid classification system, involving both behaviour and sociometric ratings, the identification of subgroups at particularly high risk for later difficulties would permit the development of more efficient programs of early intervention on their behalf. Bierman (1986) and Coie et al. (1991) have identified hybrid risk classifications (e.g. Aggressive-Rejected) and have

made an important contribution to the literature in this respect.

Finally, future studies might adopt research designs which permit the identification of the early precursive profiles associated with later patterns of disturbance in peer relations. For example, longitudinal studies identifying the preschool behavioural profiles of children who are later identified by peers as aggressive-rejected and withdrawn-rejected would make an important contribution to the understanding of the early development of deviant social behaviour and low peer status. Furthermore, definition of the precursive profiles would provide criteria for early identification of "at risk" children and targets for early intervention on their behalf.

It should be noted that the behaviours identified as causally related to status in recent studies (e.g. Coie & Kupersmidt, 1983; Dodge, 1983; Putallaz, 1983) may not be the same behaviours that were originally responsible for initiating difficulties in peer relations. For example, the social behaviours that maintain rejected status, and re-establish rejected status in the event of exposure to a new peer group (e.g. when a child enters a new school), have likely "evolved" from those which were initially implicated in the earliest peer difficulties (Coie, 1990). The correlates of "established" aggressive and withdrawn reputations identified in the present study, and those

identified as related to sociometric status in recent studies (see above), may provide the groundwork for future studies of the earliest precursors of difficulties in peer relations.

In conclusion, the multimethod approach to assessment followed in the present study has enabled a comprehensive description of risk groups defined on the basis of peer ratings of aggression and/or withdrawal. Children identified by peers as either Aggressive or Withdrawn exhibited behaviour profiles that reflected their global PEI factor scores, and the profiles were subsequently related to the children's concurrent degree of success in peer relations. The identification of the most salient social behaviours associated with the low-liked Aggressive-withdrawn group, previously undifferentiated from an "average" Contrast group, is believed to be one of the major contributions of the present study and potentially important in the development of intervention programs on behalf of children at risk in peer relations.

The success of the present study in identifying comprehensive behaviour profiles for the peer-identified groups would suggest that the risk criteria employed are valid and merit further attention. The richness of the behaviour profiles would suggest that the combined use of behavioural observation and item analysis is highly productive and that further elaboration of the present

procedures will likely make a significant contribution to both the Risk and Social Skills literatures. Consideration of the recommendations for further research, as reported above, should serve to improve the yield of future efforts to describe and contrast the social behaviour of children exhibiting difficulties with peers.

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Appendix A

Items of the Pupil Evaluation Inventory
(English and French Versions)

Pupil Evaluation Inventory

1. (Example question).

Aggression Items

3. Those who can't sit still.
4. Those who try to get other people into trouble.
7. Those who act stuck-up and think they are better than everyone else.
8. Those who play the clown and get others to laugh.
9. Those who start a fight over nothing.
12. Those who tell other children what to do.
15. Those who always mess around and get into trouble.
16. Those who make fun of people.
18. Those who do strange things.
20. Those who bother people when they're trying to work.
21. Those who get mad when they don't get their way.
22. Those who don't pay attention to the teacher.
23. Those who are rude to the teacher.
26. Those who act like a baby.
27. Those who are mean and cruel to other children.
29. Those who give dirty looks.
30. Those who want to show off in front of the class.
31. Those who say they can beat everybody up.
33. Those who exaggerate and make up stories.
34. Those who complain nothing seems to make them happy.

Withdrawal Items

5. Those who are too shy to make friends easily.

6. Those whose feelings are too easily hurt.

10. Those who never seem to be having a good time.

11. Those who are upset when called on to answer questions in class.

13. Those who are usually chosen last to join in group activities.

17. Those who have very few friends.

24. Those who are unhappy or sad.

28. Those who often don't want to play.

32. Those who aren't noticed much.

Likeability Items

2. Those who help others.

14. Those who are liked by everyone.

19. Those who are your best friends.

25. Those who are especially nice.

35. Those who always seem to understand things.

Note. Items are organized according to the factor on which they appear. The item number refers to the position of the item on the actual questionnaire administered to the students. Item 1 was only a practice item (i.e. "Those who are the biggest") and does not appear on any of the factors.

Pupil Evaluation Inventory
(French Translation of Items)

1. Ceux qui agissent plus jeunes que leur âge.

2. Ceux qui aident les autres.

3. Ceux qui ne sont pas capables de rester assis tranquilles.

4. Ceux qui essaient de mettre les autres dans le trouble.

5. Ceux qui sont trop timides pour se faire des amis facilement.

6. Ceux qui se sentent trop facilement blessés.

7. Ceux qui prennent des airs supérieurs et qui pensent qu'ils valent mieux que tout le monde.

8. Ceux qui font les clowns et font rire les autres.

9. Ceux qui commencent la chicane à propos de rien.

10. Ceux qui ne semblent jamais s'amuser.

11. Ceux qui sont bouleversés quand ils ont à répondre aux questions en classe.

12. Ceux qui disent aux autres enfants quoi faire.

13. Ceux qui sont d'habitude les derniers choisis pour participer à des activités de groupe.

14. Ceux que tout le monde aime.

15. Ceux qui s'empêtrent tout le temps et se mettent en difficultés.

16. Ceux qui rient des gens.

17. Ceux qui ont très peu d'amis.

18. Ceux qui font des choses bizarres.

19. Ceux qui sont vos meilleurs amis.

20. Ceux qui ennuient les gens qui essaient de travailler.

21. Ceux qui se mettent en colère quant ça ne marche pas comme ils veulent.

22. Ceux qui ne portent pas attention au professeur.

23. Ceux qui sont impolis avec le professeur.

24. Ceux qui sont malheureux ou tristes.

25. Ceux qui sont particulièrement gentils.

26. Ceux qui se comportent comme des bébés.

27. Ceux qui sont méchants et cruels avec les autres enfants.

28. Ceux qui souvent ne veulent pas jouer.

29. Ceux qui vous regardent de travers.

30. Ceux qui veulent faire les fins devant la classe.

31. Ceux qui disent qu'ils peuvent battre tout le monde.

32. Ceux que l'on ne remarque beaucoup.

33. Ceux qui exagèrent et racontent des histoires.

34. Ceux qui se plaignent toujours et qui ne sont jamais contents.

35. Ceux qui semblent toujours comprendre ce qui se passe.

Appendix B

Tables Relevant to Method for Observation of Social Initiations (Study 1)

Table B-1

Distribution of Subjects for Observational Sample (Study 1)

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	Total
Males	16	15	14	16	61
Females	13	12	14	17	56
Total	29	27	28	33	117

Table B-2

Mean PEI Aggression and Withdrawal Z-scores (and Standard Deviations) by Classification Group and Sex for the Observational Sample

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Boys					
Aggr. z-score	$+1.75_a$ (0.36)	-0.84_d (0.50)	$+1.27_b$ (0.53)	-0.30_c (0.33)	123.85 ***
With. z-score	-0.11_c (0.44)	$+2.16_a$ (0.55)	$+1.42_b$ (0.65)	-0.27_c (0.27)	89.93 ***
Girls					
Aggr. z-score	$+2.18_a$ (0.48)	-0.51_b (0.60)	$+1.80_a$ (0.62)	-0.21_b (0.29)	103.07 ***
With. z-score	-0.25_b (0.51)	$+1.78_a$ (0.52)	$+1.76_a$ (0.51)	-0.14_b (0.35)	80.95 ***

Note. Mean z-scores within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table B-3

Mean Number (and Standard Deviations) of Target and Peer Initiations Coded

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Boys					
Target Init.	15.93_{a} (5.56)	10.00_{b} (6.57)	14.36_{ab} (7.27)	15.19_{a} (7.60)	2.35 *
Peer Init.	13.13 (6.40)	9.71 (5.36)	12.07 (3.38)	12.44 (7.28)	0.93
Girls					
Target Init.	11.62 (7.05)	7.33 (5.57)	11.86 (6.47)	10.82 (4.90)	1.52
Peer Init.	10.23 (5.12)	8.45 (5.91)	10.21 (5.04)	10.82 (4.98)	0.48

Note. Means across the four groups that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Appendix C

Documentation and Filming Procedure for Observational Study (Study 1)

DOCUMENTATION
HIGH RISK OBSERVATIONAL STUDY

Photo Session & Children Identification System

1. Lists of students from the peer nomination test administration were used. On each list, children's names were divided in two groups: males and females. Each male group ranked from 01 to n (n = total number of boys in one class) and each female group ranked from n+1 to N (N = total number of students for that same class). Children's numbers were assigned in an alphabetical order.

2. Photo Session: Olympus OM.10, 35 mm camera, 6 x 36 exposure film and flash. After consulting with school authorities, an appropriate time was determined to do the photo session. The experimenter introduced herself asking the children if they would agree to have their picture taken in small groups to complete our study on the peer nomination test they had so successfully filled out.

*none of the children refused to participate

*many children asked if they could see the pictures when they would be available - experimenter suggested that at the end of the school term, the pictures may be on display and that this would be discussed with school authorities and professors in charge of the project.

The children were called following peer nomination ranking order forming small groups of 2, 3 or 4; boys and girls separately and their pictures were taken in that order.

The children were then asked to get their outdoors winter clothes and photographs were taken in the same order as above.

3. Classification system

Each film was numbered and its contents identified on a separate sheet. Pictures were then inserted in 8 1/2 x 11 transparent sheets.

A list of all children selected for the observational study was developed and those children were identified on the photographs with a brown self-adhesive dot label containing each child's number from the Peer Nomination Test.

*the teacher of each class was asked to verify accuracy of the identification.

A random selection of observation list was produced and the first six children selected for observation were identified with a yellow self-adhesive dot label placed below their brown label. The yellow labels were marked 1 to 6 following the order of observation proposed by the observation list.

Scheduling

Filmers' schedule was determined by the school calendar recess times and weather forecast. In school 1, morning recesses were favoured for their longer duration (15 minutes). In the second school filming was carried out during both morning and afternoon 15-minute recesses providing the weather was favourable.

Equipment and Filming Procedure

Prior to filming, the filming crews studied the target children's photographs and visited the school on several occasions to assess which location would offer the best perspective on the playground.

Filmers collected information from school teachers and the school principal concerning the favourite play area for each grade level. A diagram of the playground was developed including dodge ball squares and hopscotch markings. The preferred area of play was noted for each grade level and class. Filmers also obtained a calendar of activities and holidays from the school to establish a filming schedule.

Filming

Equipment:

- Two SLO 340 Beta pack portable videotape recorders from Sony
- Two HVC 2200 colour video cameras from Sony
- L500 Sony videotapes
- Two 7 x 50 Bell & Howell Binoculars
- Two Multiple event stopwatches
- Pictures of the target children

Procedure: The filming crew arrived at the school a few minutes before recess to set up their equipment in a room situated on the second storey of the school and overlooking the entire playground. A random list of target children to observe for the day was developed and filmers studied these children's outdoors clothing as well as finding their favourite area of play in the schoolyard.

Each filming crew consisted of a spotter and a filmer - the spotter's responsibility was to find a target child on the playground with the help of binoculars, describe that child to

the filmer, and time the filming segment for 2 minutes and 15 seconds once the filming started. As soon as filming started, the spotter would try to locate another target child for the filmer before the end of the first segment.

The filmer's responsibility consisted of filming the target child and reporting the disappearance of that child or the introduction of another target child in the field of vision if it occurred.

Filming was interrupted at the ring of bell indicating the end of recess.

The filming crew then returned to the center to log their filming and prepare a list of target children to film for the next observation session.

Appendix D

Observational Code for Study 1

Observational Code for Social Initiations

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This code is designed to evaluate the social initiations of the target children and their peers along the dimensions described below.

Context Pass: The videotape segment to be scored should be reviewed by the coder in order to become familiar with the playground context. This viewing of the segment should be used to get an idea of what is happening on the playground while the interactions to be coded are taking place. This pass might also be useful for identifying the target child as well as the segments to be coded. Finally, the coder should be evaluating the overall social competence of the target child in preparation for the subsequent "Global Rating".

A) Global Rating - A global rating of the target child's overall social competence should be based on the coder's subjective impression upon viewing the entire video segment. The rating should be made on a three-point scale whereby a rating of 1 indicates a low level of competence, 2, an average level of competence and 3, a high level of competence.

Coding Pass: During the second pass of the videotape, each of the following variables should be scored with respect to each interaction to be coded.

B) Coding of initiations involving the target child.

0) **Context** - The nature of the activity within which the interaction occurs is to be scored as either "structured" or "unstructured". A "structured" activity, for the purposes of this code, is defined as one that involves rules and/or turn-taking. The coding of "structured" should take precedence over "unstructured". That is, if one of the children in the interaction is involved in a structured activity and the other in an unstructured activity, then "structured" should be scored. This judgement should not be based on the children's level of involvement in the playground activity. Rather, it should be thought of as a reflection of that which is happening around the child. In this respect, one or more of the children involved in the interaction might be passively involved in a group game, however, structured activity would still be scored.

"01" - Unstructured "02" - Structured

1) **Sex** - What is sex of peer(s) involved in the interaction with the target child. This is coded as:

"11" -same sex "12" - opposite sex "13" - both sexes

2) **Appropriateness** of initiation - Was the initiation appropriate given the playground norms for the context within which the interaction takes place? Appropriateness should be rated in terms of the degree to which the behaviour violates those norms. The intensity of the behaviour should also be considered in terms of the degree that it is appropriate for the context. Context, in this case, refers to the surrounding environment for the children involved in the interaction. This rating is to be made on a 3-point scale as follows:

"21" - Appropriate

"22" - Marginally appropriate (or ambiguous)

"23" - Not appropriate

Notes:

i) An aggressive act should usually be scored as inappropriate if a verbal communication might provide the same results.

ii) Conversation might be considered appropriate within a dodgeball game since the game does not involve all children at once, nor does the behaviour interrupt the game. However, hanging onto another child's clothing would be considered inappropriate since it interferes with another child's participation.

iii) An aggressive-type initiation that is not preceded by rough and tumble play should never be coded as appropriate. It should be coded as ambiguous or inappropriate depending on the intensity and angle of approach.

iv) The consequences or effectiveness of an initiation should not enter into the evaluation of appropriateness.

v) Within a structured activity, any aggression or teasing that significantly interferes with the game should be coded as marginally appropriate or inappropriate.

3) **Aggressiveness** of the initiation.

This category is rated on a four point scale according to the coders impressions of the degree of aggressive intent and the intensity or severity of the initiation.

"31" - Mild or Playful

Examples

playful, rough and tumble
yelling directed at other child
teasing
bossiness

"32" - Moderate

Examples

possible aggressive intent
might include attempts to be nasty
very animated yelling directed at other child

"33" - Severe

Examples

probable aggressive intent
an attempt to injure

"34" - Non-aggressive initiation (no subcategories)

Examples

Conversation
Nonaggressive physical contact

Note - The scoring of aggression should take precedence over nonaggression. That is, if there are problems deciding whether or not an interaction was aggressive in nature, then it should be coded as aggressive. Furthermore, if an interaction contains both an aggressive and nonaggressive component, then aggression should be scored. Furthermore, a more serious category of aggression should take precedence when in doubt.

4) Nature of the response to the initiation.

"41" - No Response

Examples

Ignored, not perceived

Note - If child acknowledges but does not actively respond to an initiation, it should be coded as "no response".

"42" - Attempted to avoid

Examples

walks or runs away
puts hands over ears
puts hands out to stop an aggressive act from other child (no further reaction)
turned away

"43" through "47" - Responded to the initiation - Coded as follows:

If response is same kind of activity as initiation - code intensity of response relative to the initiation:

"43" - Higher intensity
"44" - Lower intensity
"45" - Same intensity

If response is different kind of activity than the initiation - code the response on a sociability dimension as either Positive or Negative:

"46" - Negative or antisocial
"47" - Positive or social

Notes:

i) Listening and talking should be considered same type of activity.

ii) The exchange of an item should be considered the same type of activity for both children.

iii) If both initiation and response are affiliative type behaviours, the response should be coded as "same kind". Furthermore, when both initiation and response are any type of aggressive physical contact, the response should be coded as "same kind".

iv) Responses that differ from the initiation on the Physical vs Non-physical dimension should be coded as "same kind behaviour" if complementary, and "different kind behaviour" if not complementary.

v) Responses that differ from the initiation on the Aggressive vs Non-aggressive dimension should always be coded as different behaviour.

vi) If a response includes a "same" and "different" component, then the different component should be coded.

5) Does the initiation **interrupt** the ongoing activity?

Rated on a 4-point scale as follows:

"51" - No interruption

"52" - interrupts activity only for the children involved.

"53" - interrupts activity for more than just the children involved in the interaction.

"54" - not applicable (no activity involved)

6) Did **eye contact** during the interaction seem appropriate?

"61" - No

"62" - Yes

7) Was the **approach**, orientation, or position of initiating child from the front or rear of the other child(ren) involved?

"71" - Rear

"72" - Front or Side

8) **Leadership** or organizational behaviour?

This question will be coded as a five digit entry. The first digit will always be "8" and will identify the question number. The second through fifth digits will correspond to the next four questions each providing further elaboration. The total interaction should be evaluated in coding this category.

Is there a leadership or organizational quality in the target child's behaviour?

Second digit: "0" - No "1" - Yes

Is the behaviour effective in engaging one or more children?

Third digit: "0" - No or not applicable
"1" - One other child "2" - More than one other

Is there structure and/or rules involved?

Fourth digit: "0" - No or not applicable "1" - Yes

Is the involvement of the other child(ren) maintained?

Fifth digit: "0" - No or not applicable "1" - Yes

Notes:

i) Do not include a simple direction or command as leadership or organizational behaviour (e.g. "come here", "sit", "give me the ball").

ii) Do not include aggressive type initiation as an attempt to organize rough and tumble play.

iii) Passing the ball off to a team-mate may be considered organizational/leadership.

9) Was there a change in the nature or intensity of the interaction following the initial exchange?

This rating should be based on the most salient form of interaction between target and peer that immediately follows the interaction to be coded. The interaction should be considered terminated when the target child is not involved in any interaction for a period of five seconds or more. This rating should be made on a 6-point scale as follows:

"91" - interaction became more aggressive

"92" - interaction became more intense

"93" - interaction remained the same

"94" - interaction became less aggressive

"95" - interaction became less intense

"96" - does not apply - interaction did not continue

Note - Use the intensity codes (i.e. "92" or "95") only when no aggression is involved in the initiation, response, or all subsequent interaction.

Appendix E

Brief Rationale for Categories Appearing in Observational Code

Rationale for Code Categories

1) Context - The nature of the activity within which the initiation-response sequence (interaction) occurs is coded as structured or unstructured. Many researchers have found that socially unskilled children often have difficulty interpreting the nature of the ongoing social situation and consequently behave inappropriately for that context, which in turn may elicit negative peer responses. For example, jumping on a peer's back is perhaps inappropriate within the structured context of dodgeball, but quite appropriate during a less structured "rough and tumble" session.

2) Sex - The sex of the peer(s) involved in the interaction with the target child is coded.

3) Appropriateness of the initiation - The initiation is rated as either inappropriate, marginally appropriate, or appropriate based on the playground norms for the context within which the interaction takes place. Putallaz (1983) has suggested a "relevance" dimension whereby children who are successful in gaining entry into an ongoing interaction, and who later achieve high status in the peer group, seem to have the ability to "read" the social situation, and adapt their behaviour to the ongoing flow of interaction.

4) Nature of the Initiation - The nature of the initiation is rated as non-aggressive or, alternatively, as mild/playful aggression, moderate aggression, or severe aggression. Marshall and McCandless (1957) found that associative, cooperative play was positively related to peer acceptance. Hartup, Glazer, and Charlesworth (1967) observed a relationship between antisocial behaviour and rejection. Dodge (1983) found that rejected children were those who engaged in a great deal of aggressive and inappropriate behaviour. Thus, it is believed that this category, taken along with the appropriateness dimension, may serve to differentiate children experiencing difficulties in peer relations.

5) Nature of the Response - The nature of the response to the initiation is coded as either; ignored, avoided, responded to with same kind of behaviour (same, lesser, or greater intensity), or responded to with different kind of behaviour (positive or negative). In a Child Development symposium on Social Competence and Peer Status in 1983, Asher (1983) suggested that a dimension of competence common to each of the papers in the symposium was best termed "responsiveness". That is, children who are especially effective with peers are those who not only initiate effectively but also respond positively to peers' initiations. Dodge (1983) found that the social approaches of unpopular children typically led to short

interactions that were often met with rebuff by peers. Research by Coie and Kupersmidt (1983) suggests that neglected children are most likely to respond by withdrawing from aversive behaviour whereas rejected children often react aggressively. Thus, it seems important to evaluate both the peers' responses to children in the high-risk groups as well as the target children's reactions to peers. Both appear to be important measures of competence directly related to peer status.

6) Interruption of the ongoing activity - Does the initiation interrupt the ongoing activity? This category is clearly related to the previous category of appropriateness and consequently shares much of its rationale. Asher (1983) suggests that socially competent children have a "process view" of life and appreciate that things take time and that the more effective way to attain a goal is not necessarily to go directly for it. Dodge (1983) has found that unpopular children are those who engage in inappropriate play behaviour disrupting the ongoing activities.

7) Eye contact - Is the eye contact between the children appropriate for the situation? This category was included as an important skill for both conversation and competent peer interaction in general.

8) Orientation or position - The orientation or position of the child during the approach and/or initiation is coded as either from behind or side/front. This category is meant to reflect a potentially "sneaky" or "surprising" quality to the initiation, which may be perceived as a signal by peers to incite aggression.

9) Leadership or organizational behaviour - The target child's initiation is coded for an organizational or leadership quality. This is believed to be a higher level behaviour which may be particularly indicative of competence in peer interaction. The child's success in eliciting peer participation is also coded and may be a further indicator of peer status. Dodge (1983) has found that rejected cnildren are viewed as poor leaders by their peers.

10) Change in the interaction - Finally, the nature of the interaction following the initiation is coded as having become either more aggressive/intense, less aggressive/intense, or remained the same. Asher (1983) has suggested that some children may be effective in initiating interaction but poor at maintaining the interaction or resolving interpersonal conflict. This category is essential since the previous categories basically only refer to the entry behaviour and ignore all that occurs after the initial exchange (i.e. initiation - response sequence).

In addition, the duration of interactions between target and peers is coded as well as the total number of target peer initiated interactions across a 2 minute segment of videotape. Although rate of interaction alone is not believed to be a good measure of competence (Asher, Markell, & Hymel, 1981; Gottman, 1977), the duration of an interaction is generally acknowledged to be an important measure of success in maintaining a relationship and, consequently, social competence. Frequency of interaction, however, may prove to be important in qualifying some of the results derived from the previously described categories. For example, Dodge (1983) has observed that rejected children are actually high in rate of interaction, but that much of that interaction is of a negative or aversive quality.

Finally, the coders make a global rating of the target child's general level of social competence based on the entire segment.

Appendix F

Preparation of Videotapes for Coding

Preparation of Videotapes
(Beeping procedure)

The following is a summary of the procedure for identifying the initiation-response sequences to be later scored according to the observational coding system. A maximum of 2 target and 2 peer initiations should be identified for each target segment in the School 2 sample. A maximum of 9 target and 9 peer initiations should be identified for each target segment in the School 1 sample.

Equipment:

microphone
master log of all segments (brown or blue book)
blank coding sheets
videotape to be prepared
VCR (SLO-323 or Superbeta - depending on which step)
Colour Television

Phase 1

1) Load cassette into the SLO-323 VCR and rewind completely. Reset the tape counter. Advance tape to the first subject on the videotape. Refer to master log for starting footage on the videotape and the identification information.

2) Plug microphone into the channel 2 jack and turn the recording volume for channel 2 to approximately 8.

3) Begin the cassette and identify the target child among the other children on the playground. If there is any difficulty in identifying the child, refer to the master log for additional identification information or find the child's picture in the master photo album. The description of the child on the audio track (track 1) will usually be sufficient to determine the identity of the target child.

4) Once the child has been identified, rewind the cassette to the start of the segment and begin scanning the segment for initiation attempts between the target child and his/her peers. Once an initiation has been identified, carefully identify the response. An "initiation", for the purposes of the project, is defined as a **voluntary** and **intentional** attempt to initiate interaction with another child, regardless of the intensity of that attempt, when no previous form of interaction existed with the other child in the previous 5 seconds. The response should be considered as the first reaction to the initiation. Do not include any continuing interaction as a part of the response.

5) When the initiation-response sequence has been precisely

identified, using the dubbing capability of the VCR place a "beep" immediately before the beginning of the initiation and another "beep" immediately after the first reaction to the initiation (response). Rewind the tape and review the placement of the "beeps" to ensure that they accurately define the initiation-response sequence.

6) Record all information pertaining to the initiation-response on the coding sheet. This includes the subject number, sex of subject, total segment length, initiation number (i.e. target or peer initiation; 1st or 2nd initiation), and surrounding activity.

7) Continue to scan the videotape for the next initiation involving the target child. Once the initiation and response have been identified, proceed as in points #5 and #6.

8) Continue this procedure until the limit of 2 target initiations and 2 peer initiations has been reached (or a limit of 9 for School 1 tapes) or the end of the segment for the child. If one of the limits is reached before the end of the segment, then continue to count the number of initiations of that type but do not "beep" or record them on the coding sheet. When the preparation of the segment has been completed, the total number of target initiations and peer initiations should be entered in the appropriate place on the coding sheet.

9) If a segment has no target or peer initiations, the information pertaining to the segment in general should be entered on the "no interaction" sheet. This information will include the subject number, sex, length of segment, starting footage of segment, and the surrounding activity.

Note - A second initiation between the same children can be coded if the first interaction has been terminated for at least 5 seconds. That is, if child A initiates toward child B, the resulting interaction between A and B must have been terminated for at least 5 seconds in order for another initiation between A and B to be coded. Interactions that terminate for less than 5 seconds and then resume, involving the same children, should be considered as a continuation of the previous interaction.

Multiple Targets on the Same Segment

If two children have been identified as targets on the same segment, the segment should be prepared as if they were two different segments. That is, initiations for target 1 should be identified first and then initiations for target 2. Obviously some confusion will exist in determining whether the "beeps" pertain to target 1 or 2. Therefore, when preparing a

segment with multiple targets, the numbers 1, 2, 3, etc. should be used in place of the "beeps". Similarly, if two initiations overlap for the same target child, the same method of differentiating the two must be used.

Phase 2

1) Once an entire cassette tape has been "beeped", the tape should be rewound and then inserted in the Superbeta VCR for the final procedure in the preparation of the tapes. The difference between the two VCRs is simply that the footage indicator on the SLO-323 is measured in terms of "Feet" while the Superbeta is in terms of "Seconds".

2) Run the tape until you come to the beginning of the first subject that had been recorded on the coding sheet. Once the subject's segment appears on the screen, take note of the "time" (i.e. elapsed time on the VCR) and insert that information above the subject number on the coding sheet.

3)Continue scanning the tape until you come to the first set of "beeps". Note the "time" of the first "beep" of the pair and enter this on the coding sheet on the appropriate line.

4)Continue observing the interaction that was delineated by that pair of "beeps" and make a judgement as to when it is terminated. At the precise moment that it is terminated, stop the videotape and take note of the "time" on the VCR. Determine the total length of the interaction (not just the amount of time between the two "beeps") by subtracting the time of the first beep from the time that has been noted as the end of the interaction.

5) Continue throughout the entire cassette in this manner. Verify, as you go along, whether or not the information that has been recorded on the coding sheet is correct. Any "beeping" mistakes that are noted should be corrected by switching back to the SLO-323 VCR for redubbing.

Note - Be sure to mark your name at the top of each new coding sheet and number the coding sheets consecutively. There should be two or three coding sheets for each cassette tape. Begin renumbering the pages from "1" for each new video cassette.

Appendix G

Tables Relevant to Results for Observation of Social Initiations (Study 1)

Table G-1

Mean PEI Likeability Z-scores (and Standard Deviations) and Corresponding Percentiles by Classification Group and Sex for the Observational sample

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Boys	-0.09_a (0.65)	-0.25_a (0.74)	-1.09_b (0.39)	$+0.15_a$ (1.16)	6.62 ***
percentile	46	40	14	56	
Girls	-0.44_b (0.50)	-0.32_{ab} (0.89)	-0.61_b (0.82)	$+0.26_a$ (1.10)	2.92 ***
percentile	33	37	27	60	

Note. Mean z-scores within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-2

Mean Proportion (and Standard Deviations) of Peers Nominating Children in Classification Groups as Best Friend

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Boys	0.15_{ab} (.10)	0.10_{bc} (.10)	0.03_{c} (.04)	0.18_{a} (.12)	6.63 ***
Girls	0.10_{b} (.07)	0.11_{b} (.10)	0.05_{b} (.06)	0.23_{a} (.17)	7.55 ***

Note. Mean proportions within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-3

Mean Global Ratings (and Standard Deviations) by Classification Group and Sex

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Boys	1.54_{b} (.25)	1.63_{b} (.34)	1.87_{a} (.24)	1.69_{ab} (.33)	3.19 **
Girls	1.78 (.25)	1.87 (.20)	1.87 (.25)	1.96 (.14)	1.64

Note. Mean global ratings within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-4

Mean Frequency (and Standard Deviations) of Target and Peer Initiated Social Entry Attempts (Target Initiations and Peer Initiations) Per Minute

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Boys					
Target Init.	1.19_{a} (.46)	0.65_{b} (.41)	0.96_{ab} (.49)	1.07_{a} (.35)	4.42 ***
Peer Init.	0.76_{a} (.33)	0.42_{b} (.36)	0.70_{a} (.35)	0.66_{ab} (.38)	2.63 *
Girls					
Target Init.	0.90_{a} (.54)	0.47_{b} (.31)	0.77_{a} (.33)	0.75_{a} (.25)	2.97 **
Peer Init.	0.63 (.29)	0.35 (.42)	0.48 (.27)	0.51 (.29)	1.71

Note. Mean frequencies within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-5

Mean Duration in Seconds (and Standard Deviations) of Social Interactions Following Target Initiated and Peer Initiated Social Entry Attempts

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	*F* ratio
Boys					
Target Init.	11.16 (7.89)	9.58 (8.65)	10.97 (8.47)	8.30 (6.30)	0.45
Peer Init.	10.71 (4.88)	9.26 (6.63)	12.66 (13.44)	8.84 (4.78)	0.67
Girls					
Target Init.	14.59 (14.30)	16.93 (19.86)	11.17 (4.93)	18.47 (28.93)	0.38
Peer Init.	13.63 (12.05)	11.56 (5.90)	11.82 (5.80)	13.09 (10.10)	0.16

Note. Mean durations within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-6

Subjects Retained and Excluded for Analyses Involving Target- and Peer-Initiated Social Interactions

	PEI Classification Group			
	Aggr.	With.	AgWi.	Cont.
Target Initiations				
Boys				
Retained	16	14	13	16
Dropped	0	1	1	0
Girls				
Retained	12	10	14	17
Dropped	1	2	0	0
Peer Initiations				
Boys				
Retained	16	12	14	14
Dropped	0	3	0	2
Girls				
Retained	12	9	14	17
Dropped	1	3	0	0

Table G-7

Code Options Included in Analyses of Social Initiations

Category	Option Analyzed
Context:	"Structured"
Sex:	"Opposite sex"
Appropriateness:	"Inappropriate".
Aggressiveness of the initiation:	"Aggressive"
Interruption of the ongoing activity:	"Interrupts activity"
Appropriateness of eye contact:	"Inappropriate"
Approach or orientation of the initiating child:	"Approach from behind"
Nature of the response to the initiation:	"Avoidance/ignore" "Complementary" "Different kind (positive)" "Different kind (negative)"
Intensity of the subsequent interaction:	"Intensity increases" "Intensity decreases"

Table G-8

Interrater Reliability for Observational Code Categories

	Coefficient Kappa		
	Target Inits	Peer Inits	T & P Combined
Degree of structure:	.64	.57	.61
Sex of peer:	1.00	.83	.93
Appropriateness of initiation:	.87	.78	.84
Aggressiveness of the initiation:	.87	.92	.89
Nature of the peer response:	.88	.80	.84
Initiation interrupts activity:	.72	.56	.65
Eye contact in initiation:	.78	.69	.74
Approach or orientation:	.76	.77	.77
Continuation of the interaction:	.84	.77	.81

Table G-9

Mean Proportions (and Standard Deviations) by Classification Group for Selected Entry Characteristics: Social Initiations by Target Boys

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Context for the initiation					
Structured Play	.66 (.29)	.49 (.31)	.55 (.33)	.63 (.33)	0.75
Opposite sex	.18 (.12)	.19 (.21)	.14 (.13)	.12 (.10)	0.43
Nature of the target initiation					
Inappropriate	$.50_{a}$ (.19)	$.32_{b}$ (.32)	$.29_{b}$ (.15)	$.39_{ab}$ (.21)	2.26 *
Aggressive	.43 (.18)	.39 (.29)	.30 (.19)	.32 (.16)	1.11
Interrupts activity	$.32_{a}$ (.15)	$.18_{b}$ (.15)	$.17_{b}$ (.13)	$.25_{ab}$ (.15)	3.14 **
Inappropriate eye contact	.26 (.12)	.31 (.24)	.22 (.13)	.26 (.14)	0.22
Approach from behind	.23 (.10)	.25 (.15)	.17 (.11)	.22 (.12)	0.97

Note. Mean proportions within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-9 (continued)

Mean Proportions (and Standard Deviations) by Classification Group for Selected Entry Characteristics: Social Initiations by Target Boys

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Nature of the peer response					
Complementary	.54 (.13)	.65 (.20)	.60 (.12)	.58 (.16)	1.73
Different kind (Positive)	$.11_{a}$ (.07)	$.04_{b}$ (.06)	$.08_{ab}$ (.07)	$.08_{ab}$ (.09)	2.98 **
Avoid/ignore	.29 (.11)	.29 (.16)	.27 (.13)	.31 (.18)	0.21
Different kind (Antisocial)	.05 (.06)	.02 (.05)	.05 (.05)	.03 (.04)	2.03
Intensity of the subsequent interaction					
Intensity Increases	.08 (.07)	.08 (.11)	.08 (.07)	.03 (.05)	1.73
Intensity Decrease	.08 (.06)	.06 (.10)	.04 (.06)	.05 (.06)	1.45

Note. Mean proportions within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-10

Mean Proportions (and Standard Deviations) by Classification Group for Selected Entry Characteristics: Social Initiations by Peers Directed Toward Target Boys

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Context for the initiation					
Structured Play	.57 (.27)	.43 (.20)	.52 (.34)	.60 (.26)	0.81
Opposite sex	.10 (.10)	.15 (.17)	.12 (.18)	.11 (.14)	0.13
Nature of the peer initiation					
Inappropriate	.32 (.16)	.40 (.21)	.38 (.17)	.30 (.12)	1.09
Aggressive	$.30_{b}$ (.14)	$.43_{ab}$ (.24)	$.45_{a}$ (.22)	$.30_{b}$ (.13)	2.73 *
Interrupts activity	.25 (.07)	.18 (.11)	.22 (.12)	.27 (.12)	1.89
Inappropriate eye contact	.20 (.16)	.16 (.09)	.25 (.09)	.24 (.09)	2.06
Approach from behind	.18 (.15)	.15 (.15)	.27 (.16)	.20 (.12)	1.89

Note. Mean proportions within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-10 (continued)

Mean Proportions (and Standard Deviations) by Classification Group for Selected Entry Characteristics: Social Initiations by Peers Directed Toward Target Boys

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Nature of the target response to peer initiation					
Complementary	$.64_{a}$ (.19)	$.57_{ab}$ (.16)	$.48_{b}$ (.13)	$.59_{ab}$ (.13)	2.76 *
Different kind (Positive)	.09 (.09)	.10 (.10)	.13 (.12)	.08 (.08)	0.66
Avoid/ignore	$.22_{b}$ (.16)	$.32_{a}$ (.18)	$.35_{a}$ (.16)	$.27_{ab}$ (.11)	2.84 **
Different kind (Antisocial)	$.05_{a}$ (.06)	$.01_{b}$ (.02)	$.03_{ab}$ (.05)	$.05_{ab}$ (.08)	2.21 *
Intensity of the subsequent interaction					
Intensity Increases	.09 (.10)	.06 (.07)	.10 (.08)	.10 (.12)	0.59
Intensity Decreases	.06 (.09)	.11 (.16)	.09 (.08)	.08 (.07)	0.59

Note. Mean proportions within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-11

Mean Proportions (and Standard Deviations) by Classification Group for Selected Entry Characteristics: Social Initiations by Target Girls

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Context for the initiation					
Structured Play	.67 (.21)	.64 (.31)	.57 (.31)	.69 (.26)	0.51
Opposite sex	$.38_{a}$ (.16)	$.26_{ab}$ (.25)	$.22_{b}$ (.25)	$.17_{b}$ (.21)	2.59 *
Nature of the target initiation					
Inappropriate	$.43_{a}$ (.19)	$.23_{b}$ (.16)	$.26_{b}$ (.22)	$.21_{b}$ (.19)	3.31 **
Aggressive	$.38_{a}$ (.21)	$.16_{b}$ (.13)	$.20_{b}$ (.21)	$.13_{b}$ (.13)	4.64 ***
Interrupts activity	.20 (.18)	.18 (.16)	.22 (.13)	.20 (.16)	0.15
Inappropriate eye contact	.18 (.15)	.21 (.14)	.23 (.14)	.24 (.16)	0.39
Approach from behind	.17 (.12)	.15 (.17)	.17 (.14)	.16 (.11)	0.34

Note. Mean proportions within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-11 (continued)

Mean Proportions (and Standard Deviations) by Classification Group for Selected Entry Characteristics: Social Initiations by Target Girls

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Nature of the peer response to the target initiation					
Complementary	.65 (.18)	.70 (.18)	.72 (.21)	.75 (.12)	0.55
Different kind (Positive)	.11 (.14)	.05 (.08)	.05 (.09)	.05 (.07)	1.10
Avoid/ignore	.23 (.17)	.22 (.16)	.21 (.16)	.17 (.12)	0.16
Different kind (Antisocial)	.01 (.03)	.02 (.04)	.02 (.03)	.03 (.04)	0.23
Intensity of the subsequent interaction					
Intensity Increases	.09 (.09)	.02 (.05)	.09 (.14)	.06 (.06)	1.82
Intensity Decreases	.12 (.15)	.07 (.12)	.06 (.09)	.04 (.08)	1.77

Note. Mean proportions within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-12

Mean Proportions (and Standard Deviations) by Classification Group for Selected Entry Characteristics: Social Initiations by Peers Directed Toward Target Girls

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Context for the initiation					
Structured Play	.60 (.32)	.49 (.40)	.56 (.24)	.66 (.24)	0.87
Opposite sex	.33 (.32)	.20 (.17)	.22 (.22)	.23 (.17)	0.55
Nature of the peer initiation					
Inappropriate	$.25_{ab}$ (.14)	$.18_{b}$ (.24)	$.34_{a}$ (.20)	$.19_{b}$ (.14)	2.31 *
Aggressive	.21 (.13)	.18 (.19)	.28 (.21)	.13 (.12)	1.94
Interrupts activity	.19 (.13)	.19 (.20)	.30 (.19)	.28 (.13)	1.83
Inappropriate eye contact	$.23_{a}$ (.11)	$.10_{b}$ (.09)	$.14_{b}$ (.15)	$.21_{ab}$ (.17)	2.28 *
Approach from behind	.14 (.13)	.17 (.13)	.21 (.15)	.13 (.10)	0.78

Note. Mean proportions within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-12 (continued)

Mean Proportions (and Standard Deviations) by Classification Group for Selected Entry Characteristics: Social Initiations by Peers Directed Toward Target Girls

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
Nature of the target response to the peer initiation					
Complementary	.70 (.17)	.75 (.18)	.63 (.21)	.71 (.20)	0.59
Different kind (Positive)	.05 (.07)	.07 (.07)	.09 (.13)	.04 (.06)	0.93
Avoid/ignore	.22 (.14)	.17 (.14)	.22 (.19)	.22 (.17)	0.15
Different kind (Antisocial)	.03 (.10)	.01 (.03)	.05 (.10)	.03 (.06)	0.59
Intensity of the subsequent interaction					
Intensity Increases	.06 (.07)	.12 (.12)	.08 (.12)	.09 (.10)	0.45
Intensity Decreases	.03 (.05)	.04 (.11)	.09 (.12)	.03 (.08)	1.92

Note. Mean proportions within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-13

Mean Conditional Probabilities (and Standard Deviations) for Specific Initiation-Response Sequences by Classification Group

	PEI Classification Group				
	Aggr.	With.	AgWi.	Cont.	F ratio
a) Target appropriate/nonaggressive initiations followed by a negative peer response (minimum 5 approp/nonagg initiations)	$.23_{b}$ (.14)	$.33_{a}$ (.14)	$.27_{ab}$ (.12)	$.21_{b}$ (.14)	2.46 *
b) Target inappropriate/aggressive initiations followed by a positive peer response (minimum 5 inapp/agg initiations)	.58 (.19)	.52 (.11)	.54 (.15)	.64 (.22)	0.57
c) Peer appropriate/nonaggressive initiations followed by a negative target response (minimum 1 approp/nonagg initiation)	$.22_{ab}$ (.18)	$.12_{b}$ (.13)	$.23_{a}$ (.19)	$.25_{a}$ (.24)	2.37 *
d) Peer inappropriate/aggressive initiations followed by a positive target response (minimum 1 inapp/agg initiation)	.67 (.36)	.52 (.40)	.53 (.39)	.52 (.41)	0.97

Note. Mean conditional probabilities within each row that do not share a common subscript are significantly different.

* p<.10 ** p<.05 *** p<.01

Table G-14

Mean Proportions (and Standard Deviations) by Sex for Selected Entry Characteristics: Social Initiations by Target Children

	Sex of Target		
	Boys	Girls	F ratio
Context for the initiation			
Structured Play	.59 (.31)	.64 (.27)	1.43
Opposite sex	.16 (.14)	.25 (.22)	4.71 **
Nature of the target initiation			
Inappropriate	.38 (.27)	.28 (.21)	4.98 **
Aggressive	.36 (.21)	.21 (.19)	16.66 ***
Interrupts activity	.23 (.16)	.21 (.15)	0.73
Inappropriate eye contact	.26 (.16)	.22 (.14)	2.84 *
Approach from behind	.22 (.12)	.16 (.13)	5.23 **

* p<.10 ** p<.05 *** p<.01

Table G-14 (continued)

Mean Proportions (and Standard Deviations) by Sex for Selected Entry Characteristics: Social Initiations by Target Children

	Sex of Target		
	Boys	Girls	F ratio
Nature of the peer response			
Complementary	.59 (.16)	.71 (.17)	13.16 ***
Different kind (Positive)	.08 (.08)	.07 (.10)	1.49
Avoid/ignore	.29 (.14)	.20 (.15)	10.16 ***
Different kind (Antisocial)	.04 (.05)	.02 (.04)	6.02 **
Intensity of the subsequent interaction			
Intensity Increases	.07 (.08)	.07 (.10)	0.01
Intensity Decreases	.06 (.07)	.07 (.11)	0.13

* p<.10 ** p<.05 *** p<.01

Table G-15

Mean Proportions by Sex for Selected Entry Characteristics: Social Initiations by Peers Directed Toward Target Children

	Sex of Target		
	Boys	Girls	F ratio
Context for the initiation			
Structured Play	.53 (.27)	.59 (.29)	0.81
Opposite sex	.12 (.14)	.25 (.22)	10.31 ***
Nature of the peer initiation			
Inappropriate	.35 (.17)	.24 (.18)	13.03 ***
Aggressive	.36 (.19)	.20 (.17)	26.08 ***
Interrupts activity	.23 (.11)	.25 (.16)	0.10
Inappropriate eye contact	.21 (.12)	.18 (.14)	3.98 **
Approach from behind	.20 (.15)	.16 (.13)	2.72

* p<.10 ** p<.05 *** p<.01

Table G-15 (continued)

Mean Proportions by Sex for Selected Entry Characteristics: Social Initiations by Peers Directed Toward Target Children

	Sex of Target		
	Boys	Girls	F ratio
Nature of the target response to peer initiation			
Complementary	.57 (.16)	.70 (.19)	13.96 ***
Different kind (Positive)	.10 (.10)	.06 (.09)	6.55 **
Avoid/ignore	.29 (.16)	.21 (.16)	7.55 ***
Different kind (Antisocial)	.04 (.06)	.03 (.08)	0.80
Intensity of the subsequent interaction			
Intensity Increases	.09 (.10)	.09 (.10)	0.38
Intensity Decreases	.08 (.10)	.05 (.09)	6.27 **

* p<.10 ** p<.05 *** p<.01

Appendix H

Reduction of Coding Options

Reduction of Coding Options

Context: The context within which the initiation occurred was originally coded as a dichotomous variable. Further analyses focus on the proportion of initiations occurring within a "Structured" activity.

Sex: The sex of the peer toward whom the initiation was directed, or the sex of the peer who directed the initiation toward the target child, was coded as either "Same sex", "Opposite sex", and "Both sexes" relative to the target child. The "Opposite sex" and "Both sex" options were combined to create a single "Opposite sex" measure. The new "Opposite sex" measure was the focus of all analyses.

Appropriateness: The "Mildly Inappropriate" and "Inappropriate" coding options were combined to create a single measure representing the proportion of initiations rated as "Inappropriate".

Aggressiveness of the initiation: The "Mildly Aggressive", "Moderately Aggressive", and "Severely Aggressive" options were combined to create a single measure of the aggressive nature of the initiation attempt. The proportion of initiations coded as "Aggressive" was the focus of all further analyses.

Interruption of the ongoing activity: The options "Interrupts activity for children involved in the interaction" and "Interrupts activity for more than just the children involved in the interaction" were combined to create a single "Interrupts activity" variable. The rationale for the original differentiation between the options was based on the belief that interruption of an activity for a whole group is a more extreme behaviour than interruption of that activity for only one participant in an activity. The proportion of initiations coded as "Interrupts activity" was the focus of all further analyses.

Appropriateness of eye contact: The appropriateness of the eye contact between the target child and his peer(s) was originally coded as a dichotomous (yes or no) variable. The proportion of initiations coded as "Inappropriate eye contact" was the focus of all further analyses.

Approach or orientation of the initiating child: The direction from which the initiating child approaches the peer was originally coded as a dichotomous (behind vs side/front) variable. The proportion of initiations coded as "Approach from behind" was the focus of all further analyses.

Nature of the response to the initiation: The nature of the response initially included seven coding options and was the most complex of the observational code categories. Preliminary analyses suggested that the subtle differences between some of the options were less meaningful than originally anticipated. Consequently, several of the options were combined in order to reduce the number of variables for analyses as well as to increase the frequencies. Specifically, the "No response" and "Attempted to avoid" options were combined to create a single variable labelled "Avoidance/ignore". The three options reflecting the relative intensity of a complementary response were also combined to create a single measure of "Complementary" response. Finally, the two types of "Different kind" response (i.e. Positive and Negative/antisocial) were retained as they were originally conceived. The four resulting options were the focus of all further analyses.

Leadership or organizational behaviour: The frequency of initiations that could be classified as "Leadership or organizational" was extremely low. Therefore, the variable was dropped from all further analyses.

Intensity of the subsequent interaction: Initially, there were six coding options under this category which was deigned to assess the intensity of the subsequent interaction relative to the intensity of the initiation. Again, preliminary analyses revealed that some of the subtle differences between some options were not as meaningful as had been originally anticipated. In preparation for final analyses, the "More aggressive" and "More intense" options were combined to create a single option labelled "Intensity increases". Similarly, the "Less aggressive" and "Less intense" options were combined to create a variable labelled "Intensity decreases".

Appendix I

Tables Relevant to the Method for the Analysis of the Individual Items of the Pupil Evaluation Inventory (Study 2)

Table I-1

Distribution of Subjects for Item Analysis Sample and Number of Subjects Added to Observational Sample

	PEI Classification Group		
	Aggr.	With.	AgWi.
Males	25	23	26
(added)	(9)	(8)	(12)
Females	16	15	35
(added)	(3)	(3)	(21)
Total	41	38	61
(added)	(12)	(11)	(33)

Table I-2

Mean PEI Aggression, Withdrawal, and Likeability Z-scores (and Standard Deviations) by Classification Group and Sex for the Extended (Item Analysis) and Observational Samples

	PEI Classification Group		
	Aggr.	With.	AgWi.
Males			
Aggression z-scores			
Ext.	1.81	-.74	1.31
	(.32)	(.54)	(.54)
Obs.	1.75	-.84	1.27
	(.36)	(.50)	(.53)
Withdrawal z-scores			
Ext.	-.13	2.11	1.47
	(.48)	(.48)	(.62)
Obs.	-.11	2.16	1.42
	(.44)	(.55)	(.65)
Likeability z-scores			
Ext.	-.10	-.36	-.98
	(.61)	(.65)	(.59)
Obs.	-.09	-.25	-1.09
	(.65)	(.74)	(.39)

Table I-2 (continued)

Mean PEI Aggression, Withdrawal, and Likeability Z-scores (and Standard Deviations) by Classification Group and Sex for the Extended (Item Analysis) and Observational Samples

	PEI Classification Group		
	Aggr.	With.	AgWi.
Females			
Aggression z-scores			
Ext.	2.18 (.45)	-.42 (.63)	1.78 (.74)
Obs.	2.18 (.48)	-.51 (.60)	1.80 (.62)
Withdrawal z-scores			
Ext.	-.17 (.51)	1.86 (.50)	1.64 (.63)
Obs.	-.25 (.51)	1.78 (.52)	1.76 (.51)
Likeability z-scores			
Ext.	-.47 (.46)	-.42 (.83)	-.76 (.58)
Obs.	-.44 (.50)	-.32 (.89)	-.61 (.82)

Appendix J

Tables Relevant to the Results for the Analysis of the Individual Items of the Pupil Evaluation Inventory (Study 2)

Table J-1

Range and Mean Number of Raters for Males and Females in the Item Analysis Sample by PEI Group

	PEI Classification Group		
	Aggr.	With.	AgWi.
Males			
mean	26.3	26.2	26.1
range	22-29	22-29	24-29
Females			
mean	26.3	26.5	26.0
range	23-29	22-29	22-29

Table J-2

Pearson Correlation Between Proportion of Nomination for Individual PEI Items Over an Eight Month Period

		Boys (n=111)	Girls (n=126)	Combined (n=237)
Aggression Items				
31.	Say can beat up others.	.77	.81	.78
26.	Act like a baby.	.70	.85	.78
9.	Fights over nothing.	.76	.74	.75
8.	Play the clown.	.72	.73	.74
21.	Mad when don't get way.	.78	.68	.74
27.	Mean, cruel to others.	.77	.69	.74
3.	Can't sit still.	.67	.81	.73
30.	Show off in class.	.71	.71	.72
15.	Always mess around.	.62	.77	.70
4.	Get others into trouble.	.66	.72	.69
23.	Rude to the teacher.	.67	.70	.69
34.	Nothing makes happy.	.69	.69	.69
7.	Act stuck-up.	.63	.76	.68
12.	Tell others what to do.	.70	.67	.68
16.	Make fun of people.	.62	.73	.68
20.	Bother others working.	.60	.74	.67
22.	Don't attend to teacher.	.58	.77	.67
33.	Exaggerate, make stories.	.60	.71	.66
18.	Do strange things.	.50	.68	.59
29.	Give dirty looks.	.47	.63	.55

N.B. All coeff. significant at $p<.001$ for one-tailed test.

Table J-2 (continued)

Pearson Correlation Between Proportion of Nomination for Individual PEI Items Over an Eight Month Period

		Boys (n=111)	Girls (n=126)	Combined (n=237)
	Withdrawal Items			
10.	Never have a good time.	.80	.84	.82
17.	Have very few friends.	.79	.86	.82
13.	Chosen last to join groups.	.72	.86	.80
11.	Upset by questions in class.	.70	.83	.77
5.	Too shy to make friends.	.74	.81	.77
24.	Unhappy or sad.	.69	.80	.76
32.	Aren't noticed much.	.73	.66	.69
6.	Feelings are easily hurt.	.57	.75	.67
28.	Often don't want to play.	.49	.80	.67
	Likeability Items			
2.	Help others.	.80	.85	.83
25.	Especially nice.	.71	.79	.76
19.	Your best friends.	.71	.77	.74
14.	Liked by everyone.	.54	.84	.73
35.	Always understand things.	.53	.69	.62

N.B. All coeff. significant at $p<.001$ for one-tailed test.

Table J-3

Salience Groupings of PEI Aggression Salience Ratios and 95% Confidence Intervals for Aggressive and Aggressive-withdrawn Boys

		Ratio	95% Conf. Int.
Aggressive boys (N=25)			
	High Salience		
3.	Can't sit still.	1.34	(1.13, 1.55)
22.	Don't attend to teacher.	1.31	(1.15, 1.46)
8.	Play the clown.	1.29	(1.03, 1.54)
31.	Say can beat up others.	1.24	(1.02, 1.46)
30.	Show off in class.	1.23	(1.06, 1.40)
20.	Bother others working.	1.17	(1.04, 1.31)
	Neutral Salience		
23.	Rude to the teacher.	1.10	(0.92, 1.28)
16.	Make fun of people.	1.09	(0.99, 1.18)
21.	Mad when don't get way.	1.04	(0.85, 1.24)
33.	Exaggerate, make stories.	1.01	(0.93, 1.09)
26.	Act like a baby.	0.98	(0.78, 1.19)
4.	Get others into trouble.	0.97	(0.81, 1.14)
9.	Fights over nothing.	0.96	(0.74, 1.18)
34.	Nothing makes happy.	0.93	(0.78, 1.08)
7.	Act stuck-up.	0.89	(0.73, 1.75)
	Low Salience		
29.	Give dirty looks.	0.55	(0.46, 0.64)
15.	Always mess around.	0.68	(0.56, 0.81)
18.	Do strange things.	0.68	(0.57, 0.80)
12.	Tell others what to do.	0.73	(0.61, 0.84)
27.	Mean, cruel to others.	0.81	(0.63, 0.99)

Table J-3 (continued)

Salience Groupings of PEI Aggression Salience Ratios and 95% Confidence Intervals for Aggressive and Aggressive-withdrawn Boys

		Ratio	95% Conf. Int.
Aggressive-withdrawn boys (N=26)			
	High Salience		
26.	Act like a baby.	1.90	(1.60, 2.21)
22.	Don't attend to teacher.	1.75	(1.48, 2.01)
3.	Can't sit still.	1.64	(1.43, 1.85)
15.	Always mess around.	1.61	(1.39, 1.83)
20.	Bother others working.	1.26	(1.12, 1.39)
	Neutral Salience		
34.	Nothing makes happy.	0.99	(0.76, 1.22)
8.	Play the clown.	0.98	(0.63, 1.33)
30.	Show off in class.	0.95	(0.69, 1.20)
18.	Do strange things.	0.94	(0.75, 1.13)
33.	Exaggerate, make stories.	0.93	(0.74, 1.13)
4.	Get others into trouble.	0.91	(0.74, 1.08)
16.	Make fun of people.	0.89	(0.69, 1.05)
23.	Rude to the teacher.	0.84	(0.63, 1.05)
	Low Salience		
12.	Tell others what to do.	0.48	(0.34, 0.62)
27.	Mean, cruel to others.	0.49	(0.34, 0.64)
7.	Act stuck-up.	0.62	(0.48, 0.76)
29.	Give dirty looks.	0.67	(0.52, 0.81)
31.	Say can beat up others.	0.70	(0.47, 0.93)
21.	Mad when don't get way.	0.73	(0.55, 0.91)
9.	Fights over nothing.	0.75	(0.51, 0.99)

Table J-4

Summary of Salience Ratios and Proportion of Nominations for PEI Aggression Items Differentiating the Aggressive and the Aggressive-withdrawn Boys

	PEI Group		
	Aggr.	AgWi.	t
a) Items showing significant differences between groups on the salience ratio with one group mean falling significantly above 1.00 (high salient) and one group mean significantly below 1.00 (low salient):			
15. Always mess around.	0.68	1.61	-7.48 ***
(proportion noms)	(.31)	(.42)	
31. Say can beat up others.	1.24	0.70	3.49 ***
(proportion noms)	(.56)	(.21)	
b) Items showing significant differences on the salience ratio with one group mean significantly above 1.00 (high salient) and one group mean not statistically different from 1.00 (neutral salient).			
26. Act like a baby.	0.98	1.90	-5.13 ***
(proportion noms)	(.44)	(.49)	
30. Show off in class.	1.23	0.95	1.95 *
(proportion noms)	(.55)	(.23)	
c) Items showing significant differences on the salience ratio with one group mean significantly below 1.00 (low salient) and one group mean not statistically different from 1.00 (neutral salient).			
7. Act stuck-up.	0.89	0.62	2.58 **
(proportion noms)	(.42)	(.17)	
18. Do strange things.	0.68	0.94	-2.35 **
(proportion noms)	(.31)	(.24)	
21. Mad when don't get way.	1.04	0.73	2.39 **
(proportion noms)	(.47)	(.22)	

* p<.10 ** p<.05 *** p<.01

Table J-5

Salience Groupings of PEI Aggression Salience Ratios and 95% Confidence Intervals for Aggressive and Aggressive-withdrawn Girls

		Ratio	95% Conf. Int.
Aggressive girls (N=16)			
	High Salience		
31.	Say can beat up others.	1.33	(1.00, 1.67)
	Neutral Salience		
3.	Can't sit still.	1.21	(0.89, 1.52)
7.	Act stuck-up.	1.21	(0.92, 1.50)
8.	Play the clown.	1.19	(0.82, 1.56)
16.	Make fun of people.	1.16	(0.94, 1.38)
20.	Bother others working.	1.13	(0.89, 1.37)
22.	Don't attend to teacher.	1.12	(0.90, 1.34)
30.	Show off in class.	1.12	(0.89, 1.35)
33.	Exaggerate, make stories.	1.10	(0.96, 1.24)
21.	Mad when don't get way.	1.08	(0.75, 1.40)
4.	Get others into trouble.	1.07	(0.87, 1.27)
34.	Nothing makes happy.	1.07	(0.84, 1.30)
9.	Fights over nothing.	0.94	(0.71, 1.17)
12.	Tell others what to do.	0.87	(0.60, 1.15)
	Low Salience		
18.	Do strange things.	0.62	(0.48, 0.76)
15.	Always mess around.	0.66	(0.49, 0.83)
23.	Rude to the teacher.	0.74	(0.49, 0.99)
29.	Give dirty looks.	0.77	(0.62, 0.91)
26.	Act like a baby.	0.79	(0.61, 0.97)
27.	Mean, cruel to others.	0.82	(0.66, 0.98)

Table J-5 (continued)

Salience Groupings of PEI Aggression Salience Ratios and 95% Confidence Intervals for Aggressive and Aggressive-withdrawn Girls

		Ratio	95% Conf. Int.
Aggressive-withdrawn girls (N=35)			
	High Salience		
26.	Act like a baby.	1.68	(1.34, 2.02)
22.	Don't attend to teacher.	1.38	(1.16, 1.60)
34.	Nothing makes happy.	1.35	(1.18, 1.53)
3.	Can't sit still.	1.27	(1.11, 1.43)
15.	Always mess around.	1.27	(1.08, 1.45)
	Neutral Salience		
20.	Bother others working.	1.11	(0.99, 1.23)
4.	Get others into trouble.	1.06	(0.96, 1.16)
30.	Show off in class.	1.03	(0.88, 1.18)
33.	Exaggerate, make stories.	1.02	(0.90, 1.15)
21.	Mad when don't get way.	0.96	(0.77, 1.15)
9.	Fights over nothing.	0.94	(0.81, 1.08)
29.	Give dirty looks.	0.91	(0.81, 1.02)
7.	Act stuck-up.	0.89	(0.75, 1.02)
16.	Make fun of people.	0.87	(0.74, 1.00)
	Low Salience		
8.	Play the clown.	0.52	(0.39, 0.66)
31.	Say can beat up others.	0.68	(0.54, 0.82)
12.	Tell others what to do.	0.69	(0.58, 0.81)
27.	Mean, cruel to others.	0.76	(0.65, 0.88)
23.	Rude to the teacher.	0.78	(0.61, 0.95)
18.	Do strange things.	0.81	(0.66, 0.97)

Table J-6

Summary of Salience Ratios and Proportion of Nominations for PEI Aggression Items Differentiating the Aggressive and the Aggressive-withdrawn Girls

	PEI Group		
	Aggr.	AgWi.	t
a) Items showing significant differences between groups on the salience ratio with one group mean falling significantly above 1.00 (high salient) and one group mean significantly below 1.00 (low salient):			
15. Always mess around.	0.66	1.27	-5.04 ***
(proportion noms)	(.22)	(.38)	
26. Act like a baby.	0.79	1.68	-4.78 ***
(proportion noms)	(.27)	(.48)	
31. Say can beat up others.	1.33	0.68	3.76 ***
(proportion noms)	(.44)	(.26)	
b) Items showing significant differences on the salience ratio with one group mean significantly above 1.00 (high salient) and one group mean not statistically different from 1.00 (neutral salient).			
22. Don't attend to teacher.	1.12	1.38	-1.71 *
(proportion noms)	(.40)	(.40)	
34. Nothing makes happy.	1.07	1.35	-2.06 **
(proportion noms)	(.35)	(.40)	
c) Items showing significant differences on the salience ratio with one group mean significantly below 1.00 (low salient) and one group mean not statistically different from 1.00 (neutral salient).			
8. Play the clown.	1.19	0.52	3.59 **
(proportion noms)	(.40)	(.18)	
29. Give dirty looks.	0.77	0.91	-1.72 *
(proportion noms)	(.24)	(.29)	

* p<.10 ** p<.05 *** p<.01

Table J-7

Salience Groupings of PEI Withdrawal Salience Ratios and 95% Confidence Intervals for Withdrawn and Aggressive-withdrawn Boys

		Ratio	95% Conf. Int.
Withdrawn boys (N=23)			
	High Salience		
32.	Aren't noticed much.	1.41	(1.11, 1.70)
	Neutral Salience		
17.	Have very few friends.	1.22	(0.99, 1.44)
5.	Too shy to make friends.	1.09	(0.87, 1.31)
10.	Never have a good time.	1.07	(0.90, 1.24)
24.	Unhappy or sad.	0.97	(0.78, 1.16)
13.	Chosen last to join groups.	0.94	(0.71, 1.18)
11.	Upset by questions in class.	0.90	(0.54, 1.26)
28.	Often don't want to play.	0.77	(0.27, 1.28)
	Low Salience		
6.	Feelings are easily hurt.	0.64	(0.38, 0.90)

Table J-7 (continued)

Salience Groupings of PEI Withdrawal Salience Ratios and 95% Confidence Intervals for Withdrawn and Aggressive-withdrawn Boys

		Ratio	95% Conf. Int.
Aggressive-withdrawn boys (N=26)			
	High Salience		
13.	Chosen last to join groups.	1.94	(1.47, 2.40)
17.	Have very few friends.	1.38	(1.09, 1.67)
11.	Upset by questions in class.	1.38	(1.02, 1.73)
	Neutral Salience		
6.	Feelings are easily hurt.	1.10	(0.69, 1.52)
10.	Never have a good time.	0.92	(0.71, 1.14)
28.	Often don't want to play.	0.80	(0.52, 1.07)
	Low Salience		
32.	Aren't noticed much.	0.29	(0.17, 0.40)
24.	Unhappy or sad.	0.53	(0.31, 0.75)
5.	Too shy to make friends.	0.67	(0.51, 0.82)

Table J-8

Summary of Salience Ratios and Proportion of Nominations for PEI Withdrawal Items Differentiating the Withdrawn and the Aggressive-withdrawn Boys

	PEI Group		
	With.	AgWi.	t
a) Items showing significant differences between groups on the salience ratio with one group mean falling significantly above 1.00 (high salient) and one group mean significantly below 1.00 (low salient):			
32. Aren't noticed much.	1.41	0.29	7.32 ***
(proportion noms)	(.39)	(.05)	
b) Items showing significant differences on the salience ratio with one group mean significantly above 1.00 (high salient) and one group mean not statistically different from 1.00 (neutral salient).			
11. Upset by questions.	0.90	1.38	-1.96 *
(proportion noms)	(.24)	(.23)	
13. Chosen last for groups.	0.94	1.94	-3.95 ***
(proportion noms)	(.28)	(.34)	
c) Items showing significant differences on the salience ratio with one group mean significantly below 1.00 (low salient) and one group mean not statistically different from 1.00 (neutral salient).			
5. Shy to make friends.	1.09	0.67	3.20 ***
(proportion noms)	(.32)	(.12)	
6. Feelings easily hurt.	0.64	1.10	-1.98 *
(proportion noms)	(.17)	(.18)	
24. Unhappy or sad.	0.97	0.53	3.12 ***
(proportion noms)	(.29)	(.10)	

* p<.10 ** p<.05 *** p<.01

Table J-9

Salience Groupings of PEI Withdrawal Salience Ratios and 95% Confidence Intervals for Withdrawn and Aggressive-withdrawn Girls

		Ratio	95% Conf. Int.
Withdrawn girls (N=15)			
	Neutral Salience		
13.	Chosen last to join groups.	1.26	(0.94, 1.58)
32.	Aren't noticed much.	1.23	(0.85, 1.61)
17.	Have very few friends.	1.18	(0.89, 1.47)
28.	Often don't want to play.	1.18	(0.84, 1.52)
10.	Never have a good time.	1.13	(0.92, 1.33)
5.	Too shy to make friends.	0.95	(0.68, 1.21)
24.	Unhappy or sad.	0.77	(0.51, 1.03)
6.	Feelings are easily hurt.	0.66	(0.32, 1.01)
	Low Salience		
11.	Upset by questions in class.	0.65	(0.41, 0.88)

Table J-9 (continued)

Salience Groupings of PEI Withdrawal Salience Ratios and 95% Confidence Intervals for Withdrawn and Aggressive-withdrawn Girls

		Ratio	95% Conf. Int.
Aggressive-withdrawn girls (N=35)			
	High Salience		
13.	Chosen last to join groups.	1.56	(1.34, 1.77)
11.	Upset by questions in class.	1.27	(1.07, 1.47)
17.	Have very few friends.	1.23	(1.08, 1.38)
	Neutral Salience		
6.	Feelings are easily hurt.	1.13	(0.90, 1.36)
28.	Often don't want to play.	1.04	(0.87, 1.22)
10.	Never have a good time.	0.89	(0.75, 1.04)
	Low Salience		
32.	Aren't noticed much.	0.49	(0.38, 0.60)
24.	Unhappy or sad.	0.58	(0.46, 0.70)
5.	Too shy to make friends.	0.80	(0.67, 0.93)

Table J-10

Summary of Salience Ratios and Proportion of Nominations for PEI Withdrawal Items Differentiating the Withdrawn and the Aggressive-withdrawn Girls

	PEI Group		
	With.	AgWi.	t
a) Items showing significant differences between groups on the salience ratio with one group mean falling significantly above 1.00 (high salient) and one group mean significantly below 1.00 (low salient):			
11. Upset by questions.	0.65	1.27	-4.24 ***
(proportion noms)	(.20)	(.31)	
b) Items showing significant differences on the salience ratio with one group mean significantly above 1.00 (high salient) and one group mean not statistically different from 1.00 (neutral salient).			
No significant items.			
c) Items showing significant differences on the salience ratio with one group mean significantly below 1.00 (low salient) and one group mean not statistically different from 1.00 (neutral salient).			
32. Aren't noticed much.	1.23	0.49	3.97 ***
(proportion noms)	(.36)	(.12)	

* p<.10 ** p<.05 *** p<.01

Appendix K

Salience Ratios for Contrast Boys and Girls (Supplementary Analyses)

Table K-1

Salience Groupings of PEI Aggression and Withdrawal Salience Ratios and 95% Confidence Intervals for Contrast Boys

		Ratio	95% Conf. Int.
Aggression items (N=81)			
	High Salience		
7.	Act stuck-up.	1.46	(1.19, 1.73)
16.	Make fun of people.	1.19	(1.00, 1.39)
	Neutral Salience		
8.	Play the clown.	1.32	(0.91, 1.73)
12.	Tell others what to do.	1.27	(0.95, 1.59)
15.	Always mess around.	1.19	(0.94, 1.43)
3.	Can't sit still.	1.14	(0.94, 1.34)
33.	Exaggerate, make stories.	1.12	(0.92, 1.32)
21.	Mad when don't get way.	1.12	(0.91, 1.33)
22.	Don't attend to teacher.	1.05	(0.80, 1.31)
20.	Bother others working.	1.02	(0.87, 1.17)
18.	Do strange things.	1.01	(0.81, 1.22)
31.	Say can beat up others.	1.00	(0.78, 1.21)
30.	Show off in class.	0.96	(0.79, 1.14)
9.	Fights over nothing.	0.90	(0.71, 1.08)
4.	Get others into trouble.	0.85	(0.69, 1.01)
34.	Nothing makes happy.	0.83	(0.67, 1.00)
	Low Salience		
23.	Rude to the teacher.	0.47	(0.33, 0.61)
27.	Mean, cruel to others.	0.48	(0.37, 0.59)
29.	Give dirty looks.	0.78	(0.61, 0.95)
26.	Act like a baby.	0.83	(0.67, 0.98)

* p<.10 ** p<.05 *** p<.01

Table K-1 (continued)

Salience Groupings of PEI Aggression and Withdrawal Salience Ratios and 95% Confidence Intervals for Contrast Boys

		Ratio	95% Conf. Int.
Withdrawal Items			
	High Salience		
11.	Upset by questions in class.	1.50	(1.25, 1.75)
13.	Chosen last to join groups.	1.42	(1.20, 1.65)
32.	Aren't noticed much.	1.39	(1.06, 1.72)
	Neutral Salience		
6.	Feelings are easily hurt.	1.15	(0.88, 1.42)
10.	Never have a good time.	0.85	(0.66, 1.03)
	Low Salience		
24.	Unhappy or sad.	0.44	(0.31, 0.58)
28.	Often don't want to play.	0.69	(0.48, 0.91)
5.	Too shy to make friends.	0.74	(0.56, 0.92)
17.	Have very few friends.	0.82	(0.64, 0.99)

* p<.10 ** p<.05 *** p<.01

Table K-2

Salience Groupings of PEI Aggression and Withdrawal Salience Ratios and 95% Confidence Intervals for Contrast Girls

		Ratio	95% Conf. Int.
Aggression Items (N=116)			
	High Salience		
12.	Tell others what to do.	1.83	(1.54, 2.12)
7.	Act stuck-up.	1.68	(1.47, 1.88)
30.	Show off in class.	1.42	(1.12, 1.71)
	Neutral Salience		
18.	Do strange things.	1.18	(0.85, 1.50)
16.	Make fun of people.	1.10	(0.91, 1.28)
15.	Always mess around.	1.07	(0.85, 1.28)
3.	Can't sit still.	1.07	(0.86, 1.28)
29.	Give dirty looks.	1.06	(0.88, 1.25)
34.	Nothing makes happy.	1.02	(0.83, 1.21)
8.	Play the clown.	1.02	(0.79, 1.25)
9.	Fights over nothing.	0.99	(0.82, 1.16)
4.	Get others into trouble.	0.96	(0.78, 1.13)
33.	Exaggerate, make stories.	0.91	(0.77, 1.06)
21.	Mad when don't get way.	0.89	(0.72, 1.07)
31.	Say can beat up others.	0.87	(0.70, 1.05)
	Low Salience		
23.	Rude to the teacher.	0.29	(0.20, 0.38)
27.	Mean, cruel to others.	0.48	(0.35, 0.61)
22.	Don't attend to teacher.	0.68	(0.52, 0.84)
20.	Bother others working.	0.74	(0.60, 0.89)
26.	Act like a baby.	0.75	(0.58, 0.92)

* p<.10 ** p<.05 *** p<.01

Table K-2 (continued)

Salience Groupings of PEI Aggression and Withdrawal Salience Ratios and 95% Confidence Intervals for Contrast Girls

		Ratio	95% Conf. Int.
Withdrawal Items			
	High Salience		
32.	Aren't noticed much.	1.59	(1.31, 1.88)
	Neutral Salience		
13.	Chosen last to join groups.	1.16	(0.97, 1.34)
28.	Often don't want to play.	1.12	(0.95, 1.30)
5.	Too shy to make friends.	0.99	(0.85, 1.13)
6.	Feelings are easily hurt.	0.97	(0.78, 1.15)
11.	Upset by questions in class.	0.95	(0.77, 1.14)
10.	Never have a good time.	0.90	(0.75, 1.05)
	Low Salience		
24.	Unhappy or sad.	0.50	(0.40, 0.61)
17.	Have very few friends.	0.81	(0.65, 0.98)

* p<.10 ** p<.05 *** p<.01