

**Understanding the Development of Aggression: Where do we Stand?**

Willard W. Hartup  
*University of Minnesota, USA*

Progress over thirty years in the study of the development of aggression will be surveyed. Both normative issues and individual differences will be discussed. Most important, conceptual difficulties remain in spite of notable attempts to bring order to this field. Success in understanding aggression in the family context and the peer context will be described but the necessity for greater attention to relationship perspectives will be argued and illustrations provided. Advances have been made in specifying the role of gender in this area but much remains uncertain. The need for life course studies, beginning in infancy and early childhood, is being addressed significantly but gaps remain; the need for person-oriented analysis of developmental trajectories will be argued. Given the momentum of the recent past and the accomplishments made, the future appears bright.

**Prenatal Risk Factors, Brain Development, and Aggressive Behavior****MATERNAL ANTISOCIAL BEHAVIOR AND STEROID HORMONES, AND CHILDREN'S CORTISOL LEVELS**

Elizabeth J. Susman & Elizabeth A. Shirtcliff  
*Pennsylvania State University, USA*

Maternal behavior in the prenatal period is known to affect neonatal outcomes. The interactions between maternal behavior and biology in relation to offspring biology beyond the neonatal period is less well understood. The purpose of this report is to examine group differences in maternal antisocial behavior and levels of testosterone and cortisol during pregnancy and when the children were age three. Consistent with a holistic interaction model of development, patterns of antisocial behavior and hormones were identified using cluster analysis. The number of clusters was restrained to three during the prenatal period and four at the three-year follow up: (1) high antisocial behavior and high hormone levels, (2) medium antisocial behavior and low hormones, (3) low antisocial behavior and medium hormone levels, and (4) a unique group of unclustered mothers at the follow up. Saliva was collected from the children during two laboratory sessions and one at-home collection. There were no differences in child cortisol level between the three clusters of mothers in the prenatal period. At the three-year follow up, there was a significant interaction between clusters and time of saliva collection. Children of mothers of Groups 1, 2, and 3 decreased in cortisol levels across the two laboratory and at home times of measurement whereas children of the unique group of mothers increased in levels at the home saliva collection. The findings indicate the importance of considering periods of maternal development and the context in which hormones are assessed in longitudinal studies.

**NEURAL-IMMUNE INTERACTIONS: BRAIN DEVELOPMENT AND BEHAVIOR**

John M. Petitto  
*University of Florida, USA*

Research in psychoneuroimmunology has sought to understand how the central nervous system and the immune system interact. Considerable data now document the multiple levels of bidirectional communication that exist between these two systems. The brain can transmit signals to immunological organs such as the spleen as well as to various immune cells in the systemic circulation by neural pathways and through the endocrine system. Conversely, complex proteins (e.g., cytokines) used to transmit signals between different types of immune cells have been shown to signal the brain by both direct and indirect mechanisms. Research in this field has more recently demonstrated that classic immunological molecules and their receptors are made and expressed in the brain. Data from some animal models suggest that phenotypic differences in aggression may correlate with phenotypic differences in immunity. Though limited, the existing data indicate that this relationship is function of complex interactions between developmental factors (e.g., in utero, postnatal) and genetics. Finally, increasing evidence suggests that alterations in the normal expression of endogenous brain cytokines as well as the manifestations of autoimmune processes during development may modify structure and function of neurobiological pathways involved in control of complex behaviors such as aggression.

**Prenatal Risk Factors, Brain Development, and Aggressive Behavior****ALCOHOL EXPOSURE DURING DEVELOPMENT AND AGGRESSION: TRYING TO ESTABLISH A CAUSAL LINK**

Sandra J. Kelly  
*University of South Carolina, USA*

Alcohol exposure during development can result in characteristic facial dysmorphism, growth retardation and central nervous system (CNS) dysfunction, which together comprise Fetal Alcohol Syndrome (FAS). It has become increasingly apparent that alcohol exposure can also result in CNS dysfunction alone, which is referred to as Fetal Alcohol Effects (FAE). Examination of the behavior of children or young adults with FAS or FAE has produced mixed findings as to whether these individuals engage in more aggressive behavior compared to the general population. Furthermore, because this population of children are not only exposed to alcohol during development but are also often reared in either alcoholic families or different foster care homes, it is difficult to link any changes in behavior directly to alcohol exposure during development. Animal models of FAS have been shown to have good face validity and allow control over environmental and genetic variables. These models can also be used to try to make the causal link between alcohol-induced teratogenesis and changes in aggressive behavior stronger. Current data suggests that animals exposed to alcohol during development do show an increase in aggressive behavior. Furthermore, neural structures critically involved in aggression, particularly the amygdala and the hypothalamus, show alterations after alcohol exposure that may mediate changes in aggressive behavior. In summary, alcohol exposure during development may be a risk factor for increased aggressive behavior.

**PRENATAL TOBACCO SMOKE EXPOSURE AS A RISK FACTOR FOR PSYCHOSOCIAL MALADJUSTMENT:  
IS THERE A NEURAL LINK?**

Paul L. Gendreau  
*Université de Montréal, Canada*

In North America, one out of four fetuses is exposed chronically to tobacco smoke. Whereas the deleterious effects of prenatal tobacco smoke exposure on children's growth and health have been well documented (e.g., very low birth weight, respiratory problems), the impact on children's mental and behavioral development has not received much attention. In recent years, however, tobacco smoke exposure during prenatal development has been suggested as an important risk factor for the emergence of psychosocial disturbances in childhood and adolescence including conduct disorder, attention-deficit hyperactivity disorder, and substance abuse. Is there a cause-and-effect relationship between early tobacco smoke exposure and these behavioral disorders? One way to address this issue is to examine the effects of this neurotoxin on brain mechanisms that are associated with abnormal social development and behavior. Several lines of evidence suggest that altered brain monoaminergic (i.e., dopamine, noradrenaline, serotonin) function may be the primary underlying neural mechanism by which fetuses exposed to tobacco smoke -and more specifically nicotine- are at particular risk of later psychosocial maladjustment. Recent data from both human and animal studies that support this hypothesis will be discussed, in an attempt to demonstrate that the development of externalizing problems such as aggression and hyperactivity likely represents another adverse consequence of chronic tobacco smoke exposure during prenatal development.

**Bullying and Victimization in Young People: Current Directions in Research****INDIRECT AGGRESSION AS BULLYING? A PRECURSOR TO GIRLS' SUICIDE ATTEMPTS?**

Barbara Spears

*University of South Australia, Australia*

Research into gender differences in aggression was postulated some time ago (Buss, 1961; Feschbach, 1969) but only recently has considerable light been shed upon various remarkably similar, but subtly different sub-types of aggression in relation to gender (Lagerspetz, Bjorqvist and Peltonen, 1988; Crick and Grotpeter, 1995; Galen and Underwood, 1997).

Bullying is also recognized to be a reliably identifiable sub-set of children's aggressive behaviour (Dodge, Coie, Pettit and Price, 1990) and one which is generally defined as involving unique characteristics: not only a specific intent to harm; but also a one-way power imbalance; and repetition over time. Researchers in the area of bullying are now reporting on direct physical, verbal and indirect bullying, with Olweus (1991) suggesting that girls experienced more indirect forms of bullying. What is not clear, is whether girls perceive that their modes of aggression reflect bullying behaviours.

Amongst girls, social isolation and exclusion are reportedly indirect, relational or social forms of aggression but are also the means of exerting power over a victim (Olweus, 1991; Smith, 1991; Rigby and Slee, 1991; Rigby, 1996). This perception of power could suggest a reason why these behaviours appear to have greater impact in some situations than in others.

This paper discusses a case study of a girl's suicide attempt in light of girls' perceptions of indirect aggression as bullying. Surveys (N = 987) were administered to girls in schools in South Australia from Year 6 to Year 10 (11-15 yr olds, M = 12.97, SD = 1.46). The case study: On June 12th 2001, my seventeen year old daughter dived from building in a suicide attempt and survived. Her story sheds further light upon the findings of girls' understandings of these behaviours.

**Bullying and Victimization in Young People: Current Directions in Research****CHANGING THE CONTEXTS OF PEER VICTIMIZATION:  
THE EFFECTS OF AN ELEMENTARY SCHOOL INTERVENTION PROGRAM**

Bonnie Leadbeater & Wendy Hogg  
*University of Victoria, Canada*

While many school-violence prevention programs aim to increase individual children's social skills and prosocial behaviors, there is increasing evidence that class-room level, school-wide, and neighbourhood factors can affect the success of skills-based programs (Aber, et al., 1998; Kasen, Johnson & Cohen, 1990; Kellam et al. 1998). Positive school climates (the quality of interpersonal interactions and feelings of trust and respect that exist within the school community) are also associated with lower levels of psychopathology in children (Kasen, et al., 1990, Kuperminc, et al., 1997). However, differences in the contexts of victimization are rarely the focus of studies of risk and protective factors nor are they the targets of intervention. This paper presents data from a two-year longitudinal study of 432 first and second grade students in 17 different urban schools. Schools are categorized as poor or nonpoor based on the proportion of children on income assistance in the school. The effects of an elementary school prevention program: the "W.I.T.S." the Rock Solid Primary Program on reducing average classroom-levels of victimization are assessed. The program aim to reduction of peer victimization through a collaboration among community-based police, school police-liaisons, classroom teachers, playground supervisors, librarians, and older students. Findings from the year one data suggest that, in nonpoor program schools, average classroom-levels of relational victimization dropped significantly ( $p < .05$ ) over time compared averages in nonpoor control schools. No significant program effects were found for classrooms levels of victimization in poor schools, although levels of physical victimization increased slightly in control schools but remained the same in program schools ( $p = .07$ ).

**Bullying and Victimization in Young People: Current Directions in Research****THE PARTICULAR SITUATION OF BULLY-VICTIMS  
AS COMPARED TO VICTIMIZED BULLIES AND NON-AGGRESSIVE VICTIMS**

Françoise D. Alsaker & Brigitta Schaffner  
*University of Bern, Switzerland*

Research on victimization has primarily focused on victims, without taking their own aggressiveness into account. Research on aggressive behavior, on the other hand, has focused on aggressive children mostly without differentiating between victimized and non-victimized aggressors. Results distinguishing between non-victimized bullies, non-aggressive victims, and aggressive victims (bully-victims) show important distinctive features between these groups. In this paper we report on data from two studies and examine background variables (family, biology) and the actual psychosocial situation of bully-victims in contrast with victimized bullies and non-aggressive victims. The first study was conducted in Norway and Switzerland, including around 2500 students aged 10 through 16 and using self-reports. The second study was conducted in kindergartens in Switzerland, including 350 children aged 5 through 7 and using peer-nominations, parents', and teachers' reports.

Results from the two studies show high concordance: bully-victims and victims are less liked than bullies, but bully-victims also report having less rewarding friendships than victims. Bully-victims engage in norm-breaking behavior like bullies do, but they are clearly more aggressive (especially physically). Like victims, they are more anxious than bullies, but in contrast to victims they are not withdrawn and can set limits better than victims. However, they are likely depressed as victims and report even more somatic symptoms. Bully-victims come from families under strain and they have more often experienced problems at birth. In conclusion, bully-victims seem to be in a specific situation, psychologically as well as socially speaking. Their victimization experiences and their aggressive behavior seem to follow paths that differ from those of bullies and victims. Implications for research and prevention work will be discussed.

**Bullying and Victimization in Young People: Current Directions in Research****AGGRESSIVE CLASSROOM MANAGEMENT: DO TEACHERS BULLY PUPILS?**

Mike Eslea

*University of Central Lancashire, UK*

*Background:* Schoolteachers are an important influence on the development of aggressive behaviour patterns among pupils. This influence may operate directly, through their power to manipulate the peer group, and indirectly, in the way that their own behaviour provides a role model. This paper assesses the use of aggression by teachers: its nature, incidence and effects.

*Sample:* A series of studies were conducted with a total sample size of 612 adults, approximately equal numbers of males and females, recruited individually around the University campus and in nearby workplaces.

*Method:* Participants completed questionnaires asking about their experiences of aggression and bullying, by teachers and by peers, during their schooldays.

*Results:* Overall, approximately 45% of participants reported experiencing at least some teacher aggression. More had witnessed aggression towards classmates. Most victims also reported being victimized by peers. Specific examples of teacher aggression included (in descending order of frequency) public ridicule & humiliation; picking on academic work; unfair punishments; verbal abuse; physical abuse; sexual harassment. All except "picking on academic work" were classed as bullying by a majority of victims. Males and females were equally likely to be victims. Few had told anyone about the incident(s).

*Conclusions:* Some teacher aggression may be necessary under certain circumstances in order to maintain control, and some may result from stress and frustration. Some is simply malicious, but this was not found to occur as frequently as anecdotal evidence had suggested it might. However, for many who suffered regular abuse at the hands of teachers the experience was and remains deeply distressing.

**Bullying and Victimization in Young People: Current Directions in Research****DEVELOPMENTAL TRAJECTORIES OF BULLYING BEHAVIOR**

Suzanne Goldbaum, Wendy M. Craig, Debra Pepler &amp; Jennifer Connolly

*York University, Canada*

Previous research investigating peer bullying generally employed arbitrary cut-off points in forming groups of children classified as either bullies or comparisons, by forcing participants into previously determined groups. While these classifications may be theoretically reasonable, they do not necessarily exist naturally and may be based on potentially misleading categorizations. The present longitudinal study takes advantage of a new methodology designed to examine developmental trajectories, thereby allowing us to identify individual patterns of bullying that potentially change over time (Nagin & Tremblay, 1999). Preliminary analyses suggest that trajectories of bullying correspond closely to previously reported patterns of victimization (Goldbaum & Craig, 2001). Participants include middle class children who began the study in Grades 1 to 7. While the younger children (Grades 1 to 4; N = 459) were assessed six times, the older participants (Grades 5 to 7; N = 1245) completed the questionnaires on three separate occasions. Trajectories were established based self-reports of bullying using the Bully/Victim Questionnaire (Olweus, 1993). Preliminary findings suggest that four distinct groups emerge: participants who report consistently low levels of bullying, students whose bullying behaviours increase, children whose bullying decreases over time, and participants reporting consistently high levels of bullying. Comparing these four groups on an alternative measure of aggressive behaviour (CBCL-YSR) (Achenbach, 1991) attests to the validity of the trajectories. The data suggest that developmental differences emerge with older children demonstrating more consolidated patterns of bullying than younger participants. Results are discussed within a developmental framework to emphasize the socialization processes involved in the stability versus change in aggressive behaviour.

**DIRECT AND INDIRECT BULLYING BEHAVIOURS AMONG JUVENILE AND YOUNG OFFENDERS**

Jane L. Ireland

*University of Central Lancashire, UK*

This study compares direct and indirect bullying behaviours among juvenile and young offenders. 95 male juvenile offenders (age range 14 - 17yrs) and 196 male young offenders (age range 18 - 21yrs) took part. Two different methods of measuring bullying were employed; one that measured bullying directly and one that measured behaviours indicative of 'being bullied' or of 'bullying others'. It was predicted that bullying would be more prevalent among juvenile than young offenders. It was also predicted that, in accordance with developmental theories of aggression, the younger age group, in this case juveniles, would report higher levels of physical and psychological/verbal bullying behaviour and lower levels of indirect bullying behaviour than the older age group - young offenders. There was partial support for these predictions with juveniles perceiving a higher extent of bullying and reporting more behaviours indicative of physical, psychological/verbal and overall direct forms of bullying than young offenders. This was only found, however, for behaviours indicative of 'being bullied' and not for those indicative of 'bullying others'. There were no differences found between juveniles and young offenders with regard to behaviours indicative of indirect bullying. The findings are discussed with reference to the environment in which bullying is taking place and suggests how developmental theories of aggression can be applied in such settings.

**Attachment****A TAXONOMY OF HUMAN AGGRESSION IN FIVE SITUATIONAL DOMAINS:  
PSYCHOLOGICAL, BIOLOGICAL, AND ENVIRONMENTAL PERSPECTIVES**

Paul F. Tremblay, Elaine Zibrowski & Kathryn Graham  
*University of Western Ontario, Canada*

Human aggressive behaviour is exhibited in a variety of contexts, in a variety of ways and for a variety of reasons. In this paper we examine the similarities and unique aspects of aggression across five situational domains: 1) aggression in the workplace, 2) driver aggression, 3) aggression in intimate relationships, 4) schoolyard bullying, and 5) alcohol-related aggression. We develop a taxonomy that identifies a number of properties of aggression within each domain including the nature of the relationship involved, pattern of aggression, and motives. The taxonomy also includes individual differences (sex, age, and personality traits) as well as situational, social, and environmental factors. We also discuss neurobiological, genetic, and evolutionary research in relation to these five domains of aggression.

**Attachment****AN EMPIRICAL INVESTIGATION OF THE RELATIONSHIP  
BETWEEN ATTACHMENT STYLE AND AGGRESSION IN ADULTS**

Jon Kear-Colwell & Annette Bliss  
*Griffith University, Australia*

Attachment theory has been studied extensively as a model for the aetiology for aggression. but almost all of the research has been conducted on pre-school children and adolescents. Empirical evidence suggests that the link between attachment insecurity and aggression has been observed from the earliest stages of development (Bowlby, 1969). For example, aggressive behaviour directed toward the primary caregiver has been associated with avoidant, anxious, and disorganised attachment patterns (Lyons-Ruth, 1996; Speltz, DeKlyen, & Greenberg, 1999; Vondra, Shaw, Swearingen, Cohen, & Owens, 2001; Wekerle & Wolfe, 1998). There is also evidence that insecure attachment is associated with disrupted interpersonal behaviour such as sexual offences against children (Sawle & Kear-Colwell, 2001). It was felt to be appropriate to look more directly at the relationship between attachment style and aggression in adults.

In this study the Aggression Questionnaire (AQ) (Buss & Perry, 1992) and the Attachment Style Questionnaire (ASQ) (Feeney & Noller, 1994) were given to a sample of 148 adult Australian subjects. Statistical analysis of the data found that there were significant relationships between insecure attachment and aggression, which were all in the predicted direction. In principal component analyses with oblique rotations three significant and stable factors were extracted. The first factor was labeled as Insecure Attachment, but Hostility from the AQ was significantly loaded on this factor. This would imply that the cognitive aspects of aggression such as feelings of injustice and jealousy were related to insecure attachment. In the structure matrix there was also evidence of a weaker significant link of insecure attachment to Anger, the affective component of aggression. There were no significant links in the principal component analyses between insecure attachment and aggressive behaviour, as measured by the Verbal Aggression and Physical Aggression sub-scales of the AQ. It was found that an Avoidant attachment style, in particular, was related to overall aggression. In a multiple regression analysis with Aggression as the dependent variable, R equaled 0.51 and was highly significant. Twenty six percent of the variance of aggression could be accounted for by the four measures of insecure attachment in the ASQ. The results strongly suggested a direct link between aggression and insecure attachment. These findings are consistent with earlier work on children and adolescents.

These results are discussed at a theoretical level but also in terms of their clinical implications for preventative work with young people. Another study (Kear-Colwell & Aspinall, 2001) that looked at the link between childhood abuse and aggression in adults is used to illustrate the preventative issues.

**Aggression Measurement****THE PSYCHOMETRIC PROPERTIES OF THE DIRECT AND INDIRECT AGGRESSION SCALE  
AMONG PORTUGUESE STUDENTS**

Patrícia Arriaga Ferreira, Francisco Esteves  
& Maria Benedicta Monteiro

*University Lusófona, Portugal*

Undergraduate students completed the Portuguese version of the Aggression Questionnaire (AQ), the Profile of Mood States (POMS), and the Direct and Indirect Aggression Scale (DIAS). Principal component analyses of DIAS, using Oblique rotation, yielded not the three original factors but a four-factor solution of this scale. The scales showed internal consistency and stability over time. This study also provides evidence for convergent and discriminant validity of DIAS.

**CONVERGENT VALIDITY OF A LABORATORY MEASURE OF AGGRESSION**

Patrícia Arriaga Ferreira, Andreia Poeira  
Francisco Esteves & Maria Benedicta Monteiro

*University Lusófona, Portugal*

This research examined the empirical validity of a laboratory measure of direct aggression. To test the relationship between self-reported measures of trait aggressiveness and the aggressive behavior, undergraduate students completed the Direct and Indirect Aggression Scale (DIAS), which was followed by a similar competitive reaction time task used by Anderson, Bushman and Colleagues (based on the Taylor aggression paradigm). Aggression Behavior was defined as the noise intensity and duration participants selected for the opponent to receive. The preliminary results of the study showed that noise intensity, delivered on the opponent, was statistically associated with DIAS total score and with the physical and verbal aggression subscales. There was also a relationship between noise duration and DIAS total score and physical aggression, providing evidence of convergent validity.

**Aggression Measurement****AUTONOMIC NERVOUS SYSTEM CORRELATES OF THE ROSENZWEIG PICTURE-FRUSTRATION STUDY**

Bruce H. Friedman &amp; Ben G. Pumphrey

*Virginia Polytechnic Institute and State University, USA*

Most models of frustration-aggression carry an implicit assumption that aggression is consistently negative or destructive. An alternative view is that aggression can be either positive/constructive (need-persistence) or negative/destructive (ego-defense), and this distinction intersects with response direction to delineate a specific typology of aggressive responses to frustration (Rosenzweig, S., 1941, *Psychological Review*, 347-349). The present study was based on this multifaceted view and examined physiological correlates of this aggression typology. Autonomic nervous system responses to frustration were considered in terms of categories derived from the Rosenzweig Picture-Frustration Study (P-F), a tool that assesses of both type and direction of aggressive reactions to frustration. Twenty-eight (14 male, 14 female) undergraduate subjects completed the P-F and then engaged in a frustrating mental arithmetic task for five minutes. Change scores between rest and task were calculated for skin conductance (SC), heart rate (HR), and mean successive differences of HR (MSD, a parasympathetic index of heart rate variability), and correlations were calculated between these change scores and P-F categories. Need-persistence was inversely related to MSD (i.e., decreased vagal withdrawal;  $r = -.41, p < .05$ ); ego-defense was positively associated with MSD (i.e., increased vagal withdrawal;  $r = .46, p < .05$ ). In terms of direction of aggression, extraggression (directed outward) scores were positively correlated with SC ( $r = .40, p < .05$ ) and MSD ( $r = .53, p < .005$ ), and negatively associated with HR ( $r = -.34, p < .07$ ). Intraggression (directed inward) was positively correlated with HR ( $r = .42, p < .05$ ), and negatively associated with SC ( $r = -.42, p < .05$ ) and MSD ( $r = -.49, p < .01$ ). These data suggest that the aggression-frustration categories from the P-F are associated with distinct autonomic nervous system response patterns.

**Aggression Measurement****PSYCHOPATHY AND AGGRESSION: THE IMPORTANCE OF THE TWO-FACTOR MODEL IN THE RELATION BETWEEN THE PSYCHOPATHY CHECKLIST-REVISED AND VIOLENCE**

Jennifer E. Vitale & Joseph P. Newman  
*University of Wisconsin-Madison, USA*

Research has consistently shown a relation between psychopathy assessed using the Psychopathy Checklist-Revised (Hare, 1991) and aggressive behavior. However, the PCL-R is composed of two correlated factors, and it is unclear if the relation between the PCL-R and aggressive behavior is due to relations between the callous, unemotional components of the psychopathy syndrome (PCL-R "Factor 1"), the impulsive, unstable lifestyle components (PCL-R "Factor 2"), or a combination of these components. Consistent with the suggestion that both of these components are essential to psychopathy (Lilienfeld, 1994), we hypothesized that violent crime would be predicted by the interaction of PCL-R Factor 1 and Factor 2.

Participants were 465 Caucasian and 619 African American males incarcerated in Wisconsin. Participants were drawn from all security levels. Psychopathy was assessed using the PCL-R (Hare, 1991). Violence data was collected in three ways: criminal records, self-reported antisocial behavior, and self-reported reactive-proactive aggression. Results of multiple regression analyses showed that, as predicted, among Caucasian participants, the interaction of Factor 1 and Factor 2 of the PCL-R was a significant predictor of aggressive and criminal behavior. Among African American participants the interaction of the two Factors did not predict aggressive and criminal behavior.

These results suggest that, among Caucasian offenders, the association between violence and the PCL-R is the result of an association between violence and the psychopathy syndrome as a whole, and not just an association with any single component of the syndrome. The results also suggest that there are important differences in how PCL-R psychopathy relates to violence across race.

**Aggression Measurement****DISENTANGLING FORM AND FUNCTION VARIANCE IN AGGRESSION VARIABLES: RELATIONS AMONG PURE AGGRESSION CONSTRUCTS, RESOURCE CONTROL STRATEGIES, AND PEER REGARD**

Patricia H. Hawley

*Southern Connecticut State University, USA*

The functions of aggression (i.e., instrumental, reactive) have not been explored independent of the forms they take (overt, relational). Instrumental and reactive aggression can be confounded by form variance by traditional measures. Form and function variance can be disentangled by carefully crafting scale items coupled with appropriate analyses (e.g., SEM; Little et al, 2000). To explore the relationships of pure aggression variables with other variables, a resource control perspective was adopted (Hawley, 1999), which suggests that prosocial and coercive behavior function for competitive access to resources. From this view, aggression can be associated with adaptation (Hawley, 2001).

Participants included 68 3.5-5 year olds. Teachers rated the children's forms and functions of aggression (which were then analytically disentangled) and the children's strategies of resource control. 'Liked most' and 'liked least' nominations were also obtained. In the total sample, all types of aggression (pure overt, relational, instrumental, and reactive) were positively correlated with coercive strategies of resource control. Relational and reactive aggressions were associated with prosocial control. Instrumental aggression was moderately positively correlated with liked most nominations and negatively correlated with liked least. Overt aggression was positively associated with liked least nominations. Correlations differed somewhat by gender.

Although coercive strategies are associated with all forms and functions of aggression, suggesting a maladaptive profile, some forms of competent behavior were also associated with aggression; suggesting an adaptive profile. For example, prosocial controllers tended to rely on relationally aggressive acts (and not overt). On the other hand, some forms of aggression showed consistent maladaptive patterns, while others were associated with positive outcomes. For example, overt aggression in boys and girls was associated with peer aversion while reactive aggression was associated with liked most nominations in boys.

The utility of using disentangled aggression constructs to examine both adaptive and maladaptive profiles of aggression and their association with different resource control strategies is discussed.

**Perinatal Risk Factors and the Development of Physical Aggression****EFFECTS OF PRENATAL STRESS ON EARLY AND ADULT DEVELOPMENT AND MATERNAL CARE IN MICE**

Leslie R. Meek

*University of Minnesota, USA*

When female mice are psychologically stressed during the final week of gestation, their offspring are lighter and shorter than animals born to non-stressed females. In addition, by 3 days after birth, significantly fewer stressed animals can rotate or right themselves, and by six days after birth, significantly fewer stressed animals can cling to or climb an inclined screen, or show the tail pull reflex. By day 9, significantly fewer stressed animals have teeth. In contrast, by day 12, significantly more stressed animals demonstrate exploratory behavior than non-stressed animals.

As adults, stressed animals are significantly slower than non-stressed animals to reach a hidden platform in the water maze on all trials, and this difference is due to stressed females being slower to find the platform than non-stressed females.

When stressed and non-stressed offspring are raised by females with dissimilar experiences to their own (non-stressed dams raising stressed pups and stressed dams raising non-stressed pups), maternal behavior is suppressed. Dams raising dissimilar pups groom and nurse their pups significantly less, are the slowest to retrieve their pups and are significantly less aggressive than control dams (stressed dams raising stressed pups and non-stressed dams raising non-stressed pups). These results indicate that stress not only affects the development of the pup, but also influences the maternal behavior of the dam, resulting in a reciprocal interaction of dam and pup behavior on pup development.

**Perinatal Risk Factors and the Development of Physical Aggression****LINKS BETWEEN ANTENATAL MATERNAL STRESS OR ANXIETY AND CHILD BEHAVIOUR**

Vivette Glover  
*Imperial College, UK*

T. O'Connor  
*King's College London, UK*

Jean Golding  
*University of Bristol, UK*

Animal research has shown that there are long term effects of antenatal maternal stress on the behaviour of the offspring. There has been very little equivalent research in man. We have tested the hypothesis that antenatal maternal anxiety predicts behavioural problems at age 4 years. The study was based on the Avon Longitudinal Study of Parents and Children (ALSPAC), a community-based longitudinal prospective study. Data were collected on multiple antenatal and postnatal assessments of maternal anxiety and depression, antenatal and obstetric risks, psychosocial risks, and children's behavioural/emotional problems (n=7,448). The analysis showed that late antenatal maternal anxiety, at 32 weeks gestation, predicted total behavioral/emotional problems in boys (OR=2.14, 95%CI=1.48-3.10) and girls (OR=1.88, 95%CI=1.31-2.69) after accounting for covariates. When covarying maternal anxiety up to 33 months postnatally, late antenatal anxiety continued to predict total behavioral/emotional problems in both boys (OR=1.56, 95%CI=1.02-2.41) and girls (OR=1.51, 95%CI=1.01-2.27) and hyperactivity/inattention in boys (OR=1.85, 95%CI=1.22-2.81).

We have also found, using the same cohort that maternal anxiety, with scores in the top 15%, at 18 weeks gestation, was associated with a significantly increased incidence of mixed-handedness in the child (OR=1.39, 95% CI 1.16-1.66, p = 0.001). The effects were independent of parental handedness, obstetric and other antenatal risks, and postnatal anxiety, and were similar for boys and girls. This result provides further evidence for fetal programming in humans. We suggest that antenatal stress or anxiety may cause alterations in brain development and morphology, which affect both laterality and a distinct range of behavioural problems in the child.

**Perinatal Risk Factors and the Development of Physical Aggression****OBSTETRICAL COMPLICATIONS AND VIOLENT DELINQUENCY:  
TESTING TWO DEVELOPMENTAL PATHWAYS**

Louise Arseneault,  
*King's College London, UK*

This study focuses on the interaction between specific obstetrical complications and early family adversity in predicting violent behavior during childhood and adolescence, in a sample of 849 boys from low socioeconomic areas of Montréal. Obstetrical complication data from medical records were used to create three scales using a non-linear principal component analysis followed by rotation. Family adversity and teacher-rated physical aggression were assessed when the boys were in kindergarten and self-reports of delinquency were collected when they were 17. Only among boys who grew up in high adverse familial environments, elevated scores on the Deadly Risk Situation scale of obstetrical complications (preeclampsia, umbilical cord prolapse, and induced labor) increased the risk of being violent both at ages 6 and 17. Moreover, this interaction partly accounted for the continuity between violence in childhood and adolescence. Interventions for young pregnant women from deprived environments and their babies are discussed in the light of these results.

**RACE AND CRIME: THE CONTRIBUTION OF INDIVIDUAL, FAMILIAL, AND  
NEIGHBORHOOD LEVEL RISK FACTORS TO LIFE-COURSE-PERSISTENT OFFENDING**

Alex R. Piquero  
*University of Florida, USA*

Terrie E. Moffitt  
*University of Wisconsin, University of London*

Brian Lawton  
*Temple University*

Race differences in criminal behavior have been detected via both official and self-reported protocols. In this study, we attempt to understand these differences within the context of an integrated individual, familial, and neighborhood model of life-course-persistent offending. Using recent theoretical frameworks outlined by Sampson and Moffitt, we employ data from the Baltimore portion of the National Collaborative Perinatal Project to study race differences in both etiological and outcome variables. Our results show that several variables help distinguish between white and nonwhite patterns of chronic offending, but that the differences appear to lie in the level of risk factors as opposed to the developmental processes among groups defined by race. In accord with Moffitt's biosocial hypothesis, we found that, among nonwhites, low birth weight met with adverse familial environments (measured at birth) predicted chronic offending by age 27/33. When the interaction was estimated across groups defined by race and neighborhood disadvantage (low/high), it was only predictive of chronic offending for nonwhites reared in disadvantaged neighborhoods.

**Perinatal Risk Factors and the Development of Physical Aggression****THE EFFECTS OF PRENATAL PROBLEMS, FAMILY FUNCTIONING AND NEIGHBORHOOD DISADVANTAGE  
IN PREDICTING LIFE-COURSE-PERSISTENT OFFENDING**

Michael Turner & Donna Bishop  
*Northeastern University, USA*

Studies investigating the link between individual-level risk factors and serious chronic violent (i.e., life-course-persistent) offending have explored the interplay between biological factors manifest early in the life course (i.e., pre- and perinatal factors) and childhood social factors (i.e., familial disadvantage). This empirical research is consistent with Moffitt's theoretical articulation suggesting that individuals who experience neuropsychological deficits and who are raised in disadvantaged environments have a greater propensity to begin offending early in the life course and to persist through adulthood. In addition, and perhaps more importantly, Moffitt suggests that these individuals have the highest propensity to engage in serious chronic violent offending. Using the National Longitudinal Survey of Youth, we extend previous work by investigating the additive and interactive effects of pre/perinatal complications (e.g., maternal alcohol use during pregnancy and smoking during pregnancy) and disadvantaged familial environments, within and across different neighborhood contexts on self-reported serious chronic violent offending. The theoretical and policy implications of this research are discussed.

**Bullying, Aggression and Conflict in Australian School Students: Research Informing Interventions****THE DEVELOPMENT OF A BULLYING VIDEO INTERVENTION FOR PARENTS OF YOUNG CHILDREN**

Rosalyn Shute, Alison Wotherspoon &amp; Phillip Slee

*Flinders University, Australia*

Given increasing recognition of the negative psychological effects of bullying, various intervention programs and materials have been developed in recent years. However, interventions for bullying behaviours of younger children have been given scant attention, despite the known importance of the early years for children's later development. There is evidence that bullying behaviours occur even in the preschool years, although adults may not consider it necessary to intervene at such an early age. Recognising the lack of attention paid to the younger age groups, the Australian Federal Government commissioned a team to review interventions for bullying in young children in Australia and to produce related educational materials. The role of the current presenters (two psychologists and a video producer who lectures in screen production) was to produce an evidence-based video on the issue of bullying in young children. This presentation explains how the team went about translating the available evidence about bullying in young children into a short video that would form a useful part of the total educational package. The process included: reviewing the evidence; identifying the purpose of the video, its audience and the messages to be conveyed; consulting with various stakeholders; and identifying an effective format. The result is an awareness-raising video which is expected to be available in junior primary schools, childcare centres and preschools throughout Australia for use by teachers, parents and others who care for young children.

**YOUNG TEENAGE STUDENTS' INTERPRETATIONS OF VIDEO PORTRAYALS OF SCHOOL BULLYING:  
THE RELATIONSHIP WITH ATTITUDES TOWARD BULLYING**

Phillip Slee, Nicola Sheldon, Rosalyn Shute &amp; Larry Owens

*Flinders University, Australia*

Video role-plays have the potential to play a powerful part in intervention programs because of their ability to reveal attitudes, raise consciousness and shift perspectives of viewers. Psychologists have focussed on children's information processing skills in the comprehension of television narratives while media theorists have focussed on textual analysis. Psychologists have also recognised the importance of children's identification with television characters in any attempt to influence their attitudes toward violence. From a constructivist perspective it is important to examine the meanings of the text for the target audience. Central to any interpretation of conflict are the issues of attribution, blame and responsibility. The focus of this study is not on whether dramatic representations can reduce peer violence. Rather, this study asks how students' experiences of and attitudes to school violence influence their interpretation of a video drama portrayals of school bullying. In stage one of the study, the attitudes of over 700 grade 8 and 9 students (aged between 13 and 15 years) were assessed using a questionnaire developed by Rigby & Slee (1993) to identify two groups - those who hold pro-bullying and those who hold pro-victim attitudes. In stage 2 of the study, the identified students were shown video portrayals of different forms of bullying. Then, focus groups were conducted to question the students regarding their attributions for blame and responsibility for the bullying displayed. Findings are presented regarding the relationship between student attitudes to bullying and their interpretations of the bullying episodes displayed on the video.

**Bullying, Aggression and Conflict in Australian School Students: Research Informing Interventions****SEX AND AGE DIFFERENCES IN AGGRESSION AND CONFLICT RESOLUTION AMONG ADOLESCENTS**

Larry Owens, Phillip Slee &amp; Rosalyn Shute

*Flinders University, Australia*

In recent years, the study of human aggression has broadened to include indirect (e.g., talking nastily about others, exclusion from the peer group) as well as direct forms (e.g., physical or verbal abuse). Recent research has provided data on sex and age differences in direct and indirect aggression where the peers have estimated amounts of aggression in children and adolescents. In the present study, data on sex and age differences in different forms of aggression were examined where the data were collected by self estimates. In addition to work on amounts and nature of aggression, it is also important to consider ways in which adolescents usually resolve their conflicts. The present study examined differences in male and female conflict resolution styles. The sample included 700 males and females from grades 8 to 10 (ages ranging from 13 to 16 years) in a metropolitan secondary school in Adelaide, South Australia. A modified version of the Direct and Indirect Aggression Scales (DIAS, Bjorkqvist, Lagerspetz & Osterman, 1992) and a conflict resolution questionnaire drawn particularly from the work of Feldman and Gowen (1998) were administered. The results assist in our understanding of the forms of aggression being experienced by adolescents and their usual strategies for dealing with conflict. Implications of these findings for reduction of aggression are discussed.

**Developmental Roots of Violence Perpetrators****EOAB (EARLY ONSET ANTISOCIAL BEHAVIOR)  
AND PSYCHOLOGICAL INTIMIDATION OF DOMESTIC PARTNERS**

Keith McBurnett &amp; Linda Pfiffner

*University of California at San Francisco, USA*

EOAB (Early-Onset Antisocial Behavior) is associated with a variety of negative outcomes. We investigated how anti-social developmental course, family history of domestic violence, and substance use were related to domestic violence in 66 adult males in diversion programs.

Substance use and lifespan antisocial personality were robust predictors of verbal and moderate physical domestic abuse. Violence in the family of origin was associated with abuse when tested alone, but failed to exhibit unique association with abuse when other predictors were taken into account. EOAB appears to be associated with extreme rates of psychological and moderate physical abuse of domestic partners".

**Developmental Roots of Violence Perpetrators****MOTHERS VERSUS FATHERS: HOW PARENT GENDER MODERATES THE ASSOCIATIONS  
BETWEEN PARENTS' DEVIANT PARENTING AND PSYCHOPATHOLOGY  
AND THEIR ADHD CHILDREN'S COMORBID BEHAVIOR DISORDERS**

Linda Pfiffner &amp; Keith McBurnett

*University of California at San Francisco, USA*

Attention Deficit/Hyperactivity Disorder (ADHD) in childhood is a risk factor for the development of Conduct Disorder and chronic aggressive behavior. Since ADHD typically presents very early in life (before age 7), it would be helpful to know more about which children with ADHD progress to CD.

Family factors that have been reported to increase the risk of Conduct Disorder include (a) parent psychopathology, presumably working in part via genetic transmission of risk for antisocial behavior, and (b) deviant parenting processes. We were interested in whether these factors, independently or in combination, predicted the behavior disorders of Oppositional Defiant Disorder and Conduct Disorder among children selected for having ADHD. We were also interested in whether these factors predicted risk for problem behavior differently if they occurred primarily in mothers versus fathers.

In a cross-sectional study, 149 clinic-referred boys and girls and their parents were diagnosed using structured and semi-structured interviews. Parents completed self-report questionnaires of parenting practices. Logistic regression analyses indicate greater odds for Conduct Disorder as a function of maternal parenting and paternal Antisocial Personality Disorder. Oppositional Defiant Disorder was predicated by parental and maternal parenting, but not parent psychopathology.

These findings suggest that poor parenting on the part of either parent, but not parent psychopathology, is correlated with Oppositional Defiant Disorder in children who have ADHD. On the other hand, paternal Antisocial Personality Disorder and poor maternal parenting appear associated with the more serious problem of Conduct Disorder.

Among the implications of this finding is that treatment efforts to prevent emergence of Disruptive Behavior Disorders should be focused on parenting for mothers and fathers of children with ADHD, particularly when the child's biological father exhibits antisocial behavior".

**Childhood Aggression****RELATIONAL AGGRESSION BETWEEN SIBLINGS IN EARLY AND MIDDLE CHILDHOOD**

Kirstin Stauffacher, Ganie B. DeHart, Sarah L. Keats  
Kathleen M. Raimer, Chae Lee & Amanda K. Landis

*State University of New York, USA*

Differences between the ways girls and boys use relational aggression have been found in peer relationships, but little is known about whether those same gender differences exist in sibling relationships. The relationship between siblings provides an important context for social interaction throughout childhood, and it would follow that it would also provide an important context for practicing and learning relational aggression. As part of a longitudinal study examining the relationships between siblings and between friends in early and middle childhood, we examined semi-structured sibling play sessions for instances of relational aggression. We looked at both mixed-sex and same-sex sibling pairs when one of the siblings was age 4 and again when the target child was age 7.

As predicted, girls seem to use more relational aggression with their siblings than do boys. The boys we have looked at do use it sometimes, but their behaviors are qualitatively different than the girls'. The boys use threats to tattletale to parents or researchers more often than girls do. The girls we have observed often use ignoring, snubbing, and terminating the interaction. The composition of the dyad also contributes to who does the aggressing. Girls are more likely to use relational aggression when they are the older sibling in a dyad, whereas boys are more likely to use it when they are the younger sibling.

**REGULATION PROCESSES OF RESPONSE INHIBITION IN ATTENTION-DEFICIT HYPERACTIVITY DISORDER (ADHD) CHILDREN WITH AND WITHOUT DISRUPTIVE COMORBIDITY (DIS): OPPOSITIONAL DEFIANT DISORDER (ODD) OR CONDUCT DISORDER (CD)**

Yong-Liang Ge, Philippe Robaey & Gilles Pelletier

*Université de Montréal, Canada*

This study investigated brain inhibitory processes by using event-related potentials from 32 electrodes. In a mixed Go/No-go task paradigm, 15 pure ADHD, 12 ADHD/DIS and 17 normal children were instructed to respond to Go, but to inhibit responding to No-go stimuli. The Go/No-go task was performed either before or after a stimulus-response compatibility task. Control children had a stable performance, but ADHD/DIS children showed a significant decrease in correct response when the task was second, together with longer reaction time, while ADHD children showed a significant increase in correct response. Larger fronto-central negative waves (N2a and N2b) for the No-go than Go stimuli indexed frontal and motor inhibitory processes. Controls who did the task second showed an anterior-frontal topography of the N2a on the right hemisphere from 280 to 380 ms, but not ADHD/DIS children. In addition, controls displayed this anterior-frontal topography to No-go stimuli specifically in the 280-330 ms interval, but ADHD children did not. With regard to the N2b, controls who did the task second exhibited larger amplitude to No-go than to Go trials across electrodes. Clinical children failed to show this inhibition effect, but from 450 to 600 ms for the ADHD/DIS children, and only in the 550-600 ms interval for the ADHD children. These results suggest that similar problems in self-regulation of response inhibition, involving frontal and motor regions, occur in both ADHD/DIS and ADHD children. However, these problems are more pervasive in the ADHD/DIS group.

**Childhood Aggression****EMOTIONAL AND BEHAVIORAL CORRELATES OF REACTIVE AND PROACTIVE AGGRESSION IN CHILDREN**

Angela Scarpa, Jimmy D. Hurley & Michiyo Hirai  
*Virginia Polytechnic Institute and State University, USA*

This study tested hypotheses that reactive aggression is more likely than proactive aggression to be related to heightened emotional, attention, and social problems and poor family environment. 69 (55 boys, 13 girls, 1 unreported) 7-15 year-old clinic referred children were rated by self, teacher, and/or parent on reactive/proactive aggression, anxiety, fears, depression, behavior problems, and family environment. Partial correlations indicated that reactive aggression was uniquely related to increased parent and teacher ratings of internalizing problems (i.e., somatic complaints, and anxiety/depression), parent-rated thought problems, and teacher-rated social difficulties. Proactive aggression, on the other hand, was uniquely related to increased parent and teacher ratings of delinquent behavior, parent-rated social difficulties, and teacher rated problems with attention and aggression, and to reduced self-rated anxiety. No significant unique relationships were found with family environment. The results partially supported the hypotheses, particularly for the relationship of reactive aggression with social difficulties and anxious emotional problems, whereas proactive aggression was more distinctly correlated with delinquent behavior and lower anxiety.

**AGGRESSIVE BEHAVIOR PERCEIVED BY TEACHERS AND COPING STRATEGIES AT SCHOOL:  
A STUDY WITH VICTIMS AND NON VICTIMS OF DOMESTIC VIOLENCE**

Carolina Saraiva de Macedo Lisboa  
*Universidade Federal do Rio Grande do Sul, Brazil*

The present study aimed to compare two groups of children, victims and non victims of domestic violence, about the coping strategies and the aggressive behavior shown at school. The participants were 87 children, from both sexes, 49 victims of domestic violence and 38 non victims, aged seven to twelve years old. The victimized children reported higher frequency of problems with teacher's verbal aggressions and they used physical aggressions as coping strategies more than the non victimized children did. The non victims children seemed to look after other's support as coping strategies to deal with problems they have with their classmates. The results of the Teacher's Perception Scale of School Children Aggressive Behavior showed that the victims of domestic violence are perceived as more aggressive than the others and that the boys are perceived as more aggressive than girls. This data was discussed according to the Ecological Human Development Theory. Studies around concepts of coping strategies related to aggressive behavior, with emphasis in context's aspects and hierarchical relationships, and aggressive behavior of victimized children can clarify this aspects and support intervention programs to promote resilience and healthy adaptation of these children at school.

**Childhood Aggression****CRYING IN 2-YEAR-OLD INFANTS UNDER THE SITUATION OF FREE PLAY WITH AGEMATES**

Tetsuhiro Minami, Yuko Akimoto, Yasuo Kojima

Jun Yasuda &amp; Toshihiko Hinobayashi

*Osaka University, Japan*

Infants cry and can cry very easily. Crying of infants is normally observed at the daily life. Crying of newborns is important for changing from their own physiological needs to social interactions with caregivers. At the same time, infants resolve by crying conflict, competition, or fighting occurred at social play. The purpose of the research is to examine when 2-year-old infant cry, how the crying stops or ends, and what kind of relationship between social play and crying is. Observations were conducted for 13 boys and 13 girls whose average age was 2.7 years, ranging 2.3-3.2 years. Most crying resulted from fighting with physical attack and competition with other agetates for an object such as bricks, and crying resulted from quarrel was more observed in elder infants and in more girls than boys. Once an infant cried, he/she sometimes approached the caregivers. Especially, the elder infants approached the caregivers to tell about something happened there just before. Ending or stopping of crying were by caregiver's care or by themselves. The results suggest that crying is the most important ways to solve conflict, competition, and fighting for 2-year-old infants whose language does not fully develop, and that crying is important for studying the social development of infant.

**The Development of Aggression and Affiliation: the Role of Play Fighting**

Sergio Pellis  
*University of Lethbridge, Canada*

There is more to the development of aggression than becoming good at fighting; it also involves learning to pick the fights that can be won. To do this, an animal must learn how to probe and assess another animal's ability and willingness to fight. For some species, like the rat, playful fighting is often used for this purpose. The advantage of this tactic is that the challenger can probe its partner for weakness, yet, unlike in a serious fight, the challenger still has the opportunity to use affiliation to de-escalate the encounter if a mistake is made. During post-weaning development in rats, when play fighting occurs at a high frequency among littermates, the content of such play is modified in a way that is consistent with the acquisition of experiences suitable for refining the skills needed to assess social competitors.

**Trajectories of Physical Aggression in Pre-School Children****PREDICTING KINDERGARTEN PEER STATUS FROM TODDLER AND PRESCHOOL BEHAVIOR PROBLEMS**

Susan D. Calkins &amp; Susan P. Keane

*University of North Carolina at Greensboro, USA*

The aim of this study was to investigate the longitudinal outcomes in the peer domain that are associated with early aggression and problem behavior. Toddler and preschool problem behavior were examined in a sample of one hundred twenty-two children across the toddler, preschool and kindergarten years. The sample was recruited when the children were two years of age and consisted of both aggressive and non-aggressive children. Measures of problem behavior and emotional and social functioning were derived from parent, laboratory and teacher observations. Peer social preference was assessed in the children's kindergarten classrooms using standard sociometric techniques. Results indicated that multiple toddler and preschool measures, including level of problem behavior, defiance, aggressive behavior, social skills, and emotional regulation were predictive of peer liking in kindergarten. However, all of these relations were mediated by fighting, sharing and sneaky behavior in kindergarten as reported by peers. For boys versus girls, fighting versus sneaky behavior in kindergarten was predicted by both aggressive behavior in preschool and by problem behavior in toddlerhood. These results indicate that, for some children, behavior with peers is influenced by both current functioning and by very early behavioral difficulties.

**Trajectories of Physical Aggression in Pre-School Children****PREDICTORS OF HIGH LEVEL PHYSICAL AGGRESSION FROM 17 TO 42 MONTHS AFTER BIRTH**

Daniel S. Nagin, *Carnegie-Mellon University, USA*  
Richard E. Tremblay, *Université de Montréal, Canada*  
Jean R. Séguin, *Université de Montréal, Canada*  
Mark Zoccolillo, *McGill University, Canada*  
Michel Boivin, *Université de Montréal, Canada*  
Daniel Pérusse, *Université de Montréal, Canada*  
Christa Japel, *Université de Montréal, Canada*

High levels of aggression in school age children are a precursor of juvenile delinquency, substance abuse, accidents, depression, suicidal behavior, spouse abuse, and neglectful and abusive parenting. Surprisingly, few studies have investigated the origins of aggression in the preschool years. The objective of this study was to identify antecedents of high level physical aggression in early childhood for the purpose of better understanding the developmental origins of physical violence, and to identify targets for preventive interventions. The analysis was based on a longitudinal study of 572 newborns from 5 to 42 months of age from the Canadian province of Quebec. The study related the frequency of physical aggression as rated by mothers at 17, 30 and 42 months of age with parents' antisocial behavior before the end of high school, parents' level of education, mother's age at birth of target child and of first child, mother's smoking and drinking during pregnancy, income level at birth, mother's depression at birth, number of siblings in household at 5 months of age, parents' separation at birth, family functioning at 5 months of age, subject's sex and temperament at 5 months of age, mother's parenting behavior at 5 months of age.

We identified three different trajectories of physical aggression between 17 and 42 months: high level aggression, moderate level, and low level. Multivariate logit regression was used to examine the capacity of the risk factors to distinguish membership in the high physical aggression trajectory group controlling for the levels of the other risk factors. Best predictors before or at birth were having young siblings (OR = 4.00; 2.2, 7.4), mothers with high levels of antisocial behavior before the end of high school (OR = 3.1; 1.1, 8.6), mothers who started having children early (OR = 3.1; 1.4, 6.8), families with low income (OR = 2.6; 1.3, 5.2), and mothers who smoked during pregnancy (OR = 2.2; 1.1, 4.1). Best predictors at 5 months of age were mothers' coercive parenting behavior (OR = 2.3; 1.1, 4.7) and family dysfunction (OR = 2.2; 1.2, 4.1).

**Trajectories of Physical Aggression in Pre-School Children****DEVELOPMENTAL FOUNDATIONS OF EXTERNALIZING PROBLEMS IN YOUNG CHILDREN:  
THE ROLE OF EFFORTFUL CONTROL**

Sheryl L. Olson, Arnold J. Sameroff  
David C. Kerr & Nestor L. Lopez

*University of Michigan, USA*

Recent research has shown that serious externalizing problems can be identified in the toddler and preschool years, and that individual differences in externalizing behaviors persist at moderate levels across the transition from early to middle childhood. However, difficulties with the control of aggression and impulses are extremely common during the preschool years, reflecting, in part, rapid changes in the normal establishment of self-regulatory competence. Not surprisingly, approximately half of all preschool children identified as highly aggressive, inattentive, and/or impulsive will desist in their problem behavior. Thus, there is a compelling need to identify developmental factors in early childhood that are associated with persistent externalizing problems.

The construct of effortful control, a temperament trait that is believed to regulate negative emotional responding and impulsivity, may provide one important developmental context for understanding the origins of persistent externalizing behavior. We hypothesized that toddlers with early onset conduct problems would manifest lower levels of effortful control than others. Participants were 181 3-year old children (85 girls) whose families were enrolled in a larger longitudinal study of the developmental and social origins of childhood conduct problems. As predicted, both behavioral and maternal report measures of child effortful control were negatively associated with externalizing problem ratings contributed by mothers, fathers, preschool teachers, and laboratory examiners. These relationships remained intact when other relevant measures of child temperament and executive functioning were controlled for.

**DEVELOPMENTAL TRAJECTORIES OF OVERT CONDUCT PROBLEMS AND ADHD FROM AGES 2 TO 10**

Daniel Shaw, Eric Lacourse & Daniel Nagin  
*Carnegie Mellon University, USA*

Most prominent theories of early-starter trajectories of antisocial behavior emphasize the significance of the co-occurring pattern of conduct problems (CP) and hyperactivity (ADHD) (Moffitt, 1990). Although there is widespread agreement that the co-occurrence of these two sets of behaviors are highly predictive of serious forms of later antisocial behavior, there is little data that has traced the probability of comorbidity CP and ADHD longitudinally, particularly beginning in early childhood. In the present study, semi-parametric mixture modeling will be used to generate independent trajectory groups for CP and ADHD, identify probability of membership in each group, and calculate the joint probability of membership in trajectory groups across behaviors from ages 2 to 10. Risk factors associated with a course of persistent CP and/or ADHD will also be examined, including maternal depression, rejecting parenting, child IQ, and child inhibition. The analysis is based on a sample of 310 low-income boys from the Pitt Mother & Child Project, assessed when children were age 2, 3.5, 5, 6, 8, and 10 years of age.

**School Interventions to Reduce Bullying: What Works and Why?****AN OVERVIEW OF ANTI-BULLYING INTERVENTIONS IN SCHOOLS**

Peter Smith

*University of London, UK*

School bullying is known to be a world-wide problem in industrialised societies, that affects a significant minority of pupils (Smith & Brain, 2000). Being a victim of persistent bullying is known to be associated with depression, low self esteem and anxiety (Hawker & Boulton, 2000), and those who bully others persistently may be set on a course of aggressive and antisocial behaviour after school.

Large-scale school-based interventions against bullying have a long history. This first paper in the symposium will review the work up to 1994. This period starts with the Norwegian nationwide anti-bullying campaign of 1984, the first of its kind. The campaign was monitored for its effects in Bergen, by Olweus (1993); and in Stavanger, by Roland (1989, 1994). Olweus reported reductions in bullying of some 50% over a 2 year period, whereas Roland reported virtually a nil effect over 3 years. Reasons for the difference in outcomes will be discussed, particularly the fact that Olweus was developing his Anti-Bullying Program during this period (to supplement the activities in the nationwide campaign, which Roland monitored without additional intervention).

Following the work in Norway, intervention projects were carried out in England. The most well-known was the Sheffield Project, from 1991-1993. This was inspired by the Bergen project but also differed in various ways, which will be summarised. The outcomes, while promising in some respects, did not achieve the level of success of the Bergen project, with reductions in bullying of around 15-20%.

This paper will recount the history of these projects, their characteristics and outcomes, and will lay the ground for considering the results of other large-scale school based intervention programs, carried out over the last seven years.

**School Interventions to Reduce Bullying: What Works and Why?****A CANADIAN ANTI-BULLYING INTERVENTION: CONSIDERING CHANGE**

Debra Pepler

*York University, Canada*

Wendy Craig

*Queen's University, Canada*

Amy Yuile

*York University, Canada*

This paper describes a three-year evaluation of an Anti-Bullying Program conducted in elementary schools in Toronto Canada. The multilevel intervention, adapted from Olweus' Bully/Victim Program in Norway was implemented at the school, classroom, peer, and individual levels. Three schools were involved in the formal evaluation which comprised self, peer, teacher and parent questionnaires. At two of the schools, naturalistic observations were conducted on the playground and in the classroom to assess changes in bullying and aggression. Evaluation data will be described at each of the levels of the systemic model of intervention to address problems of bullying and victimization. The extent of implementation varied by schools, however, there were significant changes at many levels of the program within each school. The observational data show corresponding decreases in the rates of bullying and victimization on the playground and in the classroom. In general, the data indicate that over the course of the anti-bullying intervention, there were changes in children's bullying and victimization experiences, but there were few changes in peer and teacher interventions. A focus in this paper will be on the individual and systemic factors related to change throughout the program. In the discussion, we describe the challenges and pitfalls of conducting a school based intervention program, but also about the advantages of developing a shared perspective on and response to bullying.

**School Interventions to Reduce Bullying: What Works and Why?****OUTCOME OF AN ANTI-BULLYING INTERVENTION IN FLEMISH SCHOOLS**

Veerle Stevens, Paulette Van Oost & Ilse De Bourdeaudhuij  
*Ghent University, Belgium*

This paper examines the evaluation of a school-based anti-bullying intervention programme in Flemish schools. The Norwegian anti-bullying intervention was considered to be a good model because of its positive outcomes on bullying and victimisation. In line with this programme, the Flemish intervention consists of three modules that focus on the social system (adults and peers) as well as on students directly involved in bully/victim problems. The first module deals with the intervention in the school environment, including the development of an anti-bullying policy; the second module deals with curriculum based activities for the peer group, based upon a social cognitive perspective; the last module focuses on help for students directly involved in peer aggression, either as a bully or as a victim. Three hypotheses were included in the evaluation study. First, it was expected that the Flemish anti-bullying intervention has been effective in reducing levels of bullying and victimisation. Specific attention was also given to the relationship between outcome findings and external support for schools during programme implementation. Secondly, it was hypothesised that the programme has been effective in changing peers' attitudes and behaviour towards peer aggression and victimisation. Finally, the study also intended to examine the relationship between programme implementation and programme effectiveness. For this study, an experimental pre-test/post-test design was used which included a control group. A total of 24 primary and secondary schools participated in this study. Students ranged in age from 10 to 16 years. The findings regarding the effects on bullying and victimisation showed a mixed pattern of positive changes in primary schools and zero outcomes in secondary schools. For secondary schools, positive outcomes were observed on peers' attitudes and actual rates of intervention in bully/victim conflicts. The results will be presented into more detail and discussed in relation to further programme development.

**School Interventions to Reduce Bullying: What Works and Why?****SUCCESSFUL INTERVENTION AGAINST SCHOOL BULLYING USING AN ECOLOGICAL APPROACH:  
RESULTS FROM THE SAVE PROJECT**

Rosario Ortega & Rosario Del Rey  
*Universidad de Sevilla, Spain*

In the SAVE Project, we have proposed an educational intervention model, starting with ecological analysis, which goes further than the personal perspective, attempting to uncover the system of rules, values, feelings and behaviours which lie behind bullying in all its forms.

The SAVE model proposes, as a starting point, the design of an educational project about inter-personal relationships in two dimensions: the dimension of coexistence and the dimension of activity. These two linked dimensions give us a vision of the social, psychological and academic reality of the schools as real coexisting communities where we learn not only what is planned through the curriculum, but also what it does not show.

The concrete programme developed in each school is designed by the teacher team during a self-training process for the educational innovation against school bullying. For this, the external counselling and the experiences and resources sharing have been important.

This model has been developed during 3 academic courses between 1996 and 1999 in 10 school of primary and secondary compulsory education. For the evaluation, we have used the Ortega, Mora & Mora-Merchán Questionnaire (1995) in the pre-test and post-test in 5 SAVE school and post-test in 3 control school. Despite it we have included in the post-test three questions about the perception of teacher actions by pupils. The level of bullying events decrease comparing control and experimental, and pre-test and post-test. But we can say that other subjects around the problem have changed, we will discuss it during the symposium. Although we are satisfied with the evaluation process, we are conscious that it can be improved and we will talk about it in the symposium.

**School Interventions to Reduce Bullying: What Works and Why?****ANTI-BULLYING INTERVENTION IN FINLAND: IMPLEMENTATION OF THE PROGRAM  
AND ITS EFFECTS ON ATTITUDES, CLASSROOM NORMS AND PARTICIPANT ROLE BEHAVIORS**

Christina Salmivalli, Ari Kaukiainen & Marinus Voeten  
*University of Turku, Finland*

The Finnish intervention project was based on the "participant role approach, a view of bullying as a group process in which bystanders often encourage the bullying or silently witness it, while little support is given to the victim. The aim of the project was to accomplish and study changes not only in the frequencies of bullies and victims, but in the whole group, in terms of classroom norms related to bullying and participant roles taken on by students. The intervention was carried out in 48 school classes (grade levels four, five, and six, i.e. 9-10, 10-11, and 11-12 year old students) from 16 Finnish schools. Control data were gathered from 24 classes from randomly selected schools. While individual-, class-, as well as school-level interventions were included in the program, the emphasis was on curriculum-based, class-level interventions. The interventions were carried out by class teachers who attended a one-year training course. The evaluation of the project includes 1) comparisons between changes in self- and peer-reported victimization in project and control classes, 2) "time-lagged comparisons between age-equivalent groups" (all from the project schools) regarding different types of observed and experienced bullying, anti-bullying attitudes, classroom norms related to bullying, and students' participant role behaviors in bullying situations, as well as 3) evaluation of the degree of implementation of the program, and its relation to the results gained.

**School Interventions to Reduce Bullying: What Works and Why?****PREVENTION OF BULLYING IN KINDERGARTEN IN SWITZERLAND**

Françoise D. Alsaker & Stefan Valkanover  
*University of Bern, Switzerland*

The development of the Bernese Program against Victimization in Kindergarten and Elementary School was based on well-known principles used in school programs against bully/victim problems (Olweus, 1993; Sharp & Smith, 1992) and in various programs based on social-cognitive skills. The program was implemented in eight kindergartens. A pretest-posttest design with a control group was used to evaluate its effects. The kindergartens in which the program was used were called intervention kindergartens; another eight kindergartens belonged to the control group.

The basic principle of the prevention program was to enhance teachers' capability of handling bully/victim problems. Kindergarten teachers in the intervention group were offered an intensive focused supervision for approximately 4 months. In eight meetings, issues central to the prevention of bullying were addressed. Within the 2 or 3 weeks between meetings teachers were encouraged to work practically on the issues discussed and to implement some specific preventive elements. An overview of the meetings will be given in the presentation.

A first positive finding was that the program had been implemented in such a way that the children were aware of it. Also, in the control group there were increases in all types of victimization, whereas physical victimization and isolation decreased in the intervention group. The number of children nominated as victims decreased with 15% in the intervention group, whereas an increase of 55% was observed in the control group.

Our results indicated some positive effects of the prevention program, but they also demonstrated how difficult it is to measure changes in groups of children and teachers who have been sensitized to detect the problems researchers want to reduce.

**Young Offenders****DOES SOCIAL ANXIETY MEDIATE MALEVOLENT AGGRESSION IN VIOLENT YOUNG OFFENDERS?**

Jane Clarbour & Derek Roger  
*University of York, UK*

Prospective longitudinal research provides empirical evidence for the association between trait aggression and undercontrolled temperament in early childhood. Much of this research is based upon clinical judgment or informant ratings (e.g. DSM-IV; CBCL4/18). The Emotional Behaviour Scale (EBS - Clarbour & Roger, 2000), provides a new self-report index of adolescent emotional responsivity, and comprises three sub-scales entitled social anxiety (SA), malevolent aggression (MA), and social self-esteem (SSE). The SA and MA scales are statistically orthogonal, and evidence from samples of school children has shown that they are related to internalising and externalising problems respectively. Extensive validation studies have shown that SA is highly correlated with measures of prosocial behaviour and empathy, particularly for boys, and malevolent aggression is highly correlated with measures of antisocial behaviour. Subsequent research has shown that MA is predictive of placement on Governor's report in samples of male juvenile and young offenders. Furthermore, offenders with scores in the high malevolent aggression/low social anxiety quadrant were found to have commenced offending earlier and had a more violent criminal history than their peers, even though there was no relationship with measures of impulsivity for this group. The implications of these findings will be discussed in the context of interventions for young offenders, particularly aggression control programmes.

**PRE-POST EFFECTS OF SAFER BARS TRAINING TO REDUCE AND BETTER MANAGE AGGRESSION IN LICENSED PREMISES**

Kathryn Graham, Jennifer Jelley & John Purcell  
*Centre for Addiction and Mental Health, Canada*

Although developmental factors are important in the genesis of aggression, there is considerable evidence that, in addition to personal characteristics, both the effects of alcohol and environmental factors contribute to aggression in social drinking situations (see Bushman, 1997; Graham et al., 1998; Ito et al., 1996). Bars have been identified as high risk locations for aggression (Stockwell et al., 1993), especially for young males (Archer et al., 1995). Because staff play a key role in barroom aggression (Wells et al., 1997), the Safer Bars program was developed to train bar staff in ways to minimize aggression when dealing with problem behavior (Braun et al., 2000). The 3-hour training uses group discussion and role play to address: the escalation of aggression and the importance of intervening early; assessing the number of staff required to handle a situation; working as a team to control anger while dealing with difficult patrons; nonverbal and verbal techniques; dealing with intoxicated persons; planning a coordinated response; and legal liability. The training was pilot-tested in about 20 bars (see Chandler Coutts et al., 2000) as part of the development process. In August, 2000, a randomized control trial of the effectiveness of the Safer Bars program was begun with the first outcome results from this trial expected in 2002. The present paper reports the results of the pre-post training evaluations completed with 24 bars as part of the intervention phase, including the extent of positive changes in knowledge, attitudes and behavioral intentions among bar staff following the training and consumer satisfaction with different components of the training.

**Young Offenders****CHANGING CRIMINOGENIC RATIONALIZATIONS IN MALE JUVENILE OFFENDERS:  
THE INFLUENCE OF LOCUS OF CONTROL**

Nathan Michael  
*Cornell-Abraxas Corrections, USA*

The effects of a 15-week residential cognitive-behavioral treatment program on the locus control and criminogenic rationalizations in a sample of 47 male juvenile offenders was examined. Results indicated that participants' post-treatment locus of control (N-SLCS scores) and self-serving cognitive distortions (total HIT scores) were significantly lower than pre-treatment scores, thus suggesting an enhanced internal locus of control and a decreased endorsement of criminogenic rationalizations. A detailed analysis of the HIT's subscales revealed that post-treatment scores on all four cognitive distortion type subscales (self-centered, blaming others, assuming the worst, and minimizing/mislabeling) and all four behavioral referent subscales (opposition defiance, physical aggression, lying, and stealing) were significantly lower than pre-treatment scores. Thus, indicating a broad treatment effect on the different types of criminogenic cognitive content and the types of antisocial behaviors to which such attitudes refer. Furthermore, treatment-related changes in N-SLCS scores proved to be a significant predictor of treatment-related changes in total HIT scores, even when controlling for the influence of participant demographic variables such as age, grade level, socioeconomic status, offense history, parent's marital status, and race/ethnicity. The last finding indicates that altering a cognitive process/style such as locus of control may change how a person regularly perceives and processes information about his/her social environment-which, in turn, may influence the specific types of self-statements, attitudes, and beliefs that person is able to endorse. Therefore, it may benefit clinicians in the business of modifying the cognitive content of offenders to also address possible underlying cognitive processes such as locus of control.

**RELATIONSHIP BETWEEN TESTOSTERONE AND CORTISOL LEVELS  
AND AGGRESSION VARIABLES OF INCARCERATED ADOLESCENTS**

Radik M. Masagutov  
*Bashkir State Medical University, Russia*

This research deals with clinical-biochemical correlations between testosterone and cortisol levels and aggression variables of adolescent offenders. Bass-Durkee Hostility Inventory and Hand Test were used for examining 91 young offenders aged 15 - 20. As a result of cluster analysis of the obtained data three groups (clusters) of adolescents were singled out. Young men of the 1st group (N=29) with the high level of testosterone and low level of cortisol held the highest status in the reformatory hierarchy and had the average aggression rate. Young men of the 2nd group (N=35) with the low level of testosterone and average level of cortisol held the average positions in the reformatory hierarchy, but at that had the highest aggression rates. Young men of the 3rd group (N=27) with the average level of testosterone and high level of cortisol were on the lowest steps of the reformatory hierarchy and had the lowest rate of overt aggression. The obtained data testify that there is a positive correlation between testosterone level and proactive ("controllable, instrumental, predatory") aggression, and also there is a negative correlation of cortisol level and physical aggression tendency of male juvenile offenders. High aggression of some young offenders was mostly reactive ("impulsive-hostile-affective") and was not connected with the hormone status.

**Young Offenders****SELF-ESTEEM DEVELOPMENT AMONG JUVENILE OFFENDERS INSIDE AND OUTSIDE PRISON**

Werner Greve &amp; Dirk Enzmann

*University of Hildesheim & Criminological Research Institute, Germany*

The recovery from self-esteem damage caused by the experience of incarceration and the stabilizing role of accommodative coping resources among incarcerated young male offenders is investigated using a longitudinal approach with three occasions of measurements (begin of prison term, two months later, end of prison term). Data of 211 participants with a complete set of measurements were analyzed employing multilevel modeling. Results show that self-esteem increases during imprisonment. Moreover, this increase in self-esteem depends on the individual competence of accommodative coping: The increase in self-esteem is earlier and faster for high accommodative individuals. However, this increase can be interpreted as a recovery effect, because a control group of juvenile offenders on probation shows no change of self-esteem during one year but rather remain a level of self-esteem similar to the level of incarcerated young males at the end of their prison term. These findings are discussed with respect to their implications for the future social behavior and integration of former prisoners after release.

**Young Offenders****A CONDITIONAL DEVELOPMENTAL PROCESS MODEL OF IN-SCHOOL WEAPON CARRYING**

Jenny Isaacs, Noel A. Card, &amp; Ernest V. E. Hodges

*St. John's University, USA*

The purpose of this study was to propose and evaluate a conditional developmental process model of in-school weapon carrying that posits that aggression will lead to carrying weapons under threatening environments. Social-cognitive processes were hypothesized to mediate this conditional relationship.

Participants were 103 primarily Latino, 6th and 7th grade boys (girls were excluded from analyses due to lack of variability in weapon carrying). Aggression was assessed by peer nominations and self-reports were used to assess: 1) weapon carrying, 2) social cognitions about weapon carrying, and 3) victimization.

Using multiple regression, it was found that aggression and victimization interacted to predict weapon carrying, such that the relationship between aggression and weapon carrying was maximized when children were more victimized and minimized when children were less victimized. Aggression and victimization also interacted to predict children's self-efficacy for weapon carrying. Moreover, self-efficacy was found to be significantly related to weapon carrying. To test for mediation, the procedures recommended by Baron and Kenny (1986) were employed. The effects of aggression and victimization were no longer associated with weapon carrying when the effect of self-efficacy was controlled. Supporting the mediational component of the model, the effect of self-efficacy on weapon carrying remained after controlling for the effects of aggression and victimization.

Results suggest that children who are both aggressive and victimized are at a heightened risk for weapon carrying, but this relationship appears to be partially mediated by children's social cognitions of self-efficacy for weapon carrying.

**Adolescent Aggression****SCHOOL-BASED GROUP INTERVENTION FOR AGGRESSIVE ADOLESCENTS:  
TREATMENT OUTCOMES AND IMPLICATIONS**

Heather K. Blier, Angela Scarpa, & Lesley D. Fox  
*Virginia Polytechnic Institute and State University, USA*

Aggressive youth tend to develop a complex array of dysfunctional behavioral and emotional patterns that often results in negative academic and interpersonal environments throughout adolescence and early adulthood. This leads to a detrimental cycle of adverse circumstances (that often occur in response to aggressive behavior) and the inability to successfully cope with these circumstances. Evaluations of intervention programs aimed at this population of youth have yielded mixed results (Gibbs, Potter, Goldstein, 1995). Further, many efforts are weakened in the face of low treatment compliance and high recidivism.

This poster will report the outcome of a 32-week school-based group intervention for aggressive youth, based on the work of Gibbs, Potter, Goldstein (EQUIP; 1995). Participants included six male students ( $M$  age= 15.7;  $SD=1.03$ ) identified for school-based treatment aggression and antisocial behavior. Data collected prior to treatment, post-treatment, and at 6-month follow-up was evaluated to determine both short-term and long-term effectiveness. Measures included self- and teacher-reports as well as school discipline reports. Descriptive analyses of the TRF and YSR (Achenbach, 1991) reveal clinically elevated levels of internalizing and externalizing symptomology prior to treatment. Comparison of pre- and post-treatment measures show significant decreases in YSR subscale means, including aggression, as well as in objective number of aggressive and non-aggressive school offenses. Additional analyses will be conducted to determine potential mediating and/or moderating variables in these relations (e.g., treatment attendance). Finally, current data collection of 6-month follow-up will be incorporated to evaluate long-term maintenance of treatment effectiveness. Results will be discussed in terms of school-based preventions and interventions for aggression.

**Adolescent Aggression****IMPULSIVE VIOLENT BEHAVIOUR IN ADOLESCENTS:  
DIFFERENT MECHANISMS AND THEIR ASSOCIATION WITH PSYCHOPATHY**

Amélie Petitclerc, *Université Laval, Canada*  
John C. Yuille, *University of British Columbia, Canada*

Significant advances have been made in aggression research by delineating subtypes of violent behaviour. This study was an attempt to further increase our level of analysis by distinguishing different mechanisms that may lead to impulsive behaviour in the context of criminal violence. Three pathways to impulsivity were tested, based on J.P. Newman and J.F. Wallace' (1993) model of disinhibition: in Pathway A, impulsive behaviour was driven by a strong attraction for an object (e.g., drugs, money, sex), while in Pathway B, it was driven by intense negative emotions (e.g., anger, anxiety), and in Pathway C, impulsive behaviour was the result of a cognitive deficit in which the individual was unable to shift his attention once involved in goal-directed behaviour. The associations between different subtypes of aggression, psychopathy, and these three pathways to impulsivity were explored. In a first interview, 22 male young offenders gave detailed accounts of up to three violent crimes they had committed. These accounts, in combination with file information, were used to rate the level of impulsivity, the mechanism for impulsivity, and the type of violence (hostile/reactive vs. instrumental) involved in these offences. Psychopathy was assessed via the Psychopathy Checklist - Youth Version (PCL-YV; Forth, Kosson, & Hare, 1994) based on file information and a second interview. Results showed that impulsive behaviour driven by strong negative emotions was involved in most hostile/reactive violent crimes and was associated with psychopathy. Contrary to hypotheses, psychopathy was not associated with impulsive behaviour resulting from a failure to shift attention.

**INDIVIDUAL DIFFERENCES IN ADOLESCENTS' ATTITUDE TOWARD FORCED SEX (ATFS)**

Pascal Mallet & Cécile Kindelberger  
*Université Paris 10 - Nanterre, France*

The study was aimed to explain interindividual differences regarding the extent to which young adolescents find it acceptable for a boy to force sex on a girl. A sample of 289 French middle-class participants (mean age = 14.64 years; SD = 0.76 years) completed a self-report questionnaire. The ATFS was measured with ten hypothetical situations depicting scenarios, such as when a girl is wearing sexy clothing. In each hypothetical situation, the girl tell clearly the boy that she does not want to have sex. Eighty percents of participants indicated that it was acceptable for a boy to force sex on a girl in at least one situation. The percentage was the same for boys and girls. Among these 80 % of participants, the number of situations in which an adolescent found forced sex acceptable was considered as an indicator of the strength of his or her ATFS. The internal consistency of the scale was acceptable (alpha = .79). Both sexes had similar ATFS scores. For boys, significant and independent predictors are : (a) the fact that adolescents reported their family had no religion; (b) Erotophilia (Fisher et al., 1988); and (c) the perception of a low peer acceptance. For girls, the significant predictors are (a) the conception of male sexuality as uncontrollable, (b) the frequency of discussion about sexuality with mother, and (c) the perception of a high peer acceptance. Discussion will focus on similarities and differences between boys and girls.

**Adolescent Aggression****EMOTIONAL INTELLIGENCE AND ANGER IN ADOLESCENTS**

Jesus Alvarado, Maite R. Pomatta, J. Vicente Merino,  
Carmen Santisteban & J. Martin Ramirez

*Universidad Complutense Madrid, Spain*

Several aspects of anger (state, trait and expression) have been compared with some factors of emotional intelligence. Subjects were 234 adolescents of both sexes (91 boys and 143 girls), between 15 and 19 years of age, students from several secondary schools in Madrid.

The measure of anger was achieved by applying the test STAXI-2 (Spielberger, 2001), and the Constructive Thinking Inventory (CTI) of Epstein (2001) was used for emotional intelligence. Both tests were adapted for Spanish samples.

1) A significant positive correlation between superstitious thinking and rigidity, and the state, trait, and expression of anger was found:

a) between superstitious thinking and anger ( $p < 0.01$ ), with correlations of  $r = 0.27$  for state, of  $r = 0.36$  for trait, and of  $r = 0.35$  for expression of anger, only in boys.

b) between different aspects of thinking rigidity (extremism, suspiciously and intolerance), and anger ( $p < 0.01$ ): in both sexes for state ( $r = 0.27$ ) and for trait ( $r = 0.25$ ); and only in girls for expression ( $r = 0.23$ ).

2) A negative correlation was found between constructive thinking and anger in both sexes:  $r = -0.24$  for state,  $r = -0.35$  for trait, and  $r = -0.32$  for expression of anger. This correlation was specially strong for the anger state in girls ( $r = -0.31$ ), and for expression of anger in boys ( $r = -0.44$ ).

3) Finally, efficient thinking (positive thinking, activity and responsibility) and illusion (euphoria, stereotype thinking and ingenuousness) was also correlated negatively with expression of anger in both sexes ( $r = -0.31$  and  $r = -0.23$  respectively).

Conclusion: the level of anger showed a significant negative relationship with constructive thinking, and a positive relationship with rigidity and superstitious thinking.

**Adolescent Aggression****RELATIONSHIP BETWEEN ANGER AND INDIVIDUAL SENSITIVITY TO NOISE IN ADOLESCENTS**

Maite R. Pomatta, Jesus Alvarado, Carmen Santisteban,  
J. Vicente Merino & J. Martin Ramirez

*Universidad Complutense Madrid, Spain*

Several aspects of anger (state, trait and expression) have been compared with individual sensitivity to noise. The main hypothesis was that there may be a positive relationship between the anger levels and the individual sensitivity to noise, and that these differences were higher in women than in men.

A sample composed by 234 students of both sexes (91 boys and 143 girls) between 15 and 19 years of age, from several secondary schools in Madrid, was tested. Anger was measured by the STAXI-2 (Spielberger, 2001) and sensitivity to noise by the SENSIT-NA (Santisteban, 1992), with two forms: I, psychophysiologicaly oriented, and II, environmental one. Both tests were adapted to Spanish samples.

Significant positive correlations were found in girls, but not in boys, between the different anger aspects and sensitivity measured by the form I of SENSIT: anger state ( $r=0.34$   $p<0.01$ ), anger trait ( $r=0.38$   $p<0.01$ ), and index of expression of anger ( $r=0.19$   $p<0.01$ ). Age in girls also showed a positive relationship with a individual sensitivity to noise ( $r=0.23$   $p<0.01$ ): the older group showed a higher sensitivity. Specifically;

1) for the anger state, there were correlations to: (a) feeling ( $r=0.34$   $p<0.01$ ), (b) physical expression ( $r=0.23$   $p<0.01$ ) and (c) verbal expression ( $r=0.28$   $p<0.01$ ), and

2) for the anger trait, there were correlations to: (a) temperament ( $r=0.38$   $p<0.01$ ) and (b) reaction ( $r=0.27$   $p<0.01$ ).

The results obtained from the form II of the SENSIT test were similar to those obtained by the form I, except that in the form II a positive relationship between the anger trait and sensitivity to noise was also found in men ( $r=0.23$   $p<0.05$ ).

Conclusion: There are significant positive relationships between different facets of anger and individual sensitivity to noise; this correlation being higher in girls than in boys.

## The Role of Prenatal Smoking and Parental Sensitivity in the Intergenerational Transmission of Aggression and Antisocial Behavior

### MATERNAL PROBLEM BEHAVIOR, PARENTING AND INFANT AGGRESSION

Lauren Wakschlag  
*University of Chicago, USA*

Prenatal exposure to cigarettes is associated with increased risk of antisocial behavior in offspring. While mothers' smoking during pregnancy is rarely an isolated problem behavior, we know little about the interrelationship of maternal smoking and other problem behaviors in pathways to early aggression.

This paper will examine the interrelationship of maternal problem behaviors and their association to toddler aggression and defiance, using data from a longitudinal study of the behavioral effects of prenatal exposure to cigarettes (N=91). This is the first study of prenatal smoking and offspring behavior to utilize biochemical methods to classify maternal smoking status; important because maternal problem behavior may increase the risk of misclassification due to non-disclosure. Forty-three percent of the mothers smoked persistently during pregnancy. Toddler conduct problems were assessed at 18 and 24 months utilizing maternal report on the Infant Toddler Social Emotional Assessment (ITSEA) and laboratory observations.

Data will first be presented on the relationship of maternal smoking during pregnancy to three categories of maternal problem behavior: (1) history of conduct problems during adolescence (e.g., CD symptoms, early first birth); (2) history of problem behavior during adulthood (e.g., poor adaptive skills, involvement with violent partners) and; (3) problematic early parenting. The relative contribution of these maternal problem behaviors to toddler conduct problems will then be examined. Early pathways will also be tested including potential moderational effects of early parenting. The implications of these findings for research on intergenerational transmission of aggression will be discussed.

**The Role of Prenatal Smoking and Parental Sensitivity in the Intergenerational Transmission of Aggression and Antisocial Behavior****PREVALENCE AND PREDICTORS OF AGGRESSION IN CHILDREN OF ADOLESCENT MOTHERS  
AT 9 AND 16 MONTHS OF AGE**

Daniel Paquette, Marc Bigras, Mark Zoccolillo, & Richard E. Tremblay  
*Université de Montréal & McGill University, Canada*

Recent studies have shown that the prevalence of physical aggression in children is at its highest when children are around two years old, thereafter decreasing steadily until adulthood. According to parents in a sample representative of the general population, already at the age of 17 months, 80% of children are physically aggressive (Tremblay et al., 1999). These results support the hypothesis of a biological programming of aggression appearing during infancy, and invite us to study the environmental factors associated with the inhibition of physical aggression, rather than its development. If this model is valid, we should expect to find little correlation before the age of two between the manifestation of physical aggression and parental behavior. We will test this prediction with a sample group of children generally considered to be at greater risk for the development of an aggressive profile, namely the children of adolescent mothers. Our sample is comprised of 120 primiparous adolescent mothers followed longitudinally from the third quarter of their pregnancy onwards, and whose children were filmed in a child-child free play situation at the ages of 9 and 16 months. The main potential predictors of aggression which will be examined concern the following characteristics of the mother: parental sensibility and psychopathology (depression, conduct disorder).

**STABILITY OF ADOLESCENT MATERNAL SENSITIVITY  
AND PRESENCE OF EXTERNALIZING SYMPTOMS IN THEIR 18-MONTH-OLD INFANTS**

George M. Tarabulsky, Marc A. Provost, Diane St-Laurent & Jean-Pascal Lemelin  
*Université Laval, Canada*

Abstract. Theoretical descriptions of maternal interactive behavior towards infants and young children have underlined its importance in different aspects of social and emotional development throughout childhood. Most of the empirical work supporting this basic hypothesis has treated maternal interactive behavior as being a stable phenomena in spite of some evidence to the contrary. We have been following a group of 100 adolescent mothers and their infants when the latter were aged 6, 10, 15, 18 and 36 months. We hypothesized that stability during the first four assessment periods would be significant but low to moderate and that instability would be linked to contextual factors such as the presence of major life events (PSI; Abidin, 1986), and personal factors, such as indices of maternal depression (CES-D; Radloff, 1977). Further, we hypothesized that those mothers whose maternal behavior became less positive would have children who would have a tendency to show greater levels of externalizing symptoms at 18 and 36 months (CBCL; Achenbach et al., 1991). The quality of maternal behavior was assessed via the Pederson and Moran (1995) home observation procedure and Q-Sort at each of the first four data points. Results showed more instability in maternal behavior between 6 and 10 months ( $r=.21$ ) than between 10 and 15 months ( $r=.44$ ) and between 15 and 18 months ( $r=.59$ ). Hierarchical regressions showed that variations in maternal behavior

**The Role of Prenatal Smoking and Parental Sensitivity in the Intergenerational Transmission of Aggression and Antisocial Behavior****PRENATAL SMOKE EXPOSURE, MATERNAL AND PATERNAL CONDUCT PROBLEMS,  
AND INFANT AGGRESSION**

Mark Zoccolillo, Sheila Spreng, *McGill University, Canada*  
Richard E. Tremblay, *Université de Montréal, Canada*

**Abstract.** Many studies have shown an association between maternal prenatal smoking and offspring antisocial behavior. However, maternal prenatal smoking is strongly associated with maternal conduct problems and is likely to be associated with paternal conduct problems also. No study of the association between maternal prenatal smoking and offspring antisocial behavior has controlled for both maternal and paternal conduct problems. It is possible that the association between maternal prenatal smoking and offspring antisocial behavior is spurious and only reflects families with an antisocial parent and child, where the transmission of antisocial behavior is genetic or through environmental risks other than prenatal smoking.

This paper will present data on a population sample of 2120 infants, assessed at 5, 17, and 29 months, and their parents. Maternal and paternal conduct problems, sociodemographic variables, exposure to prenatal smoke, and infant behavior variables have been assessed in this sample. Both maternal and paternal conduct problems are strongly associated with maternal prenatal smoking in this sample and one in 4 women smoked during pregnancy. Alternative models of the relationship among maternal and paternal conduct disorder and maternal prenatal smoking on infant behavior will be examined to test whether maternal prenatal smoking has an independent direct effect on infant behavior; an interactive effect with parental conduct disorder (suggesting a gene-environment interaction); or no effect once parental conduct disorder is controlled for.

**PATERNAL SENSITIVITY AND COMPETITION WITHOUT AGGRESSION IN CHILDREN:  
A THEORETICAL PERSPECTIVE**

Daniel Paquette  
*Université de Montréal, Canada*

A number of researchers have demonstrated interest in the study of the ontogenesis of aggression, but few have tried to understand the development of competition skills, or how youngsters acquire the ability to cope with conflicts and defend their point of view in a socialized manner without either resorting to aggression or avoiding problematic situations that can not always be resolved through cooperation and sharing. The lack of research in this field can be perhaps explained by the fact that competition and aggression are often considered to be socially unacceptable. However, with industrialized societies being characterized by a very high level of competition, it is advantageous for youngsters to develop the skills necessary to adapt to such conditions. Given that, in industrialized societies, fathers engage in physical play with their children more often than mothers do, especially in the form of father-son play, one might think that wrestling play help preschoolers to develop, on the one hand, self-confidence in confrontational situations and, on the other, self-control related to skills permitting the inhibition of aggression. Drawing on the notion of parental sensitivity as it has been developed in the context of caring for and responding to the basic needs of young children, I will discuss the central components of sensitivity in the context of physical play.

**Functions of Aggression in Children's Peer Relations****FROM CENSURE TO REINFORCEMENT: DEVELOPMENTAL CHANGES  
IN THE ROLE OF AGGRESSION IN PEER RELATIONS**

Antonius H. N. Cillessen & Lara Mayeux  
*University of Connecticut, USA*

Research on peer relations and aggression traditionally has focused on the negative effect of aggression on peer status, dyadic relationships, and social groups. In the peer relations literature, aggression is typically associated with peer rejection and predictive of antisocial behavior. The prevalence of these findings reflects the definition of peer relations in terms of social preference or likeability. Recent research, however, has indicated that when peer relations are defined in terms of peer-perceived popularity, rather than liking, the association between peer relations and aggression becomes more complex, transcending the simple association between aggression and being socially incompetent, maladjusted, rejected, or isolated. Highly popular early adolescents and those who are central members of cohesive social groups are seen as surprisingly aggressive by their peers. While aggression may be censured and dysfunctional in middle childhood (elementary school) groups, it becomes increasingly functional in the larger social networks of middle and high school as a means to achieve dominance and maintain social network centrality. While these ideas have been addressed in cross-sectional studies, they have not been examined longitudinally. We will examine the association between different forms of aggression (including physical and relational aggression) and different measures of peer relations (including sociometric status, perceived popularity, and social network membership and centrality) in a longitudinal sample of approximately 450 participants (50% girls), who were followed from 4th until 8th grade. We hypothesize that the relationships between aggression and peer rejection decreases across development while the associations among aggression, perceived popularity, and social network centrality increase. We will explore the degree to which these developmental trends hold equally for physical and relational forms of aggression. Finally, hypothesizing that these processes are moderated by sex, comparisons between boys and girls will be made. The discussion will focus on the benefits associated with various forms of aggression in (early) adolescent social networks.

**Functions of Aggression in Children's Peer Relations****FORMS AND FUNCTIONS OF ADOLESCENT AGGRESSION ASSOCIATED WITH HIGH PEER STATUS**

Mitchell J. Prinstein  
*Yale University, USA*

Research on aggression in the social-developmental literature has largely focused on the maladaptive correlates and deleterious consequences of aggressive behavior, including low status among peers. Yet, in other disciplines (e.g., ethology), investigators and theorists have focused on aggressive behaviors that are associated with high status and adaptive attributes. The disparate findings from these literatures are mostly attributable to differences in the definitions that are used to identify interpersonally aggressive behavior, the contexts in which these behaviors are measured, and the underlying conceptual frameworks of aggression that have guided past work in this area. These issues are particularly important to address not only to provide a richer understanding of the potential social reinforcement of aggressive behavior, but also to integrate recent work on various forms of aggression with existing theoretical models on the functions of aggressive behavior. This study examined both forms and functions of aggressive behavior in a sample of 209 10th grade adolescents. Peer status was measured using peer nominations of acceptance/rejection, peer-perceived popularity, and peer crowd affiliation. Peer reputations of aggressive behavior and adolescents' own perceptions of aggression were examined using peer nominations and questionnaire methods, respectively. Results revealed three forms aggressive behavior with unique status correlates; each of these forms of aggression were used either proactively (instrumental, bullying functions) or reactively towards peers. Curvilinear trends revealed that some forms and functions of aggression may be exhibited not only by low status teens, but primarily by high status teens who wish to maintain their dominance position in the social hierarchy.

**FRIENDSHIP JEALOUSY, RELATIONAL AGGRESSION, AND SOCIAL ACCEPTANCE: GENDER DIFFERENCES AND PATTERNS OF CHANGE AND STABILITY OVER TIME**

Kristen L. Lavalley, Alisha R. Walker, & Jeffrey G. Parker  
*Pennsylvania State University, USA*

Historically, researchers studying children's friendships have tended to do so by studying them in isolation, apart from the broader social context in which they are embedded. In reality, most social interaction with friends takes place in small groups, and most children's friends have several additional friends themselves. This social complexity adds to the challenges that children must face with their friends, and can lead to social tension, such as disputes over access to friends and feelings of jealousy. Our presentation addresses the role of jealousy in children's friendship groups and social adjustment. All children feel jealous and possessive of their friends from time to time. Indeed, jealousy serves to remind children of the importance of their friendships and can help cement these relationships. However, our previous research demonstrates that some children are atypically jealous and possessive, and their behavior often contributes to conflict and difficulties between themselves and their friend. This presentation will explore the broader social implications of jealousy in a short-term longitudinal sample of late elementary school aged children. Using structural equation models of change, our data show that as children's reputations for being jealous and possessive of their friends grow, their reputations for relational aggression correspondingly increase. We suspect that this is because these children begin to rely on relational aggression to respond to the threats to their friendships that they perceive. Indeed, sex differences in jealousy appear to explain the frequently reported gender difference on relational aggression. Moreover, our data further show that as children's reputations from being jealous grow, they are increasingly disliked by peers, and that it is this reputation for jealousy-rather than the reputation these children have as relationally aggressive-that accounts for their slipping status with peers.

**Functions of Aggression in Children's Peer Relations****ATTITUDES, GROUP NORMS, AND BEHAVIOR IN BULLYING SITUATIONS**

Christina Salmivalli

*University of Turku, Finland*

Marinus Voeten

*University of Nijmegen, The Netherlands*

We examined the connections between attitudes, group norms, and students' behavior in bullying situations (bullying others, assisting bully, reinforcing bully, defending victim, or staying outside bullying situations). The participants were 1220 elementary school children (600 girls and 620 boys) from 48 school classes from grades four, five, and six, i.e. with 9-10, 10-11, and 11-12 years of age. There were changes in attitudes, group norms, as well as in behaviors towards "pro-bullying" direction with increasing age. Whereas attitudes did predict behavior at the student level in most cases (although the effects were moderate after controlling for gender), the group norms could be used in explaining variance at the classroom level, especially in the upper grades. The class context (even if not classroom norms specifically) had more effect on girls' than on boys' bullying-related behaviors.

**BEING BAD AND FEELING GOOD: A LOOK AT HIGH AND LOW STATUS ADOLESCENT BULLIES**Tracy Vaillancourt, *Université de Montréal, Canada*Philip C. Rodkin, *University of Illinois at Urbana-Champaign, USA*Shelley Hymel, *University of British Columbia, Canada*Patricia McDougall, *University of Saskatchewan, Canada*Rina A. Bonanno, *University of British Columbia, Canada*Elisabeth Welch, *Uppsala University, Sweden*

Much like their victims, bullies have been found to be at risk for a host of negative psychosocial outcomes, including depression, suicide ideation, psychosomatic complaints, externalizing behavior, etc. Over time, bullies have also been found to become increasingly rejected by their peers, with rejection, in turn, contributing to a host of psychological difficulties. Although many bullies are unpopular with their peers, research increasingly points to the presence of children who bully others and also enjoy high status within the peer group. In this paper we examine the links between high and low status adolescent bullies in relation to psychosocial functioning in a sample of 554 students in grades 6 to 10. Bully status and social status (social preference, perceived popularity, perceived power) were measured using peer nominations while psychosocial functioning was measured using a variety of self-report questionnaires (i.e., assessing loneliness, depression, self-esteem, self-efficacy, social motivation, etc.). Analyses revealed that high status bullies fare much better than low status bullies. Specifically, high status bullies feel very good about themselves and their peer relations while low status bullies display the same problematic profile described above. These findings have important implications for intervention programs aimed at reducing school bullying. First, bullying may be particularly difficult to eliminate if it is seen as a source or privilege of high status. Moreover, high status bullies may be especially resistant to change insofar as their behavior is not impacting on either their sense of well being or their peer relations. These findings also raise questions regarding the relative and interactive contributions of bullying and aggressive behavior versus peer rejection to later psychosocial adjustment.

**Special Populations and Aggression****THE EFFECTS OF VERBAL AGGRESSION AMONG CHILDREN AND ADOLESCENTS (STRABISMUS PATIENT)**

Maria Cristina de Oliveira Regina &amp; Keila Monteiro de Carvalho

*State University of Campinas - Unicamp, Brazil*

When children are increasing their social relationship out of family environment, on school, they discover a new dimension of the relationship: the point of view from another around. Not always these point of view is favorable, but frequently any of this worse consideration is a new experience for the majority of the children. Sometimes unfavorable point of view is expressed by verbal aggression. Many times negative expressions are applied as instruments of refuse or exclusion, another as way of control or manipulating inside a group of relationship. Methods: children and adolescents frequenting common school interviewed after indication for strabismus surgery; Results: until 7 years old was not enough clear for the subjects any other point of view except their own: rarely was affected by this; from 8 years old to 12 years old the confrontation with negative point of view specially concerning their appearance was a suffering experience, due to the connotation as verbal aggression applied by another ; due also to the own feelings of irritability/ increased aggressiveness as a response to the social aggression; many children felt themselves impotent to deal with these verbal aggression in the school; many of them use as a resource the adult's mobilization in order to control the situation ; another was living/aliveing fear of becoming uncontrollable their agressivity in face of the disgusting expressions; during the adolescence the denial was the principal mechanism of defense; sometimes there was latent aggressivity ,another the offensive behavior accumulated was diminished, but not forgotten; someone became introverted individuals; in spite the occurrence of passive attitude before the verbal aggression, the majority of the sample presented active, many times able to acting as a response to the context, however not always efficiently; Conclusion: Verbal aggression affected the strabismus patient development.

**Special Populations and Aggression****DEVELOPMENTAL CORRELATES OF AGGRESSION IN CLINICALLY REFERRED BOYS AND GIRLS**

Daniel F. Connor, Julie A. Cunningham,  
*University of Massachusetts Medical School, USA*

Richard H. Melloni, Jr.  
*Northeastern University, USA*

Aggression is highly prevalent and a significant clinical treatment problem in psychiatrically referred children and adolescents. These youths are often psychiatrically diagnosed with conduct disorder (CD). However, a diagnosis of CD frequently mixes various subtypes of aggression together. Subtypes might better characterize aggression in these youths and facilitate outcome and treatment research. The aims of our study are to investigate differences in predatory-proactive and affective-reactive subtypes of aggressive behavior in a psychiatrically referred population of children and adolescents. Our study sample included 211 psychiatrically referred children residing in a residential treatment facility, including 168 boys and 43 girls. The age of our sample was 13.3,  $SD=2.6$  (range 6-18 years), and the IQ was 90.1,  $SD=12.9$  (range 70-127). All children and adolescents met diagnostic criteria for at least one, and frequently several, psychiatric disorders. Aggression subtype coded by staff observer included proactive/reactive aggression, predatory/affective aggression, and overt categorical aggression (verbal threats, property destruction, self-injurious behaviors, and assault). Aggression subtypes were compared on variables assessing demographic, family, developmental, psychiatric diagnostic, attachment, and traumatic events as ascertained by medical chart review. Inter-rater reliability was completed on 29 charts (14%). Kappa coefficients of agreement ranged between .46 and 1.0 on chart items requiring inter-rater judgment, with the mean  $K = .84$ . Results showed differences between predatory-proactive and affective-reactive subtypes on the above variables. These results can be used to facilitate additional research and better treatment planning for aggressive youths in psychiatric settings.

**DOES NITRIC OXIDE PLAYS AN IMPORTANT ROLE IN AGGRESSIVE BEHAVIOR  
CHANGES IN ICU SETTING IN PATIENTS WITH PULMONARY ARTERY HYPERTENSION  
AFTER CORRECTION OF CONGENITAL HEART SURGERY?**

Soumen Acharya  
*India Institute of Medical sciences, India*

The use of inhaled nitrous oxide therapy is latest experimental treatment for pulmonary artery hypertension. The aim of the study is to evaluate the effect of inhaled nitrous oxide in children with pulmonary hypertension and how does it affect the aggressive nature in post-operative period as compared with other patients not administered nitrous oxide.

Total of thirty patients were included in the study. 15 were given nitrous oxide and other 15 were not. The results indicated that patients administered nitrous oxide did not display aggressive behavior as compared to the control group.

**Special Populations and Aggression****PREDICTORS AND CORRELATES OF PHYSICAL AGGRESSION  
AND INTIMIDATION IN A SAMPLE OF ADJUDICATED FEMALES IN QUEBEC**

Nadine Lanctôt, René Carbonneau & Catherine Émond  
*Université de Montréal, Canada*

The aim of the study is to analyze the correlates and predictors of physical aggression and intimidation in a sample of adjudicated adolescent males and females from the province of Quebec, Canada. Data have been collected from 506 boys and 150 girls who were convicted by the juvenile court of Montreal during 1992 and 1993. These youth have been interviewed three times : in the middle of adolescence, at the end of adolescence and at the beginning of adulthood. Prevalence rates of physical violence and of intimidation will first be analyzed and compared between genders. Personal and social factors correlated with these two forms of aggression during adolescence will be presented separately for both genders. In addition, predictors associated with a decline of aggression from adolescence to adulthood will be identified. This study will highlight gender differences in aggression and will contribute to guide interventions designed for high-risk youth.

**GENDER DIFFERENCES IN CORRELATES OF AGGRESSION AND HOSTILITY  
IN PSYCHIATRICALLY REFERRED ADOLESCENTS**

Julie A. Cunningham, Daniel F. Connor  
*University of Massachusetts Medical School, USA*

Richard H. Melloni, Jr.  
*Northeastern University, Boston, USA*

While many correlates of aggression have been previously identified, it is necessary to examine how these risks might differentially affect certain populations. It is suspected that the etiology of aggression in males and females may be very different. Thus, we investigated gender differences in correlates of aggression and hostility/irritability in 161 psychiatrically referred adolescents. Correlations between hostility and aggressive behavior were also examined. Subjects were 39 females and 122 males aged 12-18 residing at a psychiatric treatment facility in Massachusetts, USA. Chart reviews were performed on each subject to ascertain whether there was a history of substance abuse, parental risk factors for aggression, attachment disruptions, or a history of abuse. Inter-rater reliability checks were performed and agreement ranged from 76-100% ( $K = 0.46-1.0$ ). The average inter-rater agreement was 89% ( $K=0.84$ ). Subjects completed self-report scales measuring hostility and overt aggression as dependent behavior measures. Linear regression analyses were performed separately for both the male and the female groups of subjects to ascertain the relation between each category of risk factor and the score on hostility and aggression measures. The correlation of hostility and aggression scores was also calculated. Results indicate that risk factors for aggression differentially affect males and females. Significant correlates of hostility in males were: parental arrest history, total number of out of home placements, a history of physical abuse, alcohol abuse, and a parental history of arrest. Significant correlates of hostility in females were: a parental history of alcohol abuse and violence and a history of sexual abuse. Scores of hostility/ irritability were significantly correlated to scores of overt aggression ( $r = 0.3$ ), reactive aggression ( $r = 0.33$ ), and proactive aggression ( $r = 0.23$ ). These findings suggest that gender differences exist in correlates of hostility/ irritability and aggression in male and female psychiatrically.

**Preschoolers and aggression****PRESCHOOLERS' USE OF DISPOSITIONAL INFORMATION  
TO EVALUATE THE APPROPRIATENESS OF AN AGGRESSIVE RESPONSE**

Jessica W. Giles & Gail D. Heyman  
*University of California at San Diego, USA*

The tendency for 3- to 5-year-old children to use trait information when evaluating aggressive responses to ambiguous behavior was examined. Participants were 41 preschoolers enrolled in a Head Start program in Southern California. Children were more likely to endorse the use of aggression against a mean story character than against a nice story character. Additionally, they were more likely to endorse the use of aggression against a story character who feels happy when bad things happen to other kids than against a story character who feels sad when bad things happen to other kids. These findings suggest that, as early as preschool, trait information can serve as a tool with which children evaluate the use of aggression in response to ambiguous behavior. This work contributes to a growing body of research suggesting that young children can make use of a variety of conceptual tools in making inferences about the behavior of others.

**SOCIAL BEHAVIOR IN MALE AND FEMALE 5-YEAR OLDS  
AND ITS RELATION TO SALIVARY TESTOSTERONE LEVELS**

L. Ahedo<sup>1</sup>, J. Cardas, A<sup>1</sup>. Azpíroz, P.F. Brain<sup>2</sup> & J.R. Sánchez-Martín<sup>1</sup>

<sup>1</sup>*Basque Country University, Spain*

<sup>2</sup>*University of Wales Swansea, UK*

Potential relationships between behavioral parameters recorded during social interactions of a group of 5-year-old children and their salivary testosterone levels were investigated. Possible mediating roles of physical factors on potential testosterone-behavior relationships were also assessed. The subjects were 44 boys and 44 girls from four classrooms in two private schools in San Sebastian (Spain). Free play behavior was videorecorded in the playground for eight months (from November to June). The resulting records were evaluated ethologically by two observers ('blind' to testosterone values), concentrating on aggression, affiliation and leadership. Salivary samples were taken from children, using a hygienic saliva collection kit, twice during the observation period (in May and June), to determine free testosterone levels using a radioimmunoassay. Physical measurements of subjects, including their weight and height, as well as fluctuating asymmetry (all separately linked to both aggression and testosterone) were also made. A principal components analysis was used on observed behavior identifying several factors, including 'serious aggression', 'playful aggression' and 'leadership'. Only 'playful aggression' (giving threat, giving aggression, receiving aggression and defense/avoidance in play contexts) was positively correlated with all testosterone levels in boys. Boys also showed more of this behavior than girls. The physical measurements taken appeared not to moderate this testosterone-behavior relationship. These results support studies on success in competitive games and hormones in adults. They suggest that early gender-based behavioral differences are correlated with circulating testosterone.

**Preschoolers and aggression****THE ROLE OF EMOTION REGULATION IN THE DEVELOPMENT OF ANTISOCIAL BEHAVIOUR:  
A STUDY OF PRESCHOOL CHILDREN**

Sophie Havighurst, Margot Prior, Ann Sanson & Daryl Efron  
*University of Melbourne, Australia*  
*Royal Children's Hospital, Australia*  
*Australian Institute of Family Studies, Australia*

The precursors to antisocial behaviour development include early signs of oppositional behaviour, social skill difficulties, and emotional dysregulation. This latter aspect of a child's functioning appears to be a central mechanism contributing to oppositional and disruptive behaviour, and interpersonal functioning problems. A child's temperament, cognitive abilities and constitution provide a template for the initial expression of emotions, and the interaction between these innate factors and the influence of the environment, further shape emotion regulation skills. Recent research has demonstrated that parents' philosophies and approaches of responding and teaching children about emotions also plays a crucial role in shaping the way a child learns to regulate emotion, and their emotional skills and knowledge (Gottman, Katz and Hooven, 1997). This study explored these factors in preschool children both with and without behavioural difficulties. A sample of 85 4- and 5-year-old children were recruited from kindergartens in metropolitan Melbourne, and through the Melbourne Royal Children's Hospital. Children's emotional skills were directly assessed using a puppet interview to elicit emotion knowledge, and a delay of gratification task and a disappointment task to examine emotion regulation. Measures of children's social skills, emotion regulation, and behaviour were gathered using questionnaires administered to parents and teachers. Parenting styles were assessed using the Meta-Emotion Interview, a semi-structured interview exploring parent's awareness of their child's emotional life and their attempts to engage with and teach their child about emotions, along with parent self-report measures. The results demonstrated a relationship between parent's meta-emotion philosophies and parenting styles, and children's emotional skills. Children learned cognitive and behavioural skills about dealing with emotions which in turn influenced the way they regulated their own emotions. These results will be discussed in light of the developmental relationship between emotional regulation and early childhood behavioural problems so that theoretical understandings, and implications for interventions, can be considered.

**Preschoolers and aggression****TANTRUMS IN TYPICAL AND PSYCHOPATHOLOGICAL DEVELOPMENT**

Mike Potegal

*University of Minnesota Hospital, USA*

Our previous studies yielded a model of tantrums consisting of two main emotional/behavioral processes. Anger-related behaviors, e.g., shouting, hitting, kicking, stamping, or throwing, were maximal at or near tantrum onset and declined relatively rapidly over the course of the tantrum. They formed three factors reflecting Low, Intermediate, and High levels of anger intensity. The probability of Distress Factor-related crying, whining, and comfort-seeking tended to increase throughout the tantrum. Further evidence for the separability of anger and distress came from our EEG study of hemisphere asymmetries in tantrum prone and non tantrum prone 4 year olds in which right frontal cortex activation correlated significantly with facial expressions of sadness while left temporal activation was associated with both parental reports and laboratory measures of anger.

Most children relinquish tantrums by their fifth year; earlier studies have shown that tantrums persisting to age 8 are strongly prognostic of boys' subsequent antisocial behavior. We are extending these findings to determine if tantrum frequency and duration (determined from a 6 week tantrum calendar kept by parents), and behavioral content (determined from 3 tantrums coded in detail by parents) can identify 4 year olds with internalizing or externalizing psychopathology and distinguish them from typically developing peers. We are currently finding that tantrum duration appears to mark the general severity of psychopathology, as indicated by Achenbach CBCL scores, while a lack of high tantrum anger may specifically distinguish internalizing psychopathology. The success of this work could potentially facilitate the rapid diagnosis of childhood psychopathology.

**Aggression and its Socialization in Rhesus Monkeys**

Stephen J. Suomi

*University of Maryland, USA*

Recent research has disclosed marked individual differences in patterns of biobehavioral development exhibited by rhesus monkeys across the lifespan. For example, approximately 5-10% of rhesus monkeys growing up in the wild consistently exhibit impulsive and/or inappropriately aggressive responses to mildly stressful situations throughout development; those same individuals also show chronic deficits in their central serotonin metabolism. These characteristic patterns of biobehavioral response emerge early in life and remain remarkably stable from infancy to adulthood. Laboratory studies have demonstrated that although these characteristics are highly heritable, they are also subject to major modification by specific early experiences, particularly those involving early social attachment relationships. For example, a specific polymorphism in the serotonin transporter gene is associated with deficits in serotonin metabolism, extreme aggression, and excessive alcohol consumption among monkeys who have experienced insecure early attachment relationships but not in monkeys who have developed secure attachment relationships with their mothers during infancy. Other examples of specific gene-environment interactions will be presented, and their implications for understanding basic developmental processes will be discussed.

**The Development of Sex Differences in Aggression****AN OVERVIEW OF SEX DIFFERENCES IN AGGRESSION DURING CHILDHOOD**

John Archer

*University of Central Lancashire, UK*

Throughout the animal world, aggression is associated with resource competition. Sex differences typically arise as a result of differences in reproductive competition arising from sexual selection. Yet aggression, and sex differences in aggression, are often found long before sexual maturity in nonhuman mammals. Similarly, human sex differences begin as soon as children are able to interact, rather than arising at the time of sexual maturation. Both the pattern of a decline in overall physical aggression, and the constant effect size for sex differences in physical aggression throughout childhood are contrary to what would be expected from a social learning analysis. Alternatives to physical aggression, verbal and indirect aggression, develop during childhood, and show contrasting patterns for sex differences. It is concluded that the origins of sex differences in human aggression must lie in neuroendocrinological events occurring during prenatal or early postnatal life. These produce different dispositions in boys and girls, which become amplified and developed in sex-segregated social groups.

**A LONGITUDINAL STUDY OF GENDER-RELATED COGNITION AND CONFLICT BEHAVIOUR**

Anne Campbell, Louisa Shirley

*Durham University, UK*

Julia Candy

*Cambridge University, UK*

Gender schema theory proposes that gender-congruent behaviour is driven by children's development of gender schema. The fundamental ability to distinguish between boys and girls (gender labelling) is thought to allow for the acquisition of finer, domain-specific information (gender stereotypes) that drive behaviour. While most previous studies have been cross-sectional and cannot address the temporal relationship between gender knowledge and behaviour, we conducted a longitudinal study of the two forms of gender knowledge in relation to two sex-typed behavioural domains (peer conflict and maintenance of proximity to caretaker) in children tested at 24 and 36 months (N=56). Gender knowledge increased significantly between 2 and 3 years and sex differences were present for both peer conflict and caretaker proximity. However only 3 of 24 correlations between cognition and behaviour were significant. All three were concurrent correlations, one of which ran counter to the predicted sign. None of the 8 cross-lagged correlations predicted by gender schema theory were significant. We conclude that the development of sex-typed behaviour and gender knowledge are parallel but independent processes.

**The Development of Sex Differences in Aggression****TRAJECTORIES OF PHYSICAL AGGRESSION BETWEEN 2 AND 11 YEARS:  
SEX DIFFERENCES AND CORRELATES**

Sylvana Côté, Tracy Vaillancourt, Abdeljelil Farhat, Bernard Boulerice & Richard E. Tremblay  
*Université de Montréal, Canada*

Previous studies have shown that boys and girls exhibit similar levels of physical aggression during toddlerhood. However, the large sex differences observed during middle childhood, adolescence, and adulthood appear to be well established by the beginning of formal schooling. This paper had two specific objectives. The first was to model the developmental trajectories of physical aggression for a large sample ( $n = 8587$ ) of boys and girls (from the National Longitudinal Study of Canadian Youth) between the ages of 2 and 11 years. In doing so, we modeled the growing sex difference in the levels of physical aggression during these years. The second objective was to identify childhood factors that can explain why boys and girls engage on such divergent trajectories. Thus, we examined the effects of individual factors (e.g. temperament), family characteristics (parental practices, parental characteristics, SES), and childhood experiences (e.g. daycare) on trajectories of high physical aggression and on the growing gender gap for this trajectory.

**USES OF AGGRESSION AND QUASI-AGGRESSION BY ADOLESCENT BOYS TO ESTABLISH DOMINANCE**

Anthony D Pellegrini  
*University of Minnesota, USA*

Male groups, relative to female groups, tend to be hierarchic such that status is based on dominance. Boys use a variety of strategies to establish and maintain dominance status. During adolescence we suggest that they use both quasi-aggression (or rough-and-tumble play[R&T]) and aggression as a way in which to establish and maintain dominance. In this paper I present two sets of analyses to explore the extent to which boys use both of these strategies in male groups and ways in which they use quasi-agonistic, not aggressive, strategies with females as a way in which to initiate heterosexual relationships. In this longitudinal study, we observed youngsters across the first two years of middle school (13-14 years of age) and interviewed them about their motivation for engaging in R&T and aggression. Youngsters viewed videotaped bouts of both R&T and aggression in which they were both participants and non-participants. Consistent with the view that R&T is used to establish and maintain dominance in male groups, we found that male participants interpreted both R&T and aggression as dominance displays. Female participants interpreted R&T as "playful"- not aggressive. The behavioural data support these claims. Males' aggression was aimed at other males, not females. Further, that this aggression increased with the transition to a new group and then declined supports the claim that it was used in the service of dominance. Males did however initiate heterosexual contact with quasi-aggressive behaviors, or what has been labelled poke and push courtship.

**Aggression in the School Setting****CONTINUITY OF PHYSICAL AND VERBAL VICTIMIZATION  
AND THREE-YEAR PSYCHOSOCIAL CONSEQUENCES**

Wendy M. Craig, Debra J. Pepler, & Jennifer Connolly  
*Queen's and York University, Canada*

Victimization represents a relationship characterized by exploitative and/or manipulative behaviour on the part of one party against another (Troy & Sroufe, 1987). The problem of victimization is significant in terms of its prevalence and associated distress. To date, advances have been made in our understanding of factors that result in victimization by adult caregivers. However, little attention has been directed towards the victimization of children by other children, despite the fact that researchers have found that about 10% of children report being severely victimized on a regular basis, and these proportions appear to remain stable over time (Boulton & Smith, 1994). The extant research on victims has been limited by a lack of longitudinal studies that consider both the developmental contexts and the continuity of different types of victimization experiences. The present study examines the continuity of both physical and verbal victimization, its changing manifestations in adolescence and the three-year outcomes.

There were 221 boys and 290 girls in the sample, with a mean age of 13.4 years in the first year of the study. Participants completed the following: a modified version of the Conflict Tactic Scale (Straus, 1979), AAUW Sexual Harassment Questionnaire (AAUW, 1993), the Student Questionnaire (Olweus, 1979); CBCL Youth Self Report, (Achenbach, 1991); Michigan Alcoholism Screening Test (MAST; Selzer, Vinokur, & van Rooijen, 1975); Drug Screening Test (DAST; Skinner, 1982); and Eating Attitudes Test (EAT-26; Garner & Gafinkel, 1979).

Results of repeated measures manovas confirm our hypotheses. Children who harassed others in late elementary school reported higher levels of victimization, physical aggression, substance and alcohol use, externalizing problems, internalizing problems, depression, and eating disorders three years later compared to those children who were not victimized in elementary school. This research confirms our concerns regarding the continuity of victimization in elementary school into adolescence and associated mental health concerns.

**Aggression in the School Setting****MORAL DISENGAGEMENT & SCHOOL BULLYING: AN INVESTIGATION OF STUDENT ATTITUDES & BELIEFS**

Shelley Hymel, Rina A. Bonanno, Natalie Rocke Henderson &amp; Tanya McCreith

*University of British Columbia, Canada*

Bullying, a subcategory of aggressive behavior, is encountered regularly by children and adolescents in the context of schools worldwide (Smith et al., 1999). It is a complex social problem that can have serious negative consequences for both bullies and victims (e.g., Haynie et al., 2000). Efforts to eliminate bullying problems increasingly point to the role of the peer group, especially the extent to which peers condone bullying versus work to protect victims (Salmivalli, 1999; Hazler, 1998; Aggressive Behavior, 2000). In this study we explore the processes through which students may come to support bullying by examining student attitudes and beliefs about bullying within the framework of moral disengagement. Bandura (1999) argues convincingly that people's most egregious aggressive behavior can be understood in reference to the processes of moral disengagement, through which the negative impact of behavior is minimized by means of such things as moral justification, euphemistic labeling, advantageous comparison, displacement and diffusion of responsibility, disregard or distortion of the effects of one's actions, dehumanization, and attribution of blame. Self-report questionnaires were used to examine whether or not moral disengagement processes provide a framework for understanding bullying and peer harassment at the secondary level. Consistent with Bandura's notion of moral disengagement, results indicate that a substantial number of students report positive attitudes and beliefs about bullying, and that such attitudes are more likely among students who engage in bullying. Discussion focuses on peer group processes that maintain bullying behavior and the implications of these findings for school-based interventions.

**Aggression in the School Setting****THE IMPACT OF A SCHOOL INCIDENT TRACKING SYSTEM ON DISRUPTIVE BEHAVIOURS  
IN THE ELEMENTARY SCHOOL CHILDREN: A RANDOMIZED CONTROLLED TRIAL**

John C. LeBlanc, Daniel A. Waschbusch & Normand Carrey  
*IWK Health Centre, Canada*

**HYPOTHESIS**

The School Incident Tracking System (SITS), a computerized behavior tracking system enhanced to identify students with no disruptive behaviour and students with excessive disruptive behaviour will reduce referrals to the office for disruptive behavior compared to a computerized reporting system that simply collects referrals to the office.

**BACKGROUND**

Disruptive behaviors in the classroom adversely affect the learning and social environment and may reflect maladaptive behavior or mental illness in the students who are disruptive. In collaboration with school principals, the authors have developed a standardized incident tracking system and that captures referrals from teachers to the office and generates reports help schools manage students and monitor school behaviour codes. Four elementary schools have used this successfully for two years. The impact of this system is currently being evaluated in a stratified randomized controlled trial in which two schools have been allocated to an enhanced SITS and two to the standard SITS version. Every week and once per calendar month, the enhanced version randomly selects four students who have not been referred to the office during the previous week and month respectively. They will be given a small reward or recognition. The system will also generate a report as soon as a specified number of referrals has been exceeded so that staff can consider appropriate interventions such as referral to the student support team.

**RESULTS**

The principal outcome measures are the rates of referral and the differences in interventions between schools in the two arms. The trial will finish 15 June 2002.

**Aggression in the School Setting****ON THE IMPACT OF A PREVENTIVE INTERVENTION  
ON PHYSICAL AGGRESSION DEVELOPMENTAL TRAJECTORIES DURING ADOLESCENCE**Eric Lacourse<sup>1</sup>, Sylvana Côté<sup>2</sup>, Daniel Nagin<sup>1</sup>, Frank Vitaro<sup>2</sup>,Mara Brendgen<sup>2</sup> & Richard E. Tremblay<sup>2</sup><sup>1</sup>*Carnegie Mellon University, USA*<sup>2</sup>*Université de Montréal, Canada*

A longitudinal-experimental study was used to test hypotheses generated from developmental theories of physical aggression. The longitudinal study followed 909 boys from their kindergarten year up to 17 years of age. The randomized multi-modal intervention targeted a sub-sample of boys who were rated disruptive by their kindergarten teacher. Semiparametric analyses of developmental trajectories for self-reported physical aggression identified more types of trajectories than expected from recent theoretical models. Also, these trajectories did not confirm theoretical models, which suggest a general increase in physical aggression during adolescence. The majority of boys were either on a low-level trajectory or a declining trajectory. Less than 6% appeared to follow a trajectory of chronic physical aggression. Comparisons between disruptive and non-disruptive kindergarten boys confirmed the hypothesis that disruptive preschool children are at higher risk of following trajectories of frequent physical aggression. Comparisons between treated and untreated disruptive boys confirmed that an intensive intervention between 7 and 9 years of age, which included parent training and social skills training, could change the long term developmental trajectories of physical aggression for disruptive kindergarten boys in low socioeconomic areas. The results suggest that trajectories of violent behavior can be deflected by interventions, which do not specifically target the physiological deficits that are often hypothesized to be a causal factor. The value of longitudinal-experimental studies from early childhood onwards is discussed.

**The Risk Dynamics of Family Violence****LONG-TERM CONSEQUENCES OF CHILDHOOD PHYSICAL ABUSE**

Cathy Spatz Widom  
*New Jersey Medical School, USA*

This paper will examine the extent to which physical aggression (physical abuse) in one's family of origin leads to aggression and violence in young adulthood. The data to be used in these analyses are from a prospective cohort design study in which children with court substantiated cases of abuse and/or neglect from the years 1967-1971 were matched with controls on age, sex, race, and approximate family social class. Criminal history searches using local, state, and federal law enforcement records and two-hour follow up interviews were conducted in 1989 and 1995. Subjects are 676 abused and neglected individuals and 520 matched controls who were followed into young adulthood.

**GENERATING A RISK FACTOR MODEL OF VIOLENCE AGAINST PARENTS**

Linda Pagani<sup>1</sup>, Richard E. Tremblay<sup>1</sup>, Daniel Nagin<sup>2</sup>, Mark Zoccolillo<sup>1</sup> & Pierre McDuff<sup>1</sup>  
<sup>1</sup>*Université de Montréal, Canada*  
<sup>2</sup>*Carnegie Mellon University, USA*

We examine prospective and concurrent risk factors associated with verbal and physical violence toward mothers and fathers by their 15/16 year-old adolescent sons and daughters. Using data from the Quebec Longitudinal Study of Kindergarten children, we examine the impact of socio-economic factors (maternal education and family structure); inherent child factors (sex and developmental trajectories of physical aggression from early to later childhood, adolescent substance use), family environment (concurrent parent-child involvement, parental substance use), and prospective and concurrent parenting process variables (mean parental supervision at puberty, concurrent parental punishment) as predictors of adolescent-directed violence against parents (in the last 6 months). A childhood characterized by physical aggression in the school context showed the highest risk of adolescent-directed verbal and physical aggression toward both mothers and fathers. Apart from the common impact of this risk variable, other, more distinctive risk factors emerged for violence against mothers and fathers.

**The Risk Dynamics of Family Violence****PREVALENCE, SEVERITY, AND MUTUALITY OF PHYSICAL AGGRESSION AGAINST A PARTNER  
IN TWO USA NATIONAL SAMPLES AND A UNIVERSITY STUDENT SAMPLE**

Murray A. Straus & Tasha Buzzell  
*University of New Hampshire, USA*

The paper will report results based on analyses of the 1975 and 1985 National Family Violence Surveys (N = 2,143 and 6,002 and a study of 1,256 US university students. Data will be presented on: (1) Annual Prevalence: the percent who reported one or more instances of physical aggression against their partner in the past year. (2) Annual chronicity: The mean number of times that subjects who were physically aggressive to a partner carried out acts of physical aggression. (3) Mutuality of aggression: the percent of violent couples in each of the following three categories: Both partners physically aggressive, Male partner only, Female partner only. These three types of data will first be presented for any occurrence of physical aggression, and then for severe aggression (acts which have a high risk of causing injury that requires medical attention). Two methodological questions will also be analyzed: Does the gender of the respondent affect the results? and Does data on perpetration versus victimization affect the results? The paper will discuss the implications of the results for designing research on intrafamilial physical aggression, for understanding physical aggression in the family, and for designing programs for primary prevention of intrafamilial physical aggression.

**ARE SIBLING RELATIONSHIPS IN CHILDREN FROM VIOLENT HOMES  
CHARACTERIZED BY PHYSICAL AGGRESSION AND VIOLENCE?**

Janice Waddell  
*Ryerson Polytechnic University, Canada*

Debra Pepler  
*York University, Canada*

Data from a study examining the sibling relationship as a moderating factor for children from violent homes will be discussed with particular emphasis on findings related to sibling dyad conflict resolution strategies, emotional and behavioural outcomes of individual children in sibling dyads, and observations of conflictual and supportive behaviours in sibling interactions. Study data suggest that sibling dyads from violent homes experience both conflictual and supportive dimensions within their relationship, and that the sibling relationship may be a potential focus for primary and secondary prevention interventions for child witnesses of family violence.

**Aggression in Animals****THE ROLE OF CONTEXT IN REPEATED CONFRONTATIONS  
BETWEEN MALE RATS USING THE RESIDENT-INTRUDER PARADIGM**

Elizabeth E. Caldwell & David C. Riccio  
*Kent State University, USA*

Olfaction is an integral part of sociosexual behaviors in rats. To examine whether contextual odors are useful in the conditioning of aggressive behaviors in the present study, resident males were confronted with a male intruder every 24 hours, for 4 consecutive days, with a change in odor context on the 4th day. For the first 3 encounters, intruders were removed after 3 minutes, or after the first biting attack made by the resident male, a technique designed to instigate higher levels of aggression during each successive encounter. On the 4th day, all resident-intruder dyads were tested for 5 minutes. Odor context was manipulated by either adding a scented oil to the home cage during each confrontation or by changing the home cage substrate prior to the 4th interaction. For manipulations involving scented oils, a context change on the 4th day had no effect on attack latency or number of biting attacks. When the residents' home cage substrate was changed, latencies to attack decreased significantly. Mean number of biting attacks also decreased, although not significantly. Investigation of intruders by residents did not differ as a function of odor context. Results suggest that arbitrary odors are insufficient for conditioning attack behaviors, but that olfactory context signaling residence and dominance of the resident male is important for territorial aggression.

**SEROTONIN NEURAL SIGNALING AND DEVELOPMENT MODULATE OFFENSIVE ATTACK  
IN ADOLESCENT ANABOLIC STEROID-TREATED HAMSTERS**

Jill M. Grimes & Richard H. Melloni, Jr.  
*Northeastern University, Boston, USA*

Repeated high dose anabolic steroid treatment during adolescence facilitates offensive aggression in male Syrian hamsters (*Mesocricetus auratus*). The current study assessed whether adolescent anabolic steroid-facilitated offensive attack behavior was modulated by serotonin and if anabolic steroid exposure during this developmental period influenced serotonin innervation to the primary aggression areas of hamster brain. In a first experiment, hamsters were administered high dose anabolic steroids throughout adolescence and then scored for offensive attacks following the systemic administration of saline or fluoxetine, a selective serotonin reuptake inhibitor. Saline-treated hamsters showed high levels of offensive attack, while treatment with fluoxetine attenuated the anabolic steroid-facilitated aggressive response. In a second experiment, hamsters were administered high dose anabolic steroids or sesame oil throughout adolescence, tested for offensive aggression, and then examined for differences in serotonin innervation to primary aggression areas of brain. Aggressive, anabolic steroid-treated hamsters showed significant reductions in the number of serotonin immunoreactive varicosities in several areas implicated in the aggressive response in hamsters, most notably the anterior hypothalamus, ventrolateral hypothalamus, and medial amygdala. However, no significant differences in serotonin afferent innervation were found in other aggression areas, such as the bed nucleus of the stria terminalis and lateral septum, or in several non-aggression areas of hamster brain. Together, these results support a role for altered serotonin development and function in adolescent anabolic steroid-facilitated offensive aggression.

**Aggression in Animals****THE INFLUNCES OF SOME MEDICINAL PLANT EXTRACTS ON THE AGGRESSIVITY,  
FERTILITY AND SOME PHYSIOLOGICAL PARAMETERS OF MALE MICE**

Merza H. Homady  
*Mutah University, Jordan*

The effects of oral applications of 3mg/animal/day of freshly prepared ethanolic extracts of four medicinal plants were investigated for six weeks in intact male mice. The ingestion of ethanolic extract of *Mentha longifolia* clearly inhibited the social aggression in non treated mice to which treated subjects were introduced. However, the ingestion of this extract reduced the number of mated females as well as the number of both total implantations and viable fetuses. It would appear from the present study that the ingestion of *Mentha longifolia* might produce adverse effects on the social aggression and fertility in male mice. Moreover, the spermatozoa counts, their motility and their abnormal forms were all significantly altered by this exposure.

In contrast, the administration of *Zingibar officinale* extract dramatically increased the attack to which the mice were subjected. Additionally, this treatment also caused an increase in spermatozoa counts and their motilities. On the other hand, the administration of such extract had a significant effect on the number of mated females but the number of implantations or the number of viable fetuses were unaffected.

The ingestion of *Petroselinum sativum* extract did not cause any adverse effect on social aggression or fertility in male mice at the concentration used.

The ingestion of *Ferula hormonis* extract was clearly inhibited the social aggression. Furthermore this treatment caused a significant decrease in the number of pregnant females, number of implantations and viable fetuses in females impregnated by males that ingested this extract. These data indicate that *Ferula hormonis* exposure during this period puts the exposed animals at significant risk for reduced reproductive capacity in adulthood.

**Aggression in Animals****PRENATAL COCAINE EXPOSURE, VASOPRESSIN, AND AGGRESSION IN HAMSTERS,**

Richard H. Melloni Jr. &amp; Denise Jackson

*Northeastern University, Boston, USA*

The present study examined the hypothesis that gestational exposure to cocaine predisposes offspring to heightened levels of aggression as pubescents by altering the development and activity of the anterior hypothalamic vasopressin neural system. In a first series of experiments, pregnant dams were administered saline or cocaine from ED10-14. Offspring were then kept with their dams until PD 21, weaned into individual cages until puberty (P35-42), and then tested for offensive aggression using the resident/intruder test. Pubertal hamsters exposed gestational cocaine showed significantly heightened measures of offensive aggression compared to saline controls. A second set of experiments assessed whether gestational cocaine exposure altered tissue levels and basal release of vasopressin from anterior hypothalamic brain slices of pubescent animals exposed to gestational cocaine and saline-treated sibling controls using in vitro superfusion. Anterior hypothalamic slices from pubescent, cocaine-exposed animals showed higher tissue levels of vasopressin and lower levels of basal vasopressin release than saline treated controls. A third set of experiments examined the monoaminergic regulation of anterior hypothalamic vasopressin release in pubescent animals exposed to gestational cocaine and saline-treated sibling controls. In vitro serotonin activation via cocaine superfusion had no effect on basal vasopressin release between gestational cocaine- and saline-treated animals. Conversely, in vitro dopamine/serotonin activation via amphetamine superfusion dramatically increased the release of vasopressin into the anterior hypothalamus. Together these data suggests gestational cocaine exposure facilitates offensive aggression by influencing the development and dopaminergic modulation of the vasopressin neural system.

**Aggression in Animals****ADOLESCENT COCAINE EXPOSURE, SEROTONIN / VASOPRESSIN AND AGGRESSION IN HAMSTERS**

Lesley A. Potter &amp; Richard H. Melloni, Jr.

*Northeastern University, USA*

Repeated low dose cocaine treatment during adolescence facilitates offensive aggression in male Syrian hamsters (*Mesocricetus auratus*). The present study examined the hypothesis that exposure to cocaine during adolescent development predisposes hamsters to heightened levels of aggressive behavior by influencing the development and activity of the anterior hypothalamic serotonin and vasopressin neural systems. In a first series of experiments, adolescent male hamsters were treated with low dose cocaine and then tested for offensive aggression in the absence or presence of selective vasopressin receptor antagonists or serotonin receptor agonists. Saline-treated hamsters showed high levels of offensive attack, while treatment with vasopressin antagonists and serotonin agonists attenuated the cocaine-facilitated aggressive response. In a second set of experiments, hamsters were administered low dose cocaine or saline throughout adolescence, tested for offensive aggression, and then examined for changes in anterior hypothalamic serotonin and vasopressin innervation and levels. Aggressive cocaine-treated hamsters showed significant reductions in serotonin afferent innervation to the anterior hypothalamus, while no differences in vasopressin innervation or levels were detected in this same brain area. A third set of experiments assessed whether adolescent cocaine exposure altered the dynamics of vasopressin release from anterior hypothalamic brain slices of aggressive, adolescent cocaine-treated animals and non-aggressive saline-treated sibling controls using in vitro superfusion. Anterior hypothalamic brain slices from aggressive, adolescent cocaine-treated animals showed significant increases in the stimulated release of vasopressin. Together, these results support a role for altered anterior hypothalamic serotonin and vasopressin development and function in adolescent cocaine-facilitated offensive aggression.

**Sex differences and similarities in aggression: correlates and consequences from infancy to mid-life****GENDER DIFFERENCES IN PHYSICAL AGGRESSION AT 17 MONTHS OF AGE:  
RESULTS FROM THE LONGITUDINAL STUDY OF CHILD DEVELOPMENT IN QUÉBEC**

Raymond Baillargeon  
*Université de Montréal, Canada*

It is generally believed that gender differences in disruptive behavior problems are not present in children before 3 years of age. However, the results from epidemiological studies of behavior problems in preschool-aged children are inconsistent. One factor that may explain these discrepancies is that the specificity and/or sensitivity of the behaviors used to assess physical aggression may well vary between boys and girls. Our objective is to illustrate how to compare the prevalence of physical aggression between boys and girls while taking this into account.

**Sex differences and similarities in aggression: correlates and consequences from infancy to mid-life****DEVELOPMENTAL PATHWAYS OF DIFFERENT AGGRESSIVE BEHAVIORS:  
GENDER DIFFERENCES AND SOCIAL FUNCTIONS**

Hongling Xie & Beverley D. Cairns  
*University of North Carolina at Chapel Hill, USA*

Using data collected in the Carolina Longitudinal Study, we examine gender differences in the developmental continuity of aggression from childhood to adulthood. In general, more robust predictions from childhood to adulthood are found among boys than among girls. Boys and girls also showed different developmental trajectories of aggression towards violent crime in early adulthood. We speculate that observed gender differences may be attributed to the developmental dimorphism of aggressive behaviors among girls during early adolescence. Instead of direct confrontations (e.g., physical aggression), adolescent girls start to use subtle forms of anger expression such as social aggression. Further, we propose that socially aggressive behaviors and physical aggressive behaviors serve different functions and have different sequelae in development. Given the nonconfrontational nature of socially aggressive behaviors and the prevalent use of social aggression rather than physical aggression among adults, social aggression may be normative in development.

**STABILITY OF AGGRESSIVE BEHAVIOR AND ITS RELATION TO PSYCHOSOCIAL FUNCTIONING  
IN WOMEN AND MEN IN THE FINNISH LONGITUDINAL STUDY**

Katja Kokko and Lea Pulkkinen  
*University of Jyväskylä, Finland*

In the Jyväskylä Longitudinal Study of Personality and Social Development, in which the same, originally 8-year-old individuals (N = 369), have been followed at ages 9, 14, 27, 36, and 42, information about aggressive behavior has been gathered by means of teacher ratings and peer nominations in childhood and adolescence, and by self-report questionnaires (Buss & Perry, 1992) in adulthood. Prior studies with the longitudinal data have shown equal stability of peer nominated aggression in boys and girls from childhood to adolescence (Pulkkinen & Pitkänen, 1993). In the present study, our first aim is to investigate the stability of self-reported aggression in adulthood. Another aim is to investigate whether aggressive behavior at different ages relates to psychosocial functioning, such as career instability, problem drinking, and criminality, equally in men and women.

**Gang Membership and Aggressive Behavior in a Developmental Perspective****THE IMPACT OF GANG MEMBERSHIP ON PATTERNS OF OFFENDING**

Terence P. Thornberry

*University at Albany, USA*

Shawn Bushway, Marvin D. Krohn, Alan J. Lizotte

Recent literature suggests that membership in adolescent street gangs facilitates involvement in delinquent behavior. We know less, however, about whether that behavior is maintained after the period of membership and whether these processes vary for instrumental crimes like drug selling and expressive crimes like assault. The present study investigates these issues using data from the RYDS, a longitudinal examination of the causes and consequences of delinquency.

**YOUTH GANGS AND VIOLENT BEHAVIOR:  
RESULTS FROM THE MONTREAL LONGITUDINAL EXPERIMENTAL STUDY**Uberto Gatti<sup>1</sup>, Frank Vitaro<sup>2</sup>, Richard E. Tremblay<sup>2</sup> & Pierre McDuff<sup>2</sup><sup>1</sup>*University of Genoa, Italy*<sup>2</sup>*Université de Montréal, Canada*

The results yielded by this analysis of the data from the Montreal Longitudinal Experimental Study confirm the findings of numerous earlier studies conducted in the United States that youths who belong to a gang display far higher rates of delinquent behavior (person crime, property crime, drug use) than non-gang members. These results were particularly relevant because of the type of sample, which was made up of French-speaking youths whose parents were born in Canada.

Following the method used by Thornberry (1993,1998), the study tested which explanatory model (selection, facilitation or enhancement) best explained the higher level of delinquency among gang members. With regard to person and property crimes, it can be claimed that youths who join gangs display a higher level of delinquency also in the years preceding membership, but that joining the gang exacerbates their deviant behavior (enhancement model). The results of multiple regression analysis reveal the criminogenic influence of the gang independently of the other risk factors (previous delinquency, disruptiveness, lack of parental supervision). Finally, gang membership emerges as a significant predictor of the frequency of delinquency, above and beyond the effects of having delinquent friends.

**Gang Membership and Aggressive Behavior in a Developmental Perspective****THE IMPACT OF GANG MEMBERSHIP ON ADOLESCENT VIOLENCE TRAJECTORIES**

Karl G. Hill, J. Guo, David J. Hawkins & Chung Ick-Joong  
*University of Washington, USA*

The linkage of gang membership and delinquency is well established (Battin, et al., 1998; Spengel, 1990; Thornberry, et al., in press). This paper examines this relationship from a developmental perspective. Prior research in the Seattle Social Development Project identified different trajectory groups of adolescent offending (Chung, et al., 2002). The present study uses longitudinal data to examine violence trajectories in adolescence, and to examine the impact of gang membership as a time-varying event on violence trajectory membership. Data were from the Seattle Social Development Project, an ethnically diverse, gender balanced sample (n=808) which was selected to over-represent students from schools serving high crime neighborhoods and followed prospectively from age 10 to adulthood. Using semi-parametric group-based modeling (Nagin 1999; Nagin and Land, 1993) we identify distinct trajectories of violent offending during adolescence (age 13-18). A new procedure to examine time-varying covariates is then employed to examine the impact of gang membership as a time-varying event on these violence trajectories. Implications for the development of gang prevention interventions are discussed.

**ON THE IMPACT DELINQUENT PEER GROUPS ON PHYSICALLY AGGRESSIVE BEHAVIORS  
DURING ADOLESCENCE : A DEVELOPMENTAL TRAJECTORY APPROACH**

Éric Lacourse<sup>1</sup>, Daniel Nagin<sup>1</sup>, Frank Vitaro<sup>2</sup> & Richard E. Tremblay<sup>2</sup>  
<sup>1</sup>*Carnegie Mellon University, USA*  
<sup>2</sup>*Université de Montréal, Canada*

Being part of a delinquent group has been shown to facilitate the expression of an individual's own delinquent propensities. However, this facilitation effect has not been investigated from a developmental perspective within a population heterogeneity model. Using a semi-parametric mixture model with data from the Montreal Longitudinal Experimental Study, this presentation addresses important issues in the developmental trends of membership to delinquent groups and physical aggression. We explore how the rate of physically aggressive behaviors follows delinquent peer group membership and investigate a differential facilitation effect of delinquent peers on physically aggressive behaviors across multiple developmental pathways. Results are discussed from a Social Interactional perspective.

**Cognitive rigidity and self-deception: Implications for social and interpersonal aggression****COGNITIVE RIGIDITY AND SELF-DECEPTION:  
IMPLICATIONS FOR SOCIAL AND INTERPERSONAL AGGRESSION**

Jordan B. Peterson  
*University of Toronto, Canada*

Complexity manifests itself in error, or anomaly. When we attempt to fulfill a given desire, and fail, our plans have gone wrong, by our own necessary definition. The complexity underlying our limited understanding is insufficiently mapped. Failure is frightening and punishing. Anomaly-motivated exploration and re-mapping is effortful and frightening. It is therefore easily avoided. Avoidance of error-exploration has three consequences: (1) increased authoritarian rigidity of conceptualization and action, as adaptation becomes brittle; (2) increased existential fear and hostility, as the world increasingly fails to fulfill desire; (3) increased weakness of individual personality, as fear and indolence in the face of error produces withdrawal, instead of advance. Such avoidance heightens the probability of vengeful aggression, both narrowly intrapersonal (antisocial) and broadly social.

**FAILURE TO DEVELOP CONSCIENCE: SELF-DECEPTIVE COPING STRATEGIES  
IN HIGHLY AGGRESSIVE INDIVIDUALS**

Matt Shane  
*University of Toronto, Canada*

Authoritarian parental styles, as well as abuse, neglect, and inconsistent parenting have all been commonly implicated as factors that may promote aggression. The specific mechanisms by which this linkage occurs are not yet well understood. One possibility is that children who experience early childhood trauma or neglect may develop means of coping with their situation by which they become capable of dissociating themselves from their emotions. This strategy - often dubbed repressive coping - allows the child to reduce conscious reflection on punishment or cues for punishment, thereby reducing the short-term impact of these negative stimuli on arousal and emotion. Though this coping strategy may prove adaptive in the child's early traumatic environment, it may become less and less so as the child matures, limiting attainable level of emotional and moral development, and increasing the likelihood of future aggressive behavior.

**Cognitive rigidity and self-deception: Implications for social and interpersonal aggression****IMPULSIVENESS AS AN EMERGENT TRAIT OF THE BIG FIVE**

Colin G. DeYoung  
*University of Toronto, Canada*

Impulsiveness is associated with aggressive behavior. Some personality theorists have also posited that it constitutes a basic personality trait, with a specific biological substrate. From the perspective of the Five Factor Model of personality (Big Five), however, impulsiveness appears to be a phenomenon that emerges as the result of an interaction between more basic traits, with multiple biological substrates. Specifically, impulsiveness appears to accompany a profile of low Stability and high Extraversion. Stability is a higher-order personality trait, comprising Emotional Stability (Neuroticism reversed), Agreeableness, and Conscientiousness, which may be mediated by serotonergic function. Extraversion, by contrast, appears associated with approach behavior and incentive motivation, and has been convincingly linked to dopaminergic function. In one of the most common measures of the Big Five (the NEO PI-R), Impulsiveness is considered a facet of Neuroticism. However, factor analyses demonstrate that Impulsiveness also loads heavily on Agreeableness, Conscientiousness, and Extraversion. Questionnaire and behavioral studies suggest that impulsiveness emerges from heightened levels of incentive motivation, in conjunction with a lack of stability or constraint.

**AUTHORITARIANISM, SELF-DECEPTION AND AGGRESSION**

Maja Djikic  
*University of Toronto, Canada*

Altemeyer's Right-Wing Authoritarianism Scale (RWA) is universally regarded as a great improvement over its methodologically and theoretically flawed predecessor Adorno's F-scale. One of three main factors of authoritarianism in Altemeyer's model - "Conventionalism" - literally means unquestioning acceptance of socially accepted norms. Furthermore, Authoritarians, defined by Altemeyer's criteria, manifest a multiplicity of double standards and blind spots, and appear characterized by selective inattention to negative information about themselves. In addition, authoritarians refuse to explore their shortcomings, when presented with the opportunity to do so. These self-deceptive tendencies can be profitably discussed with regards to Authoritarianism in the context of a wider social desirability literature, with particular focus on self-deception as a process mediating maintenance of rigid personality structure through defense against perceived threats to self.

**Language and Aggression****IS VERBAL AGGRESSIVENESS SERIOUS? A PERSPECTIVE IN THE STUDY ON AGGRESSION**

Long-quan Cai  
*Shanghai Teachers University, China*

**1. Why should we study verbal aggressiveness?**

Human speech can be aggressive. Like many other human social acts inappropriately or impolitely executed, it becomes aggressive on the one hand and provokes aggressive acts of the other party on the other. Unfortunately, it falls out of the attention of research in the field of aggression. This paper attempts to explore the verbal aggressiveness in terms of aggression in general. It will analyze the aggressiveness in verbal communication and its cause to other aggressive acts.

**2. What is verbal aggressiveness?**

Verbal aggressiveness refers to those speech acts that carry underlying aggressive force in speech communication. This underlying aggressive force can further be seen in two sorts of speeches. One is a speech that is aggressive in itself. It can be a speech of insult, curse, or even assertion. The speaker may use words of such that result in aggression on the hearer. The other speech is closely related to the former, but differs from it. When the speaker uses aggressive words, his/her speech provokes aggression in the hearer's responsive acts. The stronger the verbal aggressiveness is, the higher the possibility for aggressive reaction.

**3. How is the experiment on verbal aggressiveness?****3.1 Experiment**

The experiment is composed of four parts. One is a Discomfort Word Judgment test, another is a questionnaire containing 24 questions concerning respondents' evaluation of different speech acts. The third is an observation on participants' behavioral reactions. Comparison is made between the experiment group and the control group. The last one is analyses of movies that exhibit scenarios of aggressive reactions initiated or caused by verbal aggressiveness.

**3.2 Subjects**

The Discomfort Word Judgment test involves 26 junior English majors, the questionnaire is done by 52 middle school students, the 26 junior English majors, and 20 spare school learners aged from 17 to 26.

**3.3 Results**

The results show that respondents don't like impolite speeches, they are allergic to words of insult and curse, they are disgusted at dirty words, and they report that they are inclined to have aggressive reactions against the speaker when they are challenged by these speeches.

Respondents also report that they believe that polite speech can reduce, if not totally prevent, aggressive behaviors and human conflicts. They all agree that verbal aggressiveness should be avoided, or speech bearing such trace should be rephrased, if people like to keep staying together comfortably.

**4. More research warrants attention!**

Our finding is fairly limited, mainly obtained from Chinese respondents, although one may readily observe aggression initiated by verbal causes in countries of different cultures. There are lots of causes to aggression, we believe. But we find that if words are not carefully handled, they are most likely used as swords.

**Language and Aggression****PREDICTORS AND CORRELATES OF PHYSICAL AND VERBAL AGGRESSIVE BEHAVIORS  
IN A NORMATIVE SAMPLE OF ADOLESCENTS IN QUEBEC**

René Carbonneau, Nadine Lanctôt, Nathalie Fontaine,  
Richard E. Tremblay & Frank Vitaro  
*Université de Montréal, Canada*

The aim of the present study was to examine the predictors and correlates of physical and verbal aggressive behaviors in a normative sample of adolescents from the province of Quebec, Canada. Subjects were 1000 boys and 1000 girls part of an ongoing longitudinal study who were followed-up from kindergarten to the middle of adolescence. The prevalence of physical and verbal aggressive behaviors is first examined separately for boys and girls. Individual, familial and social correlates of these behaviors are presented, in order to provide a general profile of maladjustment associated with the different types of aggressive behaviors in adolescence. Finally, longitudinal predictors of physical and verbal aggressive behaviors are examined between kindergarten and adolescence. Analyses were performed separately for boys and girls. Results are discussed in terms of gender differences and in the perspective of guiding preventive and treatment programs of aggression in this population.

**CHANGE IN AGGRESSIVE CHILDREN'S VERBAL ABILITIES FROM PRESCHOOL TO ELEMENTARY SCHOOL.**

Nathalie Hudon, Sophie Parent, Sylvie Normandeau  
*Université de Montréal, Canada*

Marc Bigras, *Université de Sherbrooke, Canada*

France Capuano, *Université du Québec à Montréal, Canada*

Several studies have shown that aggressive children are more likely to present deficits in verbal abilities starting at preschool age. It has been suggested that an increase in these difficulties should be observed during the transition to elementary school (Parent, Larivée and Pelletier, in preparation). The goal of this study is to assess change in aggressive children's verbal abilities during the transition from preschool to elementary school. Data have been collected for a sample of 259 children coming from low socio-economic areas around the city of Sherbrooke (Québec). All of these children were admitted into a 4-year-old preschool program and were followed from the beginning of this program through their first year of elementary school. Children have been observed five times: At fall and spring time of their 4-year-old preschool program, at fall and spring time of their 5-year-old preschool program and at fall of their first year in elementary school. The French version of the PPVT-R and the WPPSI have been used to assess verbal abilities; the SCBE (LaFrenière and Dumas, 1995) has been completed by teachers and mothers to evaluate aggressiveness. Repeated measures MANOVAs have been performed in order to examine changes in verbal abilities according to aggressiveness level ("aggressive", "aggressive-home", "aggressive-school", "not-aggressive"). Results indicated that verbal abilities of aggressive children differed as a function of the context where they express aggressiveness (school versus home). The implication of the results for school adaptation is finally discussed.

**Language and Aggression****CHARACTERIZING THE BASIC LANGUAGE ABILITIES OF PRESCHOOL CHILDREN WITH VARYING LEVELS OF AGGRESSIVE AND HYPERACTIVE BEHAVIORAL TRAJECTORIES**

Sophie Jacques<sup>1</sup>, Jean R. Séguin<sup>1</sup>,  
Philip David Zelazo<sup>2</sup>, & Richard E. Tremblay<sup>1</sup>

<sup>1</sup>*Université de Montréal, Canada*

<sup>2</sup>*University of Toronto, Canada*

Language is an important cognitive tool because it can be used as a representational device. Moreover, because arbitrary linguistic symbols share no physical resemblance to the concrete stimuli that they represent, a direct consequence of using such symbolic representations may be that it allows individuals to create distance between them and the stimuli. As a result, they are no longer bound to respond to the stimuli themselves. Therefore, language-and its effective use-may be important contributors to the development of self-regulation in children. According to Tremblay et al. (1997), preschoolers exhibit the highest levels of aggressive and hyperactive behaviors of any age group. If language contributes to the development of self-regulation, then it may not be a coincidence that the end of the preschool period is marked by important changes in language and by significant reductions in these problem behaviors. To determine whether basic language abilities are related to preschoolers' tendency to display these behaviors, we classified 202 preschoolers in terms of their aggression and hyperactivity using developmental trajectories based on repeated maternal ratings, and we examined the language abilities (as assessed longitudinally at 30, 42, and 60 months) of children in each of the trajectories. We found that preschoolers who exhibited moderate and high levels of aggression had poorer language abilities than those who exhibited low levels, and these language abilities varied as a function of sex: Boys who exhibited low levels of aggression had especially good language abilities, whereas girls who exhibited high levels of aggression had especially poor language abilities. Language abilities did not vary as a function of hyperactivity trajectories. The results support the hypothesis that language may contribute to children's ability to regulate their physical aggression.

## The Beginnings of Aggression and Conflict in Infancy

Dale Hay  
*Cardiff University, UK*

The origins of aggression lie in the earliest months of life. Various dimensions of the prenatal and postnatal environment affect the developing infant's abilities to regulate emotion and direct attention. The influence of early social experiences on an individual's propensity for violence can be seen more than a decade later. It is important to examine these risk factors with reference to normative changes in aggression in the early years of life. Observational studies of infants and toddlers with their peers and siblings show that physical force is used intentionally and strategically (and therefore may qualify as a precursor to more serious aggression). Individual differences in the use of force against others can be identified as early as the first birthday. Gender differences are not marked, and girls' early aggression is stable across situation and over time. A theoretical account of the early development of aggression is proposed that takes into account the influence of early risk factors on vulnerable infants and the effects of early individual differences on the socialisation practices that are used to discourage (or in some families encourage) aggression.

**Information Processing Models of Antisocial Behaviors: Relevance to Violence****THE INTERACTION OF DISTORTED SOCIAL COGNITIONS AND AFFECTIVE REACTIONS  
IN PROMOTING AGGRESSIVE BEHAVIOR**

L. Rowell Huesmann  
*University of Michigan, USA*

While deficits in intellectual functioning are clearly correlated with the propensity of an individual to behave aggressively, many intellectually competent children develop strong aggressive tendencies, and many intellectually incompetent children do not display notable aggression. A number of theorists have recently focused on distortions in cognitive schema and information processing as a central element in the development of aggression in such children (e.g. Dodge, 1993; Huesmann, 1988, 1998). These models view social interactions as social problem solving situations in which cue evaluation and interpretation, script generation, script evaluation, behavior, and outcome evaluation are programmed steps through which behavior is determined. Individual differences are represented both by differences in executive functioning (e.g. depth of search, breadth of search, persistence) and by differences in cognitive schema utilized in these information processes (e.g. world schemas [hostile vs. benign], repertoire of scripts, normative beliefs, outcome expectations). In the current paper the origins of individual differences in these elements are elaborated by combining elements of a biosocial evolutionary perspective with social learning theory. Additionally, the model is expanded to better encompass the key role that negative affect and poor affect regulation seem to play in aggressive responding. In particular, it is proposed that the affective activation associated with generation of particular scripts serves as an important component of the evaluation of scripts. The vicarious affective experience elicited by consideration of the script and its expected outcome may inhibit or promote the execution of the script.

**EXECUTIVE FUNCTIONING IN ADHD AND ASSOCIATED DISORDERS**

Joseph Sergeant  
*Vrije Universiteit, The Netherlands*

In recent years interest in the relationship between brain and behavioural functioning has increased with respect to Attention Deficit/Hyperactivity (ADHD). One hypothesis has been that AD/HD is a disorder of the frontal cortex. A second hypothesis has been that AD/HD is a disorder of the basal ganglia. A third hypothesis is that a wide variety of the behavioural manifestation of AD/HD may be explained by both the cerebellum and reticular formation. Common to these hypotheses is the concept of Executive Functioning (EF).

A concept's usefulness can be determined by how it can explain differences in a variety of psychopathologies. EF has been used as an explanatory concept in various pathologies. A selective review of research in EF is given for AD/HD, Oppositional Defiant Disorder (ODD), Conduct Disorder (CD), Higher Functioning Autism (HFA) and Tourette syndrome. This presentation is restricted due to changes in the classification of the disorder in recent years and secondly the heterogeneity of EF is restricted to six key areas of concern: inhibition, set shifting, working memory, planning, and fluency.

This review makes clear that there are strong differences between child psychopathological groups and controls in EFs. A key issue in this field is how specific is the executive function profile claims for each of the child disorders. The current findings will be briefly linked to some neural imaging studies.

**Information Processing Models of Antisocial Behaviors: Relevance to Violence****RELATIONS OF AGE AND ABUSE TO EXECUTIVE FUNCTIONS IN BOYS  
WITH AND WITHOUT EXTERNALIZING BEHAVIOR PROBLEMS**

Enrico Mezzacappa  
*Harvard Medical School, USA*

Children who have experienced abuse show more aggressive, disruptive, and impulsive behaviors than those who have not experienced such treatment.

Effective development of executive functions is essential to well-regulated, adaptive pro-social behavior. Child abuse may negatively influence development of executive functions, which in turn could predispose children to symptoms commonly associated with poor self-control, including aggression and other destructive behaviors.

We studied executive functions in 126 boys, 6 to 16 years of age, who attended public schools and therapeutic schools for children with emotional and behavioral problems. Children were further grouped on the presence or absence of substantiated abuse histories.

Controlling for IQ and medication treatment, we found that therapeutic school children demonstrated comparable levels of internalizing and externalizing symptoms, redirections to task during testing sessions, and mean performance in the capacity to inhibit an act in progress and to passively avoid responses associated with adverse consequences, that were all significantly poorer than those of the public school children.

However, children from therapeutic schools with histories of substantiated abuse showed diminished expected improvements with increasing age in the capacity to inhibit an act in progress and to passively avoid responses associated with adverse consequences when compared not only to the public school children, but to the children from the therapeutic schools without histories of abuse as well.

Our findings suggest that child abuse may impair the development of executive functions, which in turn may predispose children to a range of poorly controlled behaviors, including aggression.

**Information Processing Models of Antisocial Behaviors: Relevance to Violence****INCIDENTAL ATTENTIONAL PROCESSES AFFECTING SELF-REGULATION IN PSYCHOPATHIC OFFENDERS**

Joseph P. Newman  
*University of Wisconsin, USA*

Psychopathic offenders are 2-3 times more likely than other offenders to commit violent offenses. However, their violence is merely one of many expressions of their disinhibited behavior that typically includes extensive criminal behavior, problematic substance use, and chronic irresponsibility. Understanding the violent behavior of psychopaths, therefore, appears to require elucidation of their more general proclivity to act on urges without adequate restraint.

Our research with psychopathic and nonpsychopathic offenders identified using Hare's (1991) Psychopathy Checklist indicates that psychopaths display a situation-specific obliviousness to inhibitory stimuli, emotion cues, semantic associations, and incongruent information that short-circuits behavioral regulation (see Newman & Lorenz, 2001). Although psychopaths can use effortful processing resources and selective attention to perform most tasks as well or better than controls, their primary task performance (i.e., goal-directed behavior) is essentially unaffected by incidental information that serves to modulate the behavior of nonpsychopathic individuals.

This presentation will focus on three experimental paradigms that have revealed reliable performance deficits in psychopathic offenders and which illustrate their failure to accommodate incidental information. Relative to controls, psychopaths display less emotional facilitation on lexical decision tasks, less interference on picture-word Stroop tasks, and more commission errors on passive avoidance tasks.

I conclude that psychopaths' difficulty utilizing incidental information undermines their behavioral regulation and facilitates expression of their aggressive urges.

**The Development of Anger and Aggression****THE DEVELOPMENTAL CONNECTION BETWEEN ANGER AND AGGRESSION**

Willem Koops

*Utrecht University, The Netherlands*

Aggression is a poorly defined behavioral category. Almost all of the usual definitions confuse aggression with various types of socially undesirable behavior. It is proposed in this paper to define aggression as "behavior that stems from anger". From this definition it is possible to distinguish both prosocial and antisocial aggression, and it is also possible to study aggression from birth onwards. Another advantage of the proposed definition is that the rich research literature on the development of aggression is linked to the rapid expansion of insights into emotional development that has taken place within developmental science during the last ten years.

The search for causes of the development of aggression requires the careful designing and evaluation of intervention programs. Until now, however, such programs have not been founded on longitudinal data on behavior that stems from anger. It is to be expected that effective programs can only be built on the data on individual development of aggression. Given the involvement of anger as an emotional basis, the social emotions of guilt and shame can clearly be expected to provide levers for effective interventions.

**AGGRESSION: REGULATING AND REGULATED**

Jan A.R.A.M. van Hooff

*Utrecht University, The Netherlands*

From a biological perspective aggression is to be considered as part of the behavioral equipment with which an individual influences the motivation of conspecifics and regulates its relationships with them.

Lately we have come to realize that aggression is embedded in more complex behavioral strategies and is regulated in that context. Most animals live as members of a social community in spite of the fact that this entails within-group competition and conflicts of interest. An individual will remain a member of that community as long as the benefits of membership outweigh the disadvantages. In as far as it profits from that community it has to be concerned that the members of that community remain interested in contributing their share to the maintenance of the community. This implies moderation of selfish impulses. Recent research on phenomena such as reconciliation after aggressive conflicts shows how the expression of aggressive tendencies is regulated. It suggests that in animal societies the defense of short term interests is modulated by a concern for the quality of relationships and the value of the social network, a concern which is shared by other group members and is the basis for 'moral control'.

**The Development of Anger and Aggression****ANGER AND AGGRESSION IN BOYS REFERRED FOR AGGRESSIVE BEHAVIOR PROBLEMS**

Bram Orobio de Castro &amp; Willem Koops

*Utrecht University, The Netherlands*

Numerous studies have demonstrated relations between aggressive behavior and social information processing. These studies have, however, generally used rather arbitrary operationalisations of "aggressive responses". Moreover, this research has predominantly focused on conscious, rational decision making processes. Therefore, we know little about the roles of emotion in social information processing and aggressive behavior problems, even though major treatment programs emphasize the importance of emotions and emotion-regulation in aggressive behavior (e.g. PATHS and Anger Coping).

We aimed to address these caveats in four ways. First, we constructed empirically-based scales for aggressiveness of responses as rated by both perpetrators of aggressive acts and their victims. Second, we presented these scales to 7 to 12 year-old boys referred for severe aggressive behavior problems and normal comparison groups, and assessed self-reports of emotions, emotion attributions, emotion-regulation skills, and behavioral responses. Third, we induced negative emotions in boys with aggressive behavior problems and a normal comparison group, and assessed the influence of these negative emotions on social information processing. Third, we studied the influence of emotion-regulation prompts on the aggressiveness of these boys' response to vignettes of social conflicts, by stimulating self-monitoring of anger.

Results of these studies indicate that perpetrators and victims largely agree on the aggressiveness of different behaviors. In reaction to vignettes portraying social conflicts, compared to non-aggressive peers, boys with aggressive behavior problems became more angry, coped less adequately with their anger, responded more aggressively, and more often indicated feeling 'forced' to act aggressively by intense anger. These effects were exacerbated by attributions of malicious delight and hostility to other children and by induction of negative emotions.

**The Development of Anger and Aggression****ANGER COPING, AGGRESSION AND PREVENTION OF DELINQUENCY AND SUBSTANCE USE**

John E. Lochman  
*University of Alabama, USA*

Karen C. Wells  
*Duke University, Durham, USA*

The Coping Power program has been developed to impact the social-cognitive deficiencies, anger management difficulties, and poor parenting practices evident in aggressive elementary-school children and their families. In a first controlled intervention trial at a one-year follow-up, the Coping Power program has produced preventive effects on youths' self-reported delinquency and on youths' and parents' reports of youth substance use. The full Coping Power program, with child and parent intervention components, produced stronger effects on some outcomes than did the child component by itself. In a second controlled intervention trial, nesting the Coping Power program within an universal intervention produced stronger follow-up effects on delinquency than did the Coping Power program delivered by itself. The implications of outcome and mediational analyses will be discussed.

**Prevention of Aggression During Early Childhood****EFFECTS OF PARENTING TRAINING ON THE REDUCTION OF AGGRESSION IN HEAD START CHILDREN**

Nazli Baydar, Carolyn Webster-Stratton & M. Jamila Reid  
*University of Washington, USA*

This manuscript investigates the effectiveness of The Incredible Years Parenting Training program for reducing aggression in Head Start children. We expected that reductions in parents' coercive discipline would lead to subsequent decreases in children's aggressive behaviors. The data were from a preventive intervention that provided parenting training to socio-economically disadvantaged parents who had children in Puget Sound Head Start centers. The data were analyzed using Structural Equation Models (SEMs) that allowed for the joint modeling of data from the children whose families dropped out of the study as well as those who completed the assessments. Furthermore, the SEMs allowed the joint modeling of different indicators of aggressive behaviors that were provided by parents, teachers, and observers. In addition to the impact of the prevention program, the effects of parents' program engagement were investigated.

Intervention parents reduced their negative parenting behaviors and this had a significant impact on the children's aggressive behaviors. Furthermore, there was a dose-response to the intervention program, with parents who attended more training displaying more reduction in negative parenting behaviors than parents who attended fewer sessions.

These results have important implications for service providers who serve low income families, because they demonstrate the effectiveness of a relatively inexpensive parenting training program that was voluntarily attended by the parents. Furthermore, the beneficial effects of the program on parent and child outcomes implies that elevated levels of aggression often seen in economically disadvantaged children are at least, in part, preventable.

**EXPLORING DIMENSIONS OF FAMILY PROCESSES IN AFRICAN AMERICAN FAMILIES:  
RELATIONSHIPS TO COMPETENCE, ACHIEVEMENT AND PROBLEM BEHAVIOR IN YOUNG CHILDREN**

Emilie Phillips Smith, Jean E. Dumas, Ronald J. Prinz & James Laughlin  
*Division of Violence Prevention/NCIPC/CDC, Atlanta, USA*

This study explored the assessment of family processes for a sample of African American kindergarten children, parents, and teachers involved in the EARLY ALLIANCE prevention trial. Using modified versions of the FAM, FACES, Family Beliefs Inventory and the Deviant Beliefs measure, internal consistency analyses along with exploratory and confirmatory factor analysis provided empirical support for a cohesion factor (cohesion and communication), structure factor (support and organization), positive beliefs factor (on family purpose and child development), and deviant beliefs factor. These measures of family processes were related to child social and academic competence, problem behavior, and early reading achievement. Family structure (support and organization) was related to parent and teacher reported competence and behavioral outcomes, providing support for this construct as an important aspect of family process. Family cohesion and communication, along with beliefs were also related to youth competence and behavior. This work begins to examine specific dimensions of family processes and their relationships to important adaptive and less adaptive child outcomes. Other dimensions may be identified and examined in future research with families of color.

**Prevention of Aggression During Early Childhood****PLAY NICELY: AN INTERACTIVE CD ROM THAT TEACHES THE BASICS  
IN AGGRESSION MANAGEMENT IN YOUNG CHILDREN.**

Seth J. Scholer

*Vanderbilt University School of Medicine, USA*

The author will present Play Nicely, an interactive, media-rich, CD that teaches the basics in aggression management in young children ages 1-7. Experts generally agree that violence prevention needs to begin in the early years. In a 1999 policy statement, the American Academy of Pediatrics (AAP) recommended that health care providers screen all young children for aggression and counsel accordingly during well child visits. However, challenges to the health care provider include office time constraints and possible lack of training in the area. To overcome these obstacles, Play Nicely is one option that can be considered.

In the interactive part of the program, viewers are asked, "Assume you see your child hurt another. What should you do?" Viewers are then given multiple options to respond and hear feedback. Program content for the CD has been derived primarily from material from three organizations: the American Psychological Association, the American Academy of Pediatrics, and the National Association for the Education of Young Children. Feedback has also been obtained from dozens of experts. The author has given particularly strong weight to feedback from experienced child care workers and/or preschool teachers. Although the program was initially developed to help physicians and parents with the AAP recommendation, the program has potential widespread applicability to other groups including child care workers, teachers, psychologists, and other counselors. To meet the different educational needs of these groups, separate educational tracks on the same CD have been created for parents, health care professionals/counselors, and child care workers/teachers.

**INTERACTIVE TRAINING FOR THE PREVENTION OF AGGRESSION PROBLEMS IN EARLY CHILDHOOD**

Jean Gervais

*Université du Québec à Hull, Canada*

The Québec "Centres for Early Childhood" were created to promote the healthy development of children. Helping professionals who work in these centres, as well as parents, to understand the development of aggression during early childhood could help prevent the development of chronic physical aggression trajectories. We are creating an interactive CD Rom, based on present knowledge of the development of physical aggression and intervention techniques, that will guide professionals in their work with preschool children and their parents. Specific aspects of the development of aggression (for example, the impact of anger) and its prevention (i.e. how to organize the child's physical and social environment in order to prevent aggressive behavior) will be addressed through interviews, video observations, questionnaires, and references. The CD will provide professionals with information regarding specific age groups, and the information will be presented at a level that should make it understandable for parents with a medium level education. We present an overview of our CD and its main characteristics.

**Peer Relations****THE PREDICTION OF AGGRESSIVE PEER VICTIMIZATION IN ADOLESCENTS: A LONGITUDINAL STUDY**

Heather K. Blier &amp; Thomas H. Ollendick

*Virginia Polytechnic Institute and State University, USA*

Given ongoing concern regarding violence among schoolchildren, researchers have investigated various forms of peer interactions, including peer victimization. Peer victimization is considered an indicator of risk of various mental disorders, poor social relations, and academic dysfunction in youths. However, victimization can take numerous forms, involving aggressive (e.g., verbal or physical bullying) and non-aggressive (e.g., ostracism) behavior. In order to appropriately predict and prevent such behavior, it may be necessary to differentiate victimization of others by more specified forms. Furthermore, as females and males evidence differences in the expression of aggressive behavior, and in associated characteristics, the role of gender in the study of peer victimization is also of importance.

The purpose of this longitudinal study is to explore early individual and psychosocial predictors of aggressive and non-aggressive peer victimization in a school-based normative sample of adolescents. Participants include 441 students (218 males, 223 females) who were evaluated in the spring of their 6th, 8th and 10th grade school years. Aggressive and non-aggressive peer victimization were differentially associated with individual characteristics and peer relationships reported in both concurrent and earlier grades. Gender differences in these relations were also identified. Specifically, females high on aggressive victimization were significantly lower than their non-aggressive peers on indices of self-competence and on sociometric measures of likeability and prosocial behavior. These youths also reported significantly higher rates of depression and evidenced greater school offenses.

Interestingly, aggressive males were less likely to differ from their non-aggressive peers on these measures. Further, both male and female students high on non-aggressive victimization were also less distinct from their peers. Results will be discussed in terms of preventions and interventions for aggression and peer victimization.

**Peer Relations****EXPERIENTIAL MODERATION OF LINKS BETWEEN AGGRESSIVE THOUGHT AND ACTION:  
THE CASE FOR PEER VICTIMIZATION**

Jenny Isaacs, Noel A. Card & Ernest V. E. Hodges  
*St. John's University, USA*

There is empirical support for the theory that social cognitions guide subsequent behavior (e.g., Bandura, 1996; Egan, Monson, & Perry, 1999). These relations, however, may hinge on certain interpersonal conditions. In the present study, it is hypothesized that children who endorse aggression encouraging cognitions should show increases in aggressive behavior over time. However, these relations should be strongest for children who do not experience victimization and weakest when children experience high levels of victimization.

Participants were 206, primarily Latino, 6th and 7th grade boys and girls. Participants completed, in the fall and spring, one self-report questionnaire that assessed children's social cognitions about aggression (Cronbach alphas ranged from .77-.87) and one peer nomination inventory that assessed aggression and victimization.

Using multiple regression, it was found that four out of the five social cognitions predicted aggression, as well as changes in aggression over time. In addition, several significant interactions emerged between the social cognitions and victimization. Follow-up tests for continuous interactions (using methods proposed by Aiken and West, 1991) revealed that, as expected, the relation between self-efficacy and aggression (concurrently and longitudinally) was maximized when children were less victimized, and was substantially minimized when children were more victimized. In addition, the relations between outcome values for rewards and victim suffering with aggression hinged on experiencing victimization in a similar fashion.

Results highlight how interpersonal conditions can provide a context for the expression or inhibition of preexisting cognitions about behavior.

**Peer Relations****VICTIMS OF PEER AGGRESSION: PEER RELATIONS AND  
THE ACTUALIZATION OF RISK AND PROTECTIVE PROCESSES**

Steve E. Weissman, Lisa B. Rosenfeld, Patricio A. Romero & Ernest V.E. Hodges  
*St. John's University, USA*

In this short-term longitudinal study, the hypothesis that individual risk and protective processes for peer victimization operate more strongly under subpar interpersonal contexts was tested with a sample of 217 primarily Hispanic boys and girls in the sixth and seventh grades. Children completed, in the fall and spring, a peer nomination inventory designed to assess five personal factors (anxiety/depression, withdrawal, aggression, physical strength, and prosocial behavior) and the degree of victimization by peers. Sociometric nominations were used to assess two interpersonal factors (peer acceptance and peer rejection). A factor analysis of the individual-level variables revealed that the five personal variables were better conceptualized as three factors: 1) Internalizing, 2) Strength/Aggression, and 3) Prosocial Behavior. A series of hierarchical multiple regression analyses were performed with spring victimization serving as the criterion variable. At Step 1, fall victimization was entered. At Step 2, one individual level variable (e.g., Internalizing) was entered with one interpersonal variable (e.g., rejection). On the third step, the product term (individual x interpersonal) was evaluated. As expected, peer rejection (but not peer acceptance) significantly interacted with the personal factors to predict changes in victimization. Simple slope analyses for continuous interactions revealed that under high levels of peer rejection, Internalizing behaviors predicted increases in victimization, while Strength/Aggression and Prosocial Behavior were negatively associated with changes in peer victimization--at low levels of rejection, these relations approached zero. Results highlight how risk and protective factors for victimization operate primarily under interpersonal contexts that condone aggression.

**Peer Relations****CHILDREN'S AGGRESSIVE BEHAVIORS IN CONTEXT: ASSESSMENT AND RELATIONS  
WITH STRUCTURE OF PEER RELATIONS IN YOUTH LEISURE CENTER**

Cécile Kindelberger  
*Université de Paris X, France*

Aggressive children may use many ways to harm their counterparts. The means could be a physical, verbal or a social aggression (this last is defined by manipulating social relations or damaging reputation of the victim). Children are prone to use rather certain kinds of aggressive behaviors, but individual differences could also lie on the context in which behaviors occur (Wright & Mischel, 1987; Ten Berge & De Raad, 1999). Many distinctions in aggressive behaviors have been proposed, embedding different variables (for review, see Kindelberger & Mallet, 2000). The present study proposes rather to assess distinction lying on structure of aggressive behaviors. It may provide an objective support to study cognitive, social or affective individual differences.

The goal of this study will first determine taxonomy of situations occurring in youth leisure center (where adolescents come in to practice sports or cultural activities during holidays or no-day school). Theoretical taxonomy implies to examine the psychological features of the situations, in order to understand why some aggressive adolescents react to certain kinds of situations and some not. The features of situations will determine the nature of aggression (e.g., aggression when emotional or social regulations are required).

Next, regular covariation between behaviors and situations will provide distinct aggressive children group. This distinction will be validate with individual characteristics such as aspects of peer relations (peer acceptance, group centrality, Cairns et al., 1988), attitudes toward peer relations (social goals, Eronen & Nurmi, 1999 ; Jarvinen & Nicholls, 1992), age and sex.

## Peer Relations

RELATIONAL AND EXPERIENTIAL PREDICTORS OF PSYCHOLOGICAL  
AND PHYSICAL AGGRESSION IN DATING RELATIONSHIPS

Georgina Hammock

*Kennesaw State University, USA*

The present study evaluated the ability of variables associated with the context in which intimate aggression occurs (i. e., the relationship) and perceptions and experiences with aggression in prior and present relationships (i. e., aggression displayed in past and present relationships along with aggressive behaviors between parents) to predict the use of psychological and physical aggression. One hundred and thirty-four males and 113 females who were currently involved in a non-marital relationship completed measures assessing relationship variables (i. e., emotional commitment to the partner, how often they see the partner, seriousness of the relationship, length of the relationship, trust in the partner, partner's use of physical and psychological aggression) as well as measures associated with parental aggression (both mother and father's use of psychological and physical aggression); experience with relationship aggression in prior relationships (i. e., past partner's and participant's use of psychological and physical aggression); and participant's aggression in the present relationship (both psychological and physical). Low levels of maternal aggression and past partner's aggression, and high levels of participant's prior use of aggression and present partner's psychological aggression predicted the use of psychological aggression in the present relationship ( $R^2 = .25$ ,  $F(12, 201) = 5.53$ ,  $p < .001$ ). Seeing the partner often, being emotionally committed to the relationship, having little trust in the partner, along with using aggression with prior partners and exposure to parental aggression and aggression from both past and present partners predicted the use of physical aggression ( $R^2 = .68$ ,  $F(12, 200) = 34.92$ ,  $p < .001$ ). Thus, different predictors were found for psychological and physical aggression.

**The Dynamic Relation Between Biology and Behavior in the Study of the Development of Aggression****CORTISOL AND BEHAVIORAL REGULATION IN THE FIRST YEARS OF LIFE:  
MARKERS OF EARLY DISRUPTIVE BEHAVIOR PROBLEMS**

Kate Keenan, Desia Young & Dana Gunthorpe  
*University of Chicago, USA*

Children reported as having a difficult temperament in the first years of life are at higher risk for behavioral and emotional problems. One aspect of difficult temperament is a deficit regulating negative emotions. Given the link between temperamental problems and behavioral and emotional problems in early childhood, it seems highly plausible that the same deficits in regulation exist in a developmentally appropriate form in infancy. For example, infants with a short latency to reach a high level of irritability and a long recovery period may prove to be at highest risk for developing behavioral and emotional problems. Thus, it seems prudent to test the hypotheses that deficits in regulatory capacities exist at birth, can be reliably identified, and can improve our ability to identify children at risk for psychopathology.

In this paper we examine the relation between cortisol and behavioral reactivity in the first year of life with early emerging disruptive behavior problems in a sample of 100 infants growing up in low-income environments. Cortisol and behavioral reactivity were measured in response to two stressors at birth, 6, and 12 months. Maternal report of externalizing behaviors problems was collected at 18 and 24 months using the Infant Social and Emotional Assessment (ITSEA). Relations between patterns of cortisol and behavioral reactivity, which are hypothesized to reflect deficits in regulation, and later developing behavior problems, are tested. In addition, effects of characteristics of the early caregiving environment on the strength of the association between infant stress reactivity and toddler behavior problems are examined.

**The Dynamic Relation Between Biology and Behavior in the Study of the Development of Aggression****NEUROENDOCRINE FUNCTIONING AND BEHAVIOR CHANGE AMONG LOW-INCOME,  
URBAN PRESCHOOLERS AT FAMILIAL RISK FOR CONDUCT PROBLEMS:  
PRELIMINARY RESULTS FROM A RANDOMIZED PREVENTION TRIAL**

Laurie S. Miller, Kathleen Kiely Gouley, Daniel S. Pine & Erin Rafferty  
*NYU School of Medicine, USA*

Parents are presumed to have a powerful influence on their children's biological and psychosocial development. However, the mechanisms by which parents influence children are not well understood. One area that has received limited attention is parents' influence on children's biological and behavioral responses to novel, stressful situations. Findings from experimental animal studies demonstrate a causal association between parenting behaviors and both behavioral and physiological responses to stress in offspring. In addition, changes in behavior are at least partially mediated by changes in the HPA axis, a key biological system involved in the regulation of stress reactivity. If these causal relations among parenting, HPA-axis functioning, and behavior are observed in humans, there are significant implications for child rearing and development. Investigating these relations in preschoolers may be particularly valuable because the majority of findings in rodents pertain to early developmental periods and, for children, the preschool years are a formative period for social, emotional, and biological development.

In this paper, we present findings from a randomized prevention trial aimed at improving parenting practices in 100 parents of preschoolers at high-risk for the development of conduct problems. Preschoolers are the younger siblings of adjudicated delinquents convicted of a crime in New York City between 1996 and 2000. We will examine pre to post-intervention changes in daily cortisol patterns, cortisol reactivity to stressful situations, parenting practices and child behavior. Findings will be discussed within the context of a larger program of prevention research for high-risk preschoolers.

**NEUROHORMONAL CORRELATES OF CONDUCT PROBLEMS  
AMONG MALE ADOLESCENTS IN A PSYCHOLOGICAL STRESS PARADIGM**

Benjamin B. Lahey, Keith McBurnett, Adrian Raine  
Magda Stouthamer-Loeber & Rolf Loeber  
*University of Chicago, USA*

From a longitudinal urban school-based sample of 503 males who were in the first grade when the study began, 335 youths were recruited for a laboratory sub-study when they were approximately 16 years of age. The youths participated in a psychophysiological assessment protocol involving two psychological stressors: (1) describing their worst experience on videotape, and (2) a count down stressor in which a loud tone could be avoided. The youths' positive and negative affect was assessed and urine and saliva were collected before and after the stressors. The youth's mean level of conduct problems across ages 7-17 years was positively related to negative affect and inversely related to positive affect during the stress procedures. Conduct problems were inversely related to post-stressor urinary epinephrine (E) levels, even when baseline E was controlled, but the association was limited to the extremes of the distributions of both conduct problems and post-stressor E. Cortisol concentrations in saliva collected approximately 25 and 45 minutes after the start of the first stressor sample were positively related to conduct problems, but only when youths with very high levels of conduct problems over time were compared to the rest of the sample.

**Continuities and Discontinuities of Aggression Throughout the Life Course and Across Generation :  
Evidence from the 40-year Follow-Up of the Columbia County Longitudinal Study****OVERVIEW OF THE COLUMBIA COUNTY LONGITUDINAL STUDY:  
HISTORY, METHODS, AND FINDINGS AT AGES 8, 19, AND 30**

Leonard D. Eron  
*University of Michigan, USA*

The Columbia County Longitudinal Study is a prospective study that now includes data on three generations of subjects with 4 waves of data on the middle generation. The study began in 1960 when the entire population of 3rd graders (N = 856) in Columbia County, NY was surveyed along with approximately 80% of their parents (Eron et al., 1971). In 1970 and again in 1981, over 400 of the original 3rd graders were reinterviewed at ages 19 and 30, and criminal justice data also were acquired (Huesmann et al., 1984; Lefkowitz et al., 1977). In 2000-2001, a new wave of interview data was collected on over 500 of the original subjects and 500 of their children. Across all waves, multiple sources for data collection were used (e.g. parent, teacher, child, peers).

In the mid 1950s when we started this study, we focused on hypotheses about the learning of aggression drawn from frustration-aggression theory. Subsequently we have adopted a more biosocial and cognitive causal perspective that emphasizes the interaction of multiple predisposing and precipitating factors. The already published findings from the first three waves of the study establish the continuity of aggression from childhood to young adulthood and indicate the importance of the interaction of predisposing factors such as IQ with socializing factors such as early parenting (punishment, rejection, identification with parents), exposure to violence (e.g. TV violence), and peer-relations in predicting later aggressive, antisocial, and criminal behavior. The new wave of data provides opportunities to investigate continuity and its moderators into mid-adulthood and across generations.

**MID-LIFE CONSEQUENCES OF CHILDHOOD AND EARLY ADULT AGGRESSION:  
CONTINUITIES, DISCONTINUITIES, AND GENDER DIFFERENCES**

L. Rowell Huesmann  
*University of Michigan, USA*

In this paper, utilizing four waves of data spanning 40 years on over 500 48-year-olds, we examine the mid-life consequences of early childhood aggression. We examine continuity both on specific measures of aggression that were given at multiple waves and on a derived latent composite measure of aggression that utilized multiple (and often different) measures of aggression at each wave. While aggression levels at this mid-point in life were generally lower than earlier in life, we found substantial continuity of aggression. The more aggressive 8-year-olds tend to grow up to be the more aggressive 49-year-olds. This continuity occurs for both genders though it is more pronounced in males particularly on physical aggression. This statistical continuity was not due to only a few high aggressives. The low aggressive 8-year-olds were more likely to be low aggressive at age 49 and those in the middle were more likely to remain in the middle. Other mid-life consequences of early aggression were found to be lower achievement in educational and occupational attainment and in the social realm. For females, also, there was a greater tendency toward other forms of psychopathology. However, we also discovered a number of factors that promote discontinuities in these trajectories for both genders. These moderators included relations with parents, social cognitions, and certain environmental factors prevalent in the subject's life.

**Continuities and Discontinuities of Aggression Throughout the Life Course and Across Generation :  
Evidence from the 40-year Follow-Up of the Columbia County Longitudinal Study****CROSS-GENERATIONAL CONSEQUENCES OF CHILDHOOD AND ADULT AGGRESSION:  
FACTORS THAT AFFECT THE RISK FOR TRANSMISSION**

Eric F. Dubow

*Bowling Green State University, USA*

In this paper, we examine evidence from the Columbia County Longitudinal Study about the continuity/discontinuity of aggression across three generations as well as factors that moderate cross-generational continuities.

Utilizing structural equation modeling, we created a composite latent trait score of aggressiveness for the subjects' children (Generation 3), assessed when the subjects were 48 years of age, and based on self, parent, and teacher assessments. We then examined continuity coefficients across the generations. The results reveal substantial continuity of aggression across generations, but consistent with the hypothesis of developmental synchrony, the correlations are highest across generations for the same developmental periods within generations, i.e., a child's (Generation 3) aggression correlates more strongly with the parent's (Generation 2) aggression when they were at approximately the same developmental levels.

Through exploratory graphical and correlational analyses, we also identify several variables that strengthen and weaken the risk for cross-generational transmission. These moderators include individual/personal variables (e.g., temperament, intellectual achievement), cognitions related to aggression (e.g., scripts, normative beliefs), and contextual factors (e.g., socioeconomic indicators, exposure to aggression via in the community and the media).

## Adolescence

**THE DISTINCTIVE SELF-PERCEPTION BIASES OF AGGRESSIVE  
AND DEPRESSED ADOLESCENTS**

Amy D. Bellmore

*University of California at Los Angeles, USA*

Antonius H. N. Cillessen

*University of Connecticut, USA*

Current social-cognitive models have posited a reciprocal relationship between social perceptions and social experiences. The goal of the current study was to assess the self-perceptions of aggressive adolescents. Because previous researchers have reported that aggressive and depressed children demonstrate different types of social perception biases, the self-perceptions of depressed adolescents were also considered. Participants completed sociometric and self-report forms in two waves of data collection in the spring of 6th and 7th grade. Participants were assigned to one of four groups based on the number of nominations they received from peers on a peer nomination item that assessed aggression ("starts fights") and their score on the Childhood Depression Inventory (CDI): Aggressive (n = 31), Depressed-Aggressive (n = 20), Depressed (n = 58), Average (n = 385). Self-perceptions in four domains (peer sociability, school competence, anxiety, disruptive conduct) were assessed. Overall, the self-perceptions of aggressive adolescents were positive. The aggressive and average groups rated themselves highest on peer sociability and lowest on anxiety and disruptive conduct. Depressed adolescents viewed themselves negatively. Both the depressed and the depressed-aggressive groups rated themselves lowest on peer sociability and highest on anxiety. Depressed-aggressive adolescents rated themselves lower than all other groups on school competence and higher than all others on disruptive conduct. The influence of aggressive behavior on subsequent self-perceptions was also assessed. 6th grade aggression predicted lower school competence and higher disruptive conduct in 7th grade over and above the contributions made to these variables by their 6th grade levels. These results suggest that the influence of social experiences on social perceptions may operate differently for aggressive and depressed adolescents. Aggressive adolescents may overlook negative social cues, and depressed adolescents may attend too closely to negative social information. The fact that the depressed-aggressive children view themselves the most negatively may suggest that the tendency to observe negative social cues overrides other biases. Future research should evaluate the long-term consequences of positive and negative self-perceptions on subsequent social behavior and adjustment.

**Adolescence****AGGRESSION, PEER INFLUENCE, AND RACIAL PREJUDICE IN ADOLESCENCE:  
TWO LONGITUDINAL STUDIES**

Jeff Kiesner, Anne Maass, and Mara Cadinu  
*Università di Padova, Italy*

Previous research has shown that ethnic and racial prejudice during adolescence is related to a variety of variables, including peer attitudes and antisocial behavior. The present studies were conducted to test for peer influence and to examine which aspect of antisocial behavior (delinquency or aggressive behavior) would most strongly predict change in ethnic and racial prejudice. In study 1, a sample of 153 middle school students (77 females) from the north-east of Italy were examined. In a multiple regression analysis the following time-1 predictors were used: (1) individual prejudice attitudes, (2) prejudice attitudes of the individual's friendship network, (3) self-reported delinquency, and (4) peer- and teacher- reported aggressive behavior. The dependent variable was the individual's prejudice one year later. Results showed that (1) time-1 prejudice significantly predicted time-2 prejudice (stability), (2) prejudice attitudes of the friendship network significantly predicted individual change in prejudice (peer influence), (3) delinquency did not predict change in prejudice, and (4) aggression did predict change in prejudice. In study 2, a different sample of 175 middle school students from Milan, Italy was examined. The same analyses were conducted and confirmed the same general pattern of results, with the exception of no significant effect of the friendship network. This finding may be explained by a higher overall level of prejudice in the second sample, limiting the possibility for peer influence. Results will be discussed in terms of the development of prejudice within the peer context and as a part of an overall pattern of aggressive behavior.

## Adolescence

**ADOLESCENTS' TARGETS OF AGGRESSION:  
STABILITY AND CHANGE IN TARGET IDENTITIES AND CHARACTERISTICS**

Noel A. Card, Jacqueline Piedrahita  
Jenny Isaacs & Ernest V. E. Hodges

*St. John's University, USA*

The stability of individual differences in aggression is strong (e.g., Olweus, 1979) but recent views of aggression as a dyadic phenomenon (e.g., Coie et al., 1999) raise important unanswered questions. To what extent do adolescents target the same individuals over time? Do adolescents target individuals with similar behavioral and social characteristics over time? When adolescents choose new targets, do they have similar characteristics as prior targets?

This study examined these forms of stability from the fall to spring of a school year among 210 primarily Hispanic sixth- and seventh-grade boys and girls. Targets of aggression were identified using a self-report measure (e.g., "I hit or push him around"). Characteristics of targets were assessed via peer nominations of victimization, aggression, anxiety/depression, withdrawal, physical strength, acceptance, and rejection.

Results indicated moderate stability in the identity of adolescents' targets. On average, individuals continued to target 32% of their fall targets in the spring. There was also moderate stability in the characteristics of adolescents' targets of aggression (stability coefficients ranged from .22 to .45,  $ps < .05$ ). However, additional analyses failed to find any significant associations between the characteristics of new targets in the spring with the characteristics of fall-only targets ( $ps > .30$ ). This pattern of results did not vary by gender. These findings are discussed in terms of factors relevant to the formation, maintenance, replacement, and dissolution of targets of aggressive adolescents. In addition, several directions for future research are highlighted.

**Adolescence****THE PSYCHOSOCIAL ADJUSTMENT OF ADOLESCENT BULLIES, BULLY-VICTIMS, AND VICTIMS.**

Andrew V. Dane, Zopito Marini &amp; Sandra Bosacki

*Brock University, Canada*

The objective of this study was to examine bullies, victims, bully-victims and a comparison group with respect to best friendship quality (support, conflict), coping behaviours and tolerance of antisocial behaviour. This was undertaken to address the controversial issue of whether bullies or aggressive children lack social competence or simply apply social skills to antisocial ends. Participants were 4674 students (2512 females) in grades 9 through OAC (Grade 13) from a larger study on youth risk behaviours. Participants completed the Bully/Victim Scale (Marini, Spear & Bombay, 1999), an adaptation of the Attitudinal Intolerance of Deviance Questionnaire (Jessor et al., 1995), the Friendship Qualities Scale (Gauze, Bukowski, Aquan-Assee & Sippola, 1996) and an adaptation of the Eisenberg Scale of Coping Behaviours (Eisenberg, 1998). Results indicated that for supportive friendship features and conflict respectively, bullies ( $M_s = 1.79, 1.72$ ;  $SD_s = .66, .60$ ) did not differ significantly from victims ( $M_s = 1.73, 1.67$ ;  $SD_s = .71, .60$ ) bully-victims ( $M_s = 1.96, 2.00$ ;  $SD_s = .65, .69$ ), or the comparison group ( $M_s = 1.59, 1.58$ ;  $SD_s = .59, .56$ ),  $F(6, 5536) = 10.80, p < .001$ . With respect to coping behaviours, bullies were less likely to use adaptive strategies ( $M = 2.64$ ;  $SD = .65$ ) and more likely to use maladaptive strategies ( $M = 3.28$ ;  $SD = .68$ ) than the comparison group ( $M_s = 2.45, 3.42$ ;  $SD_s = .56, .60$ ) but did not differ in either respect from victims ( $M_s = 2.48, 3.16$ ;  $SD_s = .60, .79$ ) and bully-victims ( $M_s = 2.70, 3.20$ ;  $SD_s = .62, .73$ ),  $F(6, 6452) = 25.71, p < .001$ . Bullies ( $M = 2.55$ ;  $SD = .61$ ) reported greater tolerance of antisocial behaviour than victims ( $M = 1.78$ ;  $SD = .59$ ), bully-victims ( $M = 2.29$ ;  $SD = .61$ ) and the comparison group ( $M = 1.83$ ;  $SD = .48$ ),  $F(3, 3437) = 136.94, p < .001$ . Consistent with previous research on aggressive children, bullies evidenced social competence within their friendships, but employed less adequate coping strategies in general and expressed greater acceptance of antisocial behaviour.

**Adolescence****ARE GENDER DIFFERENCES IN AGGRESSION GREATER AMONG ADOLESCENTS THAN AMONG ADULTS?**

Deborah South Richardson  
*Augusta State University, USA*

Laura Green  
*Georgia Board of Education, USA*

The present study investigated gender differences in reports of direct and indirect aggression by young adolescents (7th and 8th graders) and young adults (college students). Whereas direct aggression involves the delivery of verbally or physically aversive stimuli to another person in a face-to-face confrontation, indirect aggression involves delivering harm circuitously, through another person or an object (e.g., spreading nasty rumors about someone).

In general, we expected that extent of gender differences might vary with the age of the aggressor. First, we expected that young adolescents would report more aggression overall than would young adults. Further, we expected that young adolescent males would report more direct aggression than females, and those females would report more indirect aggression than the males would. We expected young adult males to report more direct aggression than young adult females, but to report similar levels of indirect aggression.

Male and female middle school and university students completed the Richardson Conflict Response Questionnaire, which measures both direct and indirect aggression. Results provided partial support for the predictions. In both age groups, males reported more direct aggression than females, with levels of such aggression being considerably higher among adolescents than among adults. Although adolescent females reported more indirect than direct aggression, males and females in neither group differed in their reports of indirect aggression. Results are interpreted in the context of recent research and theory on the development and expression of direct and indirect aggression.

**Terrorism and Justification of Aggression****ON NORMAL PEOPLE COMMITTING ACTS OF VIOLENCE: A PERSPECTIVE ON TERRORISM**

Seymour Feshbach

*University of California at Los Angeles, USA*

Biological and psychological research on human aggression have primarily focussed on individual differences in aggression. Some notable exceptions are the work of Zimbardo on the aggression of students assuming the role of prison guards and Milgram's pioneering research on conformity to authority that suggest that normal, typically unaggressive individuals can be stimulated or motivated to carry out acts of aggression toward essentially innocent targets. The acts of terrorism carried out on September 9 in the United States appear to fall in this category. The issue addressed here is the possible psychological mechanisms mediating these acts. One critical factor is that of attachment- attachment to one's ethnic group and attachment to one's religion. Examples of past events that fall under this rubric are the St. Bartholomew day massacres of Huguenots by Catholics and the holocaust carried out by the Nazis against the Jews. The terrorist acts differ in that they involve greater risk-taking. The literature on attachment and patriotism is germane here. Also germane is the literature on cults -the gratifications they afford to their members, their readiness to engage in self-sacrifice and the cognitive constraints and dissonance associated with extreme beliefs. While the frustrations experienced by the terrorists and their affiliated groups may also be a contributing factor, it is suggested that this is a minor factor and that it can be misleading to focus on their discontents. Rather, the critical factor is the social approval of their violent actions and the consequent removal of constraints that would ordinarily inhibit such behaviors.

**THE EFFECT OF TERRORISM ON VIOLENCE  
WITHIN SOCIETY: THE ISRAELI EXPERIENCE**

Simha F. Landau, Mildred &amp; Benjamin Berger

*The Hebrew University, Israel*

Israeli society can justifiably be described as an ideal natural laboratory for the study of the effects of various social stress factors on human beings. The foremost of these stressors is the continuous concern of Israelis with security, both on the national and on the individual level. For more than five decades, Israel has been in a constant state of conflict with its neighboring Arab countries and in the last three decades mainly with the Palestinian inhabitants of the occupied territories. This latter violent conflict particularly intensified since October 2000. The present paper deals with the effects that inter-societal violent conflict have on the level of violence within society. The basic thesis here is that loss of life in acts of violence in struggles with "outgroups" has a short term cohesive effect on society but, in the longer term, increased levels of violence within society are observed due to a generalization and brutalization effect. Empirical evidence related to this thesis is presented.

**Terrorism and Justification of Aggression****REFLECTIONS ON TERRORISM AND ITS SEMANTIC: EXAMPLES FROM SPAIN AND SOUTH AFRICA**

J. Martin Ramirez

*Universidad Complutense Madrid, Spain*

Christine Lindhard

*University of Cape Town, South Africa*

Terrorism, like any other term, is only the container of a concept or meaning. So what actually do we mean by terrorism, what do we gain by having a concept of this nature and what are the hidden implications. In a general approach, terrorism refers to the use of violence and intimidation, creating 'terror', i.e. extreme fear, among people. So by implication we must have an 'observer' with a subjective experience classified as terror. A hidden implication is that, given that people prefer to see the world as being diametrically opposite, this 'observer' is the opposite to the other and therefore it implies that the observer considers himself a 'man of peace'. It is the other that is disturbing this inner state. In most instances, terrorists outside themselves and men of peace inside themselves. Some examples from Spain and South Africa will be considered. But in reality the world is just not so simplistic. Therefore it might be more useful to consider a continuum with terror on one extreme and peace on the other. A deep analysis must first of all consider whether we are 'so peaceful' or do we in fact include a 'bit of the other' which we prefer not to consider as belonging to ourselves. Maybe we should also consider the so called terrorist's point of view as well. Why his view of the world become so desperate that he feels violence is the only solution to his problem. Have we maybe driven him like a wild animal into a corner where he sees no other alternative except by attack? Have we maybe attacked him first in such subtle ways that he feels the we are destroying the very things he holds dear, in fact his whole world? Is that not 'terrorism' in a different form? If we look at some of the mechanisms involved, we know that, from a psychological point of view, we project onto the other parts of our personality that we don't want to own. Do we do this on a social level as well? Does terrorism thus become a convenient term in which we dump all our inner doubts, fears, and negative parts, and then we try to destroy them by projecting these aspects on the other, so having a very convenient excuse to 'make war on them'. We hope this talk may help to expand some of the hidden implications of the term.

**Terrorism and Justification of Aggression****WHEN AGGRESSION IS JUSTIFIED:  
THE ROLE OF INITIATOR, MOTIVATION OF AGGRESSOR, AND TYPE OF HARM CAUSED**

Mark S. Saviano & Malcolm W. Watson  
*Brandeis University, USA*

What aspects of the context in which aggression occurs and aspects of the act itself lead to perceptions that aggression is favorable or justified? Three variables we thought would be particularly germane to this question were whether the aggression was initiated or committed in response to provocation, whether the act was motivated by hostile or instrumental goals, and whether the aggression was directed at the target person's physical, psychological, or social self. We note that our conception of "aggression directed at the social self" may be conceptualized by others as "indirect aggression."

Participants were 87 (Study 1) and 109 (Study 2) college students (75% female) assigned to read one of four interpersonal-conflict story vignettes that were created using the levels of the initiation and motivation variables. Story continuations depicting either a physically, psychologically, or socially (indirect) aggressive attack followed each story. Participants then gave ratings for the justification of, and the outcome expectancies for the aggressor. Additional measures included Huesmann and Guerra's Normative Beliefs scale.

Analysis of variance showed that aggressing in response to provocation, serving hostile motivations, and attacking the psychological self were perceived relatively more favorably than initiating aggression, serving instrumental motivations, and attacking the physical self, respectively (see Tables 1 & 2). Moreover, aggressing after provocation was perceived as "justified," particularly when against a male. Psychological and social/indirect aggression was also "justified", though not as strongly. Results are discussed in terms of belief structures in a social-cognitive model and in terms of internal and external inhibition of aggression in social-learning theory.

**Terrorism and Justification of Aggression****THE CULTURAL-PSYCHOLOGICAL FOUNDATIONS FOR VIOLENCE AND NONVIOLENCE**

Nicole Capezza  
*Clark University, USA*

The objective for this project is to examine how people think and make decisions about using violence. What are the factors and reasons that lead people to be able to pull the trigger? Differently from most existing literature on the topic of violence that looks for its causes after a violent act has happened, this research project was devoted to the study of psychological processes that lead to such acts. I used a quasi-experimental setting involving different images projected onto a screen in front of the subject. Each subject was asked to assess and make decisions about "shooting" the projected image. An immediate follow-up questionnaire was also used in the procedure to obtain data on each research participants' experience with violent movies and video games. Subjects (N=30 from Worcester, MA and N=40 from Tallinn, Estonia) used their own personal cultures to construct meanings about the image leading to the decision to shoot or not. The main focus for this paper involves the influence of video games and the willingness for a subject to shoot. An image from the video game Duck Hunt was compared to two other images involving ducks. Most subjects from the United States chose to shoot at the video game duck, but not at the other duck images suggesting that the video game framework provides a foundation for a subject to act aggressively toward an image. Many subjects from Estonia did not recognize the video game duck, and thus much less shooting occurred.

**A Cross-Cultural Investigation of Sex and Age Differences in Adolescent Aggressive Behavior with Special Focus on Indirect Aggression**

Kaj Bjorkqvist  
*Åbo Akademi University, Finland*

Dr. Bjorkqvist's work in the early 1990's on the development of aggression has been one of the most cited and influential contributions to the field of aggression. Specifically, Dr. Bjorkqvist was one of the first to describe and empirically examine how the face of aggression changes from infancy to adulthood. Through his work, Dr. Bjorkqvist has also contributed substantially to our current knowledge of sex related differences in the use of aggression. His effect/danger hypothesis used to explain why it may be that males and females employ different aggressive strategies has been nothing short of outstanding. More recently, Dr. Bjorkqvist has begun to investigate sex and age related differences in aggression across different cultures with a particular focus on indirect aggression. This work, much like his early studies, promises to yield important information concerning the use of aggression in humans. Indeed, the systemic and developmental perspective, which frames his work, has and continues to inform researchers around the world about how good science should be conducted.

**Developmental Pathways of Proactive and Reactive Aggression: Precursors and Consequences****PROACTIVE AND REACTIVE AGGRESSION FROM A 30-YEAR LONGITUDINAL PERSPECTIVE**

Lea Pulkkinen

*University of Jyväskylä, Finland*

Reactive aggression is considered as self-defense against a provocative target whereas proactive aggression is described as an provocative act towards the target with the aim of some manner of coercion or harassment. Both types of aggression often appear in proactively aggressive individuals' behavior: Those who are overtly provocative are also most likely to defend themselves if attacked or provoked. In the present study, a different wording to measure reactive aggression at age 14 in both peer nomination and teacher rating was used in an attempt to exclude the proactive ("Attacks without reason, teases others, says naughty things") from the reactive aggression ("Defends oneself if teased, but does not attack without reason"). Six years earlier (at age 8), the same individuals were assessed by teachers and peers in twelve aggression variables concerning direct and indirect aggression expressed physically, verbally, or facially. Data at both ages were available for 165 girls and 186 boys. A cluster analysis (Ward) based on the age 8 and 14 peer nomination data revealed five clusters for girls and six clusters for boys: (1) Non-aggressive at both ages (48 girls, 78 boys); (2) Low aggression at age 8, reactive aggression at age 14 (53 girls, 20 boys); (3) Moderate to low aggression at age 8, proactive aggression at age 14 (10 girls, 22 boys); (4) High aggression at age 8 and proactive aggression at age 14 (19 girls, 15 boys); (5) Angry (35 girls, 31 boys); and (6) Decreasing aggression (20 boys). The same individuals have been followed up to age 42. In the number of criminal offences by age 36, group 4 was highest differing from all other groups, and the same differences were already obtainable in the number of crimes by age 19. The early initiation of highly aggressive behavior was predictive of life-course criminal behavior. Group differences will also be analyzed regarding other outcome variables such as self-reported aggression and drinking behavior.

**Developmental Pathways of Proactive and Reactive Aggression: Precursors and Consequences****PATHWAYS OF THE FORMS AND FUNCTIONS OF AGGRESSION DURING ADOLESCENCE**

Todd D. Little &amp; Patricia H. Hawley

*Yale University, USA*

We present data from a short-term longitudinal sample (3 occasions at 6 month intervals) of 1115 adolescents (grades 6-8), examining the patterns of change relations in four specific dimensions of aggressive/agonistic behavior and their predictive relations to well-being outcomes. We used our recently developed and validated measure of aggressive/agonistic behavior that identifies and differentiates among four primary dimensions of aggression: overt-direct, relational-indirect, instrumental-offensive, and reactive-defensive; see Little et al., 2001).

At each occasion, overt-direct and relational-indirect aggression were highly correlated ( $r_s = .71, .76, .82$ ) while instrumental and reactive aggression were uncorrelated with each other ( $r_s = .16, .08, .06\{ns\}$ ). All four dimensions showed considerable change over the two 6-month intervals between the three occasions: Overt-Direct ( $r_s = .37, .35$ ), Relational-Indirect ( $r_s = .33, .36$ ), Instrumental-Offensive ( $r_s = .11, .03\{ns\}$ ), and Reactive-Defensive ( $r_s = .23, .31$ ).

Use of Instrumental-Offensive aggression increased with age. For Reactive aggression, only a Gender by Time of measurement interaction emerged: boys decreased in Reactive-Defensive aggression, while girls increased to the point that at Time 3, boys and girls did not differ on Reactive-Defensive aggression.

When all four types of aggression were simultaneously used to predict well-being (controlling for gender, grade, and their interaction), only Relational aggression emerged as the dominant predictor of Depressive Symptoms (as measured by the Child Depression Inventory; Kovacs, 1985), Positive Affect, and Negative Affect, even though all four dimensions were similarly correlated with the well-being measures.

**Developmental Pathways of Proactive and Reactive Aggression: Precursors and Consequences****PREDICTORS, PROCESSES, AND OUTCOMES OF PROACTIVE AND REACTIVE AGGRESSION:  
RESULTS FROM TWO STUDIES**

Mara Brendgen, Frank Vitaro, & Richard E. Tremblay  
*Université de Montréal, Canada*

In recent years, researchers have increasingly argued for a distinction between Proactive aggression, which is instrumental and offensive and requires neither provocation nor anger, and Reactive aggression, which is affective and defensive and involves angry outbursts in response to actual or perceived provocations or threats. Empirical evidence suggests that these two types of behaviours are related to different developmental antecedents as well as to different adjustment outcomes. To further support the differential validity of proactive and reactive aggression, the results from two studies are presented. Based on a large community sample of boys and girls, the results from Study 1 showed that proactively aggressive adolescents were more prone to be physically aggressive already at age 6 years, whereas inattention, reactivity, and withdrawal at age 6 were more characteristic of reactively aggressive individuals. Subsequently, proactively aggressive individuals were at risk to become delinquent during adolescence and reactively aggressive individuals were more likely to become depressed. Results from Study 2, based on a sample of high risk boys, showed that both proactive and reactive aggression were predictive of violent behaviour outcomes during mid-adolescence, although this violence was manifested in different contexts: Proactive aggression was related to later violence in delinquency-related contexts, whereas reactive aggression was related to later violence against the dating partner. The links between boys' proactive and reactive aggression and the two violent behaviour outcomes, however, were differentially moderated by the degree of parental supervision and parental warmth experienced during early adolescence. The implications of the findings for the theoretical and practical distinction between proactive and reactive aggression are discussed.

**Developmental Pathways of Proactive and Reactive Aggression: Precursors and Consequences****DEVELOPMENTAL TRAJECTORIES OF REACTIVE AND PROACTIVE AGGRESSION:  
SIMILARITIES AND DIFFERENCES OVER TIME**

Jennifer E. Lansford, Kenneth A. Dodge

John E. Bates &amp; Gregory S. Pettit

*Duke University, USA*

Reactive and proactive aggression have been found to be related to different precursors and consequences. Reactive aggression is associated with hostile attribution biases, early maltreatment, peer rejection, physiologic overarousal, and attention problems; proactive aggression is associated with positive evaluation of aggression, having aggressive role models, friendships with other proactively aggressive children, physiologic underarousal, and psychopathy. Despite these important advances, little is known about the developmental course of reactive and proactive aggression in relation to one another over time and how these trajectories relate to adolescents' subsequent adjustment.

These questions were investigated in a community sample of 585 children followed from pre-kindergarten through grade 12. Ratings of children's reactive and proactive aggression were provided by teachers in grades K-3 and 6-7, and by mothers and adolescents in grade 11. Adolescents answered questions about their adjustment in grade 12. Structural equation models revealed that reactive aggression was significantly more stable over time than was proactive aggression. Furthermore, reactive aggression in one year predicted proactive aggression in the next year, whereas proactive aggression in one year did not predict reactive aggression in the next. Adolescents' reports of their own proactive, but not reactive, aggression were related to higher levels of drug use, school suspension, trouble with police, violence, and theft. In contrast, teachers' and mothers' reports of the child's reactive, but not proactive, aggression were significantly related to later serious problem behaviors. Results are discussed in terms of theoretical models of reactive and proactive aggression.

**Developmental Pathways of Proactive and Reactive Aggression: Precursors and Consequences****PROACTIVE/REACTIVE AGGRESSION AND ADJUSTMENT PROBLEMS IN ADOLESCENCE:****A LOOK AT PEER AND FAMILY PROCESSES**

François Poulin, T. J. Dishion, &amp; Michel Boivin

*Université du Québec à Montréal, Canada**Université Laval, Canada*

Dodge and Coie (1987) have stressed the relevance of distinguishing reactive aggression (RA), an impulsive and hostile act displayed in response to a perceived threat or provocation, from proactive aggression (PA), defined as a non-provoked and goal-directed action with intent to harm and dominate. Recent studies suggest that these forms of aggression in childhood lead to different types of adjustment problems during adolescence. Specifically, PA predicts delinquency in adolescence and antisocial behaviors and alcohol use problems in early adulthood whereas RA seems more strongly associated with internalizing problems such as depression and somatization. These different adjustment outcomes might reflect distinct developmental pathways characterized by specific peer and family experiences during early adolescence.

The goal of this presentation is to explore the hypothesis that proactive and reactive aggression might present distinct developmental pathways during adolescence. These pathways are examined with a focus on family experiences (i.e., conflict, monitoring), peer experiences (i.e., peer rejection, friendship networks), and adjustment outcomes (i.e., delinquency, substance use, internalizing problems), using a 3-year longitudinal study. In the first year, participants were 664 (346 boys, 318 girls; 58% European American, 40% African American) sixth grade students from three middle schools in a high-risk urban area. Attrition rate was 3% in the second year and another 3% in the third year. Teacher-, self-, and peer-report data were collected each year. Teacher provided ratings of PA and RA. Youth completed a questionnaire measuring various aspects of family relations and behavioral adjustment. Finally, peer nominations will be used to assess peer rejection and to identify friendship networks.

**Developmental Approaches to Assessing Aggression in Young Children****DIAGNOSTIC VALIDITY OF DSM-IV OPPOSITIONAL DEFIANT DISORDER (ODD)  
AND CONDUCT DISORDER (CD) IN PRESCHOOLERS**

Kate Keenan

*University of Chicago, USA*

In this paper we examine the relation between DSM-IV symptoms, standardized behavior checklists, and observational ratings as a means of exploring measurement validity in this age group. Seventy-nine clinic-referred preschoolers (2.5 through 5.5) from low-income environments and 50 comparison children were assessed. Within the clinic-referred sample, toddlers and preschoolers engaged in very serious and dangerous disruptive behavior that impeded their participation in developmentally appropriate activities, such as aggressive behavior that resulted in expulsion from preschool. These children displayed symptoms and levels of impairment that were consistent with DSM-IV ODD and CD. Furthermore, these disorders were associated with elevated scores on the CBCL. Preschool children diagnosed with CD evidenced more impairment than children with ODD. In addition, children diagnosed with CD differed from comparison children on observed measures of noncompliance and aggression, but children diagnosed with ODD did not. Thus, there appear to be important differences between children diagnosed with ODD and those diagnosed with CD.

We also identified a number of antecedent and concurrent risk factors for early onset ODD and CD, including difficulties being soothed as infants and a history of prenatal exposure to cigarettes.

These data serve as an important step towards describing the manifestations of clinically significant behavior problems in young children using a standardized assessment. Using a developmentally modified version of DSM-IV diagnostic system yielded reliable and valid diagnoses of ODD and CD in preschool children.

**Developmental Approaches to Assessing Aggression in Young Children****TRAJECTORIES AND CLUSTERS OF EXTERNALIZING BEHAVIORS IN YOUNG CHILDREN**

Alice S. Carter

*University of Massachusetts, USA*

Stephanie M. Jones, Margaret Briggs-Gowan, Amanda E. Schweder

*Yale University, USA*

Sarah M. Horwitz

*Yale University School of Medicine, USA*

The goals of this presentation are: (1) to describe average growth trajectories for several discrete externalizing behaviors, including Activity/Impulsivity, Aggression/Defiance, and Relational and Overt Peer Aggression; (2) to identify groups of children who evidence different profiles of change over time in these components of aggression and to examine family and child level correlates of profile membership; and (3) to provide frequencies of specific externalizing behaviors in 24- to 48-month old children by gender, ethnic group, and poverty status. These goals will be addressed using parent reports on the Infant-Toddler Social Emotional Assessment and the Child Behavior Checklist 1.5-5 Externalizing Scales. Approximately 1200 parents from a diverse, representative birth cohort drawn from an urban/suburban Northeastern catchment area participated in the study. Analyses will be conducted using both hierarchical linear modeling (HLM) and cluster analytic techniques. HLM allows for the simultaneous estimation of variance associated with individual (within-subjects) and population (between-subjects) growth curves based on the specification of fixed- and random-effect variables in the model. In this study, a minimum of three different time points enables the estimation of patterns of growth over time as well as across ages. Cluster analysis techniques will be used to identify subgroups of children who evidence different patterns of change in the Externalizing behaviors over time. Moreover, both techniques will be employed to track the potentially widely varying developmental trajectories of children who initially fall into different profiles of aggressive behaviors at 24 months. The implications of these findings for both policy and preventive intervention efforts will be discussed.

**Developmental Approaches to Assessing Aggression in Young Children****THE DISRUPTIVE BEHAVIOR DIAGNOSTIC OBSERVATION SCHEDULE (DB-DOS):  
A STRUCTURED CLINICAL OBSERVATION TOOL FOR THE ASSESSMENT OF EARLY CONDUCT PROBLEMS**

Lauren Wakschlag  
*University of Chicago, USA*

Distinguishing typical from disruptive behaviors in preschoolers is challenging but vitally important, because chronic trajectories of antisocial behavior often have their onset in the preschool years. There is increasing evidence that disruptive behavior disorders (DBDs) can be validly diagnosed in preschoolers, but there are not yet standardized methods for assessing DBDs in preschoolers.

Existing validation studies have relied on standardized interviews, with developmental modifications. Relying on parent report alone to determine clinical significance of behaviors at this age period is problematic. In older children, clinical assessment often rests on the presence or absence of a particular behavior. In contrast, in early childhood problem identification rests on being able to distinguish frequently occurring, normative manifestations of behavior from their atypical variants. Relying on parent report alone to identify problems is unreliable, because (a) necessary distinctions are often subtle and; (b) many factors may bias parental reports including limited education, parental stress and psychopathology. There is currently no standardized observational method that has clinical utility in the assessment of preschool disruptive behavior, although such methods have been very effectively utilized in achieving widespread consensus on the validity of the diagnosis of autism in young children.

We will present on the Disruptive Behavior Diagnostic Observation Schedule (DB-DOS), a structured observational tool currently being developed as a companion instrument to standardized parent interviews for clinical diagnosis of preschool DBDs. The DB-DOS paradigm and coding system will be presented and illustrated via videotaped examples and preliminary validation data will be reported.

**Ecological and Immunological Aspects of Aggression in Animals****PUNISHING THE KIDS: PARENT-OFFSPRING CONFLICT IN MOORHENS (GALLINULA CHLOROPUS)**

Paul F. Brain, D.W. Forman and P.L.M. Lee

*University of Wales Swansea, UK*

Common moorhens inhabit slow moving or still water bodies. A breeding population of circa 200 wild birds was studied in a local Wildfowl and WetlandsTrust Center. 23 monogamous (the commonest) broods were observed 1997-1999. Hatching asynchrony produces chick size differences. Particular attention was directed to largest and smallest chicks in broods. Chick sex was confirmed using a 'genetic fingerprinting'. Birds were observed every 4 days from hatching to 60 days. 'Tousling' by parents on chicks was the focus. Tousling can consist of pecks, chases, peck-chases and shakes. The individuals participating in tousling and the behaviors and proximities of chicks before and after events were recorded. Moorhen chicks are semi-precocial and accompany parents on feeding trips. A total of 977 tousles were recorded of which 604 and 373 were to large and small chicks, respectively. The commonest and most rare tousles were pecks and peck-chases, respectively. Male and female parents tousled chicks at similar rates. Interestingly, female (but not male) parents tousled small male chicks to a greater extent than female counterparts. This would encourage female chicks to stay. Large chicks also received significantly more tousles per minute than small chicks. Begging was the most common chick activity before a tousle and (unremarkably) chicks significantly increased their distance from a parent after attack. Parent moorhens use tousling to enforce brood independence. Directing such behavior to larger chicks enables adult birds to give more parental attention to smaller chicks. Body size and condition have powerful effects on chick viability.

**Ecological and Immunological Aspects of Aggression in Animals****THE EFFECT OF EGG REMOVAL ON TERRITORIALITY AND BIOCHEMICAL PARAMETERS  
IN OVIGEROUS AMERICAN LOBSTERS (HOMARUS AMERICANUS)**

Michael H. Figler  
*Towson University, USA*

Harman V.S. Peeke, Mark J. Snyder & Ernest S. Chang  
*University of California-Davis, USA*

The presence of one's offspring has been shown to be an important variable in the level of maternal aggression seen in many disparate taxa, including a freshwater decapod crustacean (crayfish). Maternal red swamp crayfish (*Procambarus clarkii*) provide both pre- and post-hatch care and show a significant shelter-related territorial advantage throughout the maternal phase. If the mother is separated from her hatched offspring this territorial advantage disappears, and is reinstated upon reunion with them. Ovigerous American lobsters (*Homarus americanus*), a closely related marine decapod, show a similar territorial advantage against non-maternal females, even though no post-hatch care is provided. As in virtually all decapods, in both species the eggs are attached to the pleopods (swimmerets) throughout embryogenesis. The present experiment evaluated the effect on maternal territoriality of stripping ovigerous *H. americanus* females of their eggs prior to hatching. In one treatment group, maternal females were stripped of all eggs. Twelve days later, they were individually isolated for 48 hours in a test tank where each serially intruded upon by four non-maternal conspecific females. An identically treated control group of ovigerous female residents was left intact prior to the serial intrusions. Also, various biochemical parameters of the stripped and unstripped animals were measured before and after the experimental treatment (or control). These stress indicators and behavioral modulators included concentrations of heat shock proteins, cytochrome P450, methyl farnesoate, crustacean hyperglycemic hormone, octopamine, and serotonin. The ovigerous residents showed a significant territorial advantage over the intruders, whereas the stripped residents' contest outcomes were reduced to chance. Therefore, the presence of eggs in maternal *H. americanus* is necessary in the maintenance of the shelter-related territorial advantage. However, no systematic differences in any of the biochemical parameters were observed between or within treatment conditions.

**Ecological and Immunological Aspects of Aggression in Animals****DEVELOPMENT OF AGONISTIC BEHAVIOR IN GOLDEN HAMSTERS**

Yvon Delville, Joel C. Wommack &amp; Kereshmeh Taravosh-Lahn

*University of Texas at Austin, USA*

In hamsters, the development of offensive aggression as performed by adults is preceded by play fighting behavior. Detailed analysis of the pattern of attacks and bites suggests that play fighting and adult aggression are two separate behaviors. Bites administered by juveniles during play fighting are focused on the face and cheeks. In contrast, bites performed by adult are centered on the lower belly and rump.

However, it is difficult to determine precisely the location of bites from videotapes. Therefore, we decided to look at the development of offensive responses on the basis of the intended targets of attacks. Several types of attacks were performed hamsters during development: attacks targeting the face and cheeks (frontal attacks), attacks targeting the flanks (side attacks) and attacks targeting the lower belly and rump (bottom attacks). Comparison of the relative frequency of these different types of attack led to the identification of three different developmental periods. The play fighting period peaks around postnatal day 35 (P-35) and is characterized by frontal attacks. The transitional period peaks around P-45 and is characterized by side attacks. Offensive responses reach the adult period (bottom attacks) around P-65.

These data show a gradual transition of the targets of offensive responses during development, instead of two separate behaviors. In addition, the agonistic encounters shared common behavioral traits, such as a display of flank marking activity after a successful attack. These observations suggest that play fighting and adult offensive responses share a common neural substrate. As flank marking behavior and adult offensive aggression are inhibited by serotonin release in the brain, we decided to test the effect of activation of serotonin release in the brain on play fighting offensive responses. Our results show a specific inhibition of play fighting behavior by acute treatment with fluoxetine, a serotonin reuptake inhibitor.

In addition, we also tested the effect of exposure to stress on the development of offensive responses. Our results show that chronic stress exposure during the play fighting and transitional periods accelerates the onset of adult responses and the disappearance of play fighting responses. These behavioral changes were found to be associated with an enhanced expression of tyrosine hydroxylase within the medial amygdala and bed nucleus of the stria terminalis, areas known to be involved in the control of offensive aggression and containing testosterone-dependent dopamine neurons in hamsters.

In conclusion, we hypothesize that a common neural substrate involving serotonin and vasopressin neurons controls the expression of offensive responses throughout development. This system is connected to a network of testosterone-dependent neurons regulating the type of offensive response. This network is sensitive to environmental factors resulting in alterations in the development of offensive aggression. For instance, exposure to stress during puberty accelerates the onset of adult offensive responses. We are presently, testing the possibility that a comparable alteration in the development of attitudes and perceptions toward aggression also occurs in humans.

**Ecological and Immunological Aspects of Aggression in Animals****EFFECTS OF ACUTE SUBORDINATION STRESS ON T AND B CELL LYMPHOPROLIFERATIVE CAPACITIES AND DEVELOPMENT OF MELANOMA B-16 PULMONARY METASTASES IN MALE MICE**Oscar Vegas<sup>1</sup>, A. Alonso<sup>1</sup>, Teo Palomares<sup>1</sup>, E. Fan<sup>1</sup>, R. Cacho<sup>1</sup>, P.F. Brain<sup>2</sup> & A. Azpiroz<sup>1</sup><sup>1</sup>*Basque Country University, Spain*<sup>2</sup>*University of Wales-Swansea, UK*

Male OF-1 mice were rendered subordinate by subjecting them to social stress in resident-intruder pairs for 24 hours with mice especially selected for their high and homogenous level of aggressiveness. Over this period, the pairs (aggressive-naive) were only in physical contact for three 5-minute intervals (at its beginning, middle and end). The rest of the time, pairs were only in sensory contact. The immune responses of both a group subjected to social stress and controls (not subjected to social stress) were analysed. The *in vitro* proliferative responses to mitogens for T (Con-A) and B (PHA) cells were assessed for both groups one hour (time 1) and three days (time 2) after aggressive exposures. A second experiment, analysed tumor development in comparable groups. In this case, control and subordinated groups were injected with B-16 melanoma cell suspensions six days before the latter group was subjected to social stress. Pulmonary metastases were analysed 15 days after the stressor imposition. Subsequently, the relationships between immune responding and development of pulmonary metastatic foci were analysed. A two factor ANOVA revealed that subordinates had lower T lymphocyte proliferative responses than control subjects ( $p < 0.0001$ ). Nevertheless, at time 2, relative increases in lymphoproliferative capacities were recorded for both experimental and control groups ( $p = 0.04$  and  $p = 0.003$ , respectively). In terms of the proliferative capacity of B-lymphocytes, subordinate subjects only had lower proliferation levels than for the control group at time 1 ( $p = 0.016$ ). The number of pulmonary metastatic foci was significantly more numerous in the group subjected to social stress ( $p = 0.0008$ ). Social stress generated in this 24-hour sensory-physical interaction model reduced cellular and humoral immunity in subordinate animals and increased the development of pulmonary metastases. The effects of such stress on the immune system disappeared after three days in the case of B-lymphocytes, but remained unchanged in the case of T cells. The social stress resulting from subordination may have a general immunosuppressive effect, perhaps explaining the greater tumor development in these animals.

**Aggression, TV, and Parenting****CHILDREN'S BRAIN RESPONSE TO TV VIOLENCE: FUNCTIONAL MAGNETIC RESONANCE IMAGING (fMRI)  
OF VIDEO VIEWING IN 8-13 YEAR-OLD BOYS AND GIRLS**

John P. Murray  
*Kansas State University, USA*

Children, ages 8-13 (5 boys, 3 girls), viewed televised violent and nonviolent video sequences while brain activity was measured with Functional magnetic Resonance Imaging (fMRI). Both violent and nonviolent viewing activated regions implicated in aspects of visual and auditory processing. In contrast, viewing TV violence selectively recruited right precuneus, right posterior cingulate, right amygdala, bilateral hippocampus and parahippocampus, bilateral pulvinar, right inferior parietal and prefrontal, and right premotor cortex.

TV violence viewing appears to activate brain areas involved in arousal and attention, detection of threat, episodic memory encoding and retrieval, and motor programming. These results, based on the viewing of "PG" violent film material (boxing sequences from the film, "Rocky IV") compared with the nonviolent sequences from two U.S. Public Broadcasting System (PBS) children's programs, ("Ghostwriter" and "National Geographic"), suggest possible neurophysiological mechanisms for the long-term behavioral effects of TV violence. In particular, the activation of areas of brain involved in the long-term memory storage for emotionally charged perceptions greatly enhances the retrieval of violent sequences to serve as a guide for social behavior.

**GENDER AND THE DEPICTION OF DIRECT AND INDIRECT AGGRESSION ON TELEVISION**

Norma D. Feshbach & Amy Hanf  
*University of California at Los Angeles, USA*

The large body of research on the degree to which aggression is portrayed on television has been primarily restricted to the depiction of physical aggression. Aggressive phenomena extend beyond physical aggression and include verbal, gestural and indirect aggression. Recently, there has been considerable interest in the investigation of indirect aggression, referred to as social aggression by some investigators and relational aggression by others. Gender differences in the utilization of indirect aggression have been consistently found by a number of researchers, with females making significantly greater use of indirect aggression than males. The present study is addressed to two issues: 1). The frequency with which different types of aggressive behaviors are depicted on popular television programs. 2). Gender differences in the degree to which different types of aggressive behaviors are manifested by male and by female TV characters. Six half-hour and six one hour programs presented during prime time hours were selected for systematic observation and analysis. A detailed observation schedule assessing physical, verbal, gestural and indirect aggression was developed. After inter-rater reliability was established, the selected programs were viewed by pairs of observers. Gender differences in the manifestation of physical aggression were found while gender differences in the use of indirect aggression were much smaller. Of particular interest were findings that a number of programs, low in the display of physical aggression, were quite high in the utilization of indirect aggression. Implications of these findings for understanding the impact of television, especially television models, on children's behavior are discussed.

**Aggression, TV, and Parenting****CONFLICTFUL PARENTAL RELATIONSHIPS: CONSEQUENCES FOR OFFSPRING**

Antonia Bifulco

*University of London, UK*

There has been much research interest in the transmission of risk for psychiatric disorder across generations, particularly in relation to increased rates among the young. Disorder in the parent is usually taken as the key factor in such transmission. However, an alternative hypothesis is that 'vulnerability' characteristics in the parent particularly those involving family conflict and poor support are a more important source of risk in the offspring. This hypothesis was tested and confirmed in a series of 276 London mothers and their children aged 16-25.

Two prospective series of London mothers studied in the 1980s (Brown et al, 1990) and 1990s (Bifulco et al 1998) were followed up and extended to investigate the experiences of children in the family. Contextually sensitive interview measures were utilised to assess childhood experience of neglect/ abuse, ongoing support, conflict and self-esteem in both generations. The SCID was used to assess psychiatric disorder.

Offspring of vulnerable mothers (those with low self-esteem, conflict with partner or child or low support) were found to have a fourfold higher rate of yearly disorder than those of non-vulnerable mothers (43% vs 11%). This held for both genders and for internalising and externalising disorders in the young people. Disorder in offspring was highly related to the experience of childhood adversity before age 17, which was significantly higher in the vulnerable offspring. In particular physical abuse was twice as common (32% vs 15%,  $p < 0.001$ ). Anger and conflict in both generations is explored in terms of childhood experience, self-esteem and support context.

**Aggression, TV, and Parenting****PTSD PROPOSAL: THE TRAUMATIC ORIGINS OF INTIMATE RAGE**

Donald Dutton  
*University of British Columbia, Canada*

We posit that a triad of childhood events found retrospectively in populations of batterers constitutes a powerful trauma source and that many aspects of the personality structure and function of intimately abusive men are best understood from a trauma-response framework. The trauma stressors include witnessing violence directed toward the self or the mother, shaming and insecure attachment. (cf. Dutton 1995a,b,c,d). Bowlby (1973) considered insecure attachment itself both a source and consequence of trauma. Since, the infant turns to the attachment-object during periods of distress seeking soothing, a failure to obtain soothing maintains high arousal and endocrine secretion. Van der Kolk (1987) considered child abuse an "overwhelming life experience" and reviewed the defenses that children use to deal with parental abuse: hypervigilance, projection, splitting, and denial. Terr (1979) also described driven, compulsive repetitions, and reneactments that permeate dreams, play, fantasies and object relations of traumatized children. Shaming, conceptualized as verbal or behavioral attacks on the global self has been found to generate life long shame-proneness or defenses involving rage. Data will be presented from 200 subjects to show that evidence exists in adult batterers both for the presence of trauma symptoms and the childhood experiences described above. Conceptualizing the affective, cognitive and behavioral features of intimate abusiveness from a trauma perspective has many advantages over social learning models. A basis for the internally driven and cyclical aspect of the behavior becomes clearer as does the problems with modulation of arousal, anger and the high levels of trauma symptoms found in populations of abuse perpetrators. The narrow social learning definition of aggression as a reaction to an appraisal of controllable threat is broadened to include reactions to trauma: uncontrollable-unbluntable-inescapable aversive stimuli. This model also has treatment implications, suggesting that techniques borrowed from DBT for borderlines and other arousal-modulation techniques could improve batterer treatment.

**Aggression, TV, and Parenting****MATERNAL FACTORS DURING PREGNANCY AND  
THE TEMPERAMENT OF INFANTS OF NEGLECTED MOTHERS**

Odette Bernazzani, Geneviève Mailloux,  
Richard E. Tremblay, Mark Zoccolillo & Michel Boivin

*Université de Montréal, McGill University & Université Laval, Canada*

It is now well-established that children of women neglected in their own childhood are at high risk for emotional and cognitive problems. However, early risk factors related to the transmission of emotional problems in this high risk group have not been sufficiently studied. This paper presents preliminary results from a longitudinal study of pregnant women reporting a history of childhood emotional neglect and examines prospectively the relationship between maternal psychological risk factors, maternal tobacco use and the infants' temperament.

Ninety pregnant women reporting childhood neglect were recruited during a prenatal visit to a university teaching hospital located in a deprived area of Montreal. Families were assessed extensively at the third trimester of pregnancy and at 5 months postpartum. This paper focuses on measures of maternal prenatal psychological characteristics (dissociative and depressive symptoms, coping strategies and personality traits), maternal tobacco habits, and infant temperament as assessed by mothers and fathers using the ICQ (Bates et al. 1979).

The average age of the women was 28 years. 85% of the women were married or cohabiting and over half had children. 26% were on social welfare. Nearly 35% of the women smoked during pregnancy. Several maternal prenatal factors were associated with a negative assessment of the infant's temperament at 5 months postpartum: 1- high levels of dissociative symptoms ( $t=2.37, p=.02$ ) 2- high levels of depressive symptoms ( $t=2.78, p=.007$ ) 3- lower levels of healthy coping strategies such as problem solving ( $t=2.46, p=0.02$ ) and seeking social support ( $t=2.08, p=.04$ ). Further analyses examining the relationship between maternal psychological factors, tobacco use and temperament scores as assessed by both mother and father will be presented.

**Aggression, TV, and Parenting****THE ROLE OF FATHER IN THE TRANSMISSION OF AGGRESSION**

Seong-Yeon Park  
*Ewha Womans University, Korea*

A great deal of knowledge has been generated regarding familial antecedents of aggression. Specifically, research to date exploring the specificity of parenting style linkages to children's aggression suggests that coercive and power assertive control is associated with both physical and relational aggression. In addition, a number of attribution studies have demonstrated that social-cognitive biases are differentially related to general subtypes of aggressive behaviors such as reactive and proactive aggression. Comparing to proactive and relational aggression, which are prompted by its anticipated benefits, reactive aggression is construed as a rather defensive reaction to a perceived threatening stimulus. Although this subtype of aggression is clearly differ in structure and function from other types of aggression, almost nothing is currently known about familial antecedents of reactive aggression.

The purpose of the present study is twofold; one is to explore the fathers' parenting behaviors associated with their sons' reactive aggression, and the other is to identify intergenerational pathway of aggression. A sample of Korean elementary school boys (5-6th graders) and their fathers participated in this study. Information concerning fathers' parenting behaviors, fathers' and their sons' aggressions were obtained via questionnaires.

The results showed that father's use of power assertive control and lacks of open communication were significantly related to sons' use of both relational and proactive aggression. Additionally, fathers' encouragement of sons' aggressive behavior was associated with sons' reactive aggression. It was also found that fathers' aggression was not directly associated with sons' aggression, but was associated with fathers' power assertive parenting and in turn, led to sons' aggressive behaviors. The results indicated that developmental path of boys' aggression in Korean cultural context.

**Developmental Pathways of Indirect Aggression: Precursors and Consequences****A LONGITUDINAL CONFIRMATORY FACTOR ANALYSIS OF PHYSICAL AND INDIRECT AGGRESSION:  
EVIDENCE OF TWO FACTORS**

Mara Brendgen, Tracy Vaillancourt, Michel Boivin, & Richard Tremblay  
*Université du Québec à Montréal, Université Laval & Université de Montréal, Canada*

Historically, the focus of empirical research has been on physical aggression. In recent years, social scientists have begun to consider another type of aggression, namely indirect (i.e., spreading vicious rumours). The idea that indirect aggression is distinct from physical aggression is based primarily on two sources of evidence: 1) the consistently 'modest' correlation obtained between the two forms of aggression (i.e.,  $r = .5$  to  $.7$ ), and 2) exploratory factor analytic results which have yielded two 'interpretable' factors. Although these data help provide a starting point regarding the discreteness of indirect and physical aggression, what remains to be seen is whether this distinction holds true in a consistent manner across developmental periods. Toward this end, we conducted an accelerated longitudinal factor analysis using a multi-group modelling procedure. We hypothesised that two factors would be found. Participants were 2789 children aged 4 to 7 years at Time 1, 6 to 9 years at Time 2, and 8 to 11 years at Time 3. Results of the analyses revealed a two-factor model for indirect and physical aggression that was stable across cohorts, time, and sex groups. Given the robust findings from the CFA we also examined the predictive links between indirect and physical aggression over time using path analysis. Interestingly, findings from the path model revealed that physically aggressive children became more indirectly aggressive over time, whereas indirectly aggressive children became less physically aggressive over time.

**A CROSS-CULTURAL INVESTIGATION OF SEX DIFFERENCES  
AND DEVELOPMENTAL TRENDS IN REGARD TO DIRECT AND INDIRECT AGGRESSION**

Kaj Björkqvist  
*Åbo Akademi University, Finland*

Aggressive behavior among approx. 5000 school children of three age groups: 8-, 11-, and 15-years of age, was studied with the same methodology in the following countries: Finland, India (Delhi), Israel, Italy, Poland, Puerto Rico, and U.S.A. (Chicago). At the present stage of the project, data from these samples are collected, coded and analyzed, and some of the results have been reported, while other reports are in the stage of preparation. Aggressive behavior was estimated with the Direct & Indirect Aggression Scales (DIAS), measuring three types of aggression (physical, verbal, and indirect). The main object of the study was to investigate sex differences and developmental trends in these different styles of aggression, in a cross-cultural perspective, in order to explore the extent to which findings pertaining to sex differences and developmental trends in adolescent aggressive behavior are universal, or vary among cultures. Besides aggressive behavior, sociometric data, locus of control, and sex role attitudes were also measured. Sex differences, age trends, and differences due to cultural or ethnic background have been found and will be presented.

**Developmental Pathways of Indirect Aggression: Precursors and Consequences****THE DEVELOPMENT OF INDIRECT AGGRESSION AMONG CANADIAN CHILDREN**

Tracy Vaillancourt, Sylvana Côté, Abdeljelil Farhat  
Bernard Boulerice, Michel Boivin, & Richard E. Tremblay

*Université de Montréal & Université Laval , Canada*

The examination of the type of aggression primarily employed by girls has all but been ignored in longitudinal investigations. Indeed, to date, we know very little about the development of indirect aggression among school-aged children. Considering this limitation, the purpose of the present study was to investigate the development of indirect aggression using a nationally representative sample of Canadian 5515 girls and boys aged 4 to 11 years. Consistent with previous cross-sectional results we hypothesized that girls would be more indirectly aggressive than boys and that with maturation would come a general increase in the use of indirect aggression. We also hypothesized that, as demonstrated within the physical aggression literature, distinct longitudinal profiles of indirect aggression would be recognized. Specifically, we hypothesized that we would identify a group of children who never or rarely used indirect aggression, a group of children who in early childhood did not use indirect aggression but did so as they approached adolescence (later onset), and a group of children who consistently and increasingly relied on the use of indirect aggression. Results of analyses using an accelerated longitudinal, semi-parametric, group-based model supported our initial hypotheses-- with increased age came an increase in the use of indirect aggression, more girls used indirect aggression than boys, and groups of children could be identified on the basis of idiosyncratic levels and patterns of indirect aggression. The implications of these findings for the prevention of aggression are discussed.

**Developmental Pathways of Indirect Aggression: Precursors and Consequences****DEVELOPMENTAL DIFFERENCES IN FRIENDSHIP EXCLUSIVITY AND SOCIAL AGGRESSION  
FROM MIDDLE CHILDHOOD THROUGH EARLY ADOLESCENCE**

Marion K. Underwood  
*University of Texas at Dallas, USA*

This research examined developmental differences in social aggression and friendship exclusivity for the age range of middle childhood and early adolescence, using both observational and questionnaire methods. Social aggression harms others by damaging their friendships and social status, and includes social exclusion (both verbal and nonverbal), relationship manipulation, and malicious gossip.

Participants in this study were 100 dyads ( $N = 200$ ) of mutually nominated close friends. First, participants completed a Friendship Qualities Measure (including subscales for friendship exclusivity and relational aggression). Then, friends were observed as they interacted with a same-gender confederate actor, trained to be a difficult play partner by calling attention to herself/himself, making obnoxious comments, and messing up the game. Pairs of best friends were observed as they responded to the provoking peer and engaged in elements of social aggression: excluding gestures and facial expressions, exclusionary comments, and negatively discussing the actor when he/she was out of the room (for even the most subtle gestures, kappa coefficients exceeded .75).

Results from the observational data suggested that in the presence of the actor, boys made more verbally socially aggressive statements than girls did, though girls exhibited more socially aggressive gestures. Interestingly, the observational data indicated that younger (4th graders, approx. age 10), children were more verbally aggressive than older children (6th and 8th graders, approx. ages 12 and 14). These findings suggest that at least in this particular social context, verbal social aggression may be more prominent in middle childhood than during adolescence.

**DEVELOPMENTAL DIFFERENCES IN INDIRECT AGGRESSION  
AMONGST STUDENTS IN SOUTH AUSTRALIAN SCHOOLS**

Larry Owens  
*Flinders University, Australia*

Aggression, defined as behaviour that is intended to hurt or harm others, has a variety of forms. As well as using traditional overt physical and verbal forms, humans also use more covert ways of harming others (e.g., spreading rumours, excluding peers from the group). These indirect forms of aggression are subtle and require a higher level of sophistication and skill to perpetrate successfully compared with the more direct forms of aggression. It would be expected, therefore, that levels of indirect aggression amongst school students would increase with age as children and adolescents develop their social intelligence and social skilfulness. This has been found to be the case in a number of studies across several countries. In Australia, the author has found that older students, particularly teenage girls, exhibit higher levels of indirect aggression than do younger students. In addition, teenage girls were found to have higher levels of indirect aggression than teenage boys. A number of suggestions are proposed to explain this differential development of indirect aggression between the sexes. In particular, it is suggested that the different nature of teenage boys' and girls' peer groups is a key determinant of the sex difference in indirect aggression. Data are presented to highlight the nature of teenage girls' interactions that contribute to their indirect aggressive behaviours.

**Physical Aggression and Conduct Problems in Youth : Early Versus Late Onset**

COMPARISON OF EARLY VERSUS LATE ONSET ANTISOCIAL BEHAVIOR IN BOYS AND GIRLS :  
FINDINGS FROM THE NATIONAL LONGITUDINAL STUDY OF CHILDREN AND YOUTH (NLSCY)

David R. Offord  
*McMaster University, Canada*

N/A

**Physical Aggression and Conduct Problems in Youth : Early Versus Late Onset****THE RELATIONSHIP BETWEEN EARLY ONSET PHYSICAL AGGRESSION  
AND ADOLESCENT AGGRESSIVE AND NON-AGGRESSIVE CONDUCT DISORDER**

Elisa Romano<sup>1</sup>, Richard E. Tremblay<sup>1</sup>, Sylvana Côté<sup>1</sup>,  
Bernard Boulerice<sup>1</sup>, Mark Zoccolillo<sup>2</sup> & Daniel S. Nagin<sup>3</sup>

<sup>1</sup>*Université de Montréal, Canada*

<sup>2</sup>*McGill University, Canada*

<sup>3</sup>*Carnegie Mellon University, USA*

The current diagnostic and statistical manual of mental disorders (DSM-IV) uses the criterion of age of onset to distinguish between two types of conduct disorder, namely childhood-onset and adolescent-onset. The distinction is made based on whether the individual exhibited at least one conduct symptom prior to 10 years of age. The purpose of this study is to examine issues of onset among adolescents diagnosed with conduct disorder. Specifically, our aim is to predict aggressive and non-aggressive conduct disorder in adolescent boys using developmental trajectories of early onset physical aggression. We will examine data for over 1,000 boys from two Quebec (Canada) longitudinal studies. The first assessments took place in the mid-1980s when the boys were in kindergarten. Among the measures collected during kindergarten were mother- and teacher-completed behavioral ratings of physical aggression. Continual assessments of the boys occurred throughout childhood and into adolescence. During mid-adolescence, the boys completed a structured psychiatric interview that collected data on a number of DSM diagnoses, including conduct disorder. We plan to use the scores for the three physical aggression items collected from ages 6 to 12 years to estimate developmental trajectories. These trajectories will be estimated separately for mother- and teacher-completed ratings. We will then use the developmental trajectories to predict adolescent outcomes, specifically aggressive and non-aggressive conduct disorder.

**Physical Aggression and Conduct Problems in Youth : Early Versus Late Onset****A PROSPECTIVE TEST OF THE RELATION OF AGE OF ONSET TO AGGRESSIVE  
AND NON-AGGRESSIVE CONDUCT PROBLEMS IN BOYS**

Benjamin B. Lahey, Rolf Loeber, Magda Stouthamer-Loeber & David P. Farrington  
*University of Chicago, USA*

Data were collected in the Pittsburgh Youth Study on a cohort of urban boys sampled from public schools who were in first grade at the start of the study. Data on antisocial behavior and contextual factors were collected at least annually from ages 6 to 16 years. We will use these prospective data to test the hypothesis of Loeber and Moffitt that high levels of physical aggression and serious non-aggressive delinquency during adolescence will be found almost exclusively among boys who exhibited high levels of conduct problems at ages 6 and 7 years (life-course delinquents).

These analyses will use individual trajectories in two types of antisocial behaviors to test the hypothesis that there are two types of delinquent persons (early vs late onset delinquents). In the PYS data that there are two groups of conduct problems, that we term childhood-typical and adolescent-typical conduct problems for the purpose of these analyses. Childhood-typical conduct problems (mostly minor aggression and lying) are prevalent in early childhood, but on average, they decline in prevalence with increasing age. Adolescent-typical conduct problems (mostly serious aggression, property crime, and truancy) are low in prevalence in early childhood, but increase in prevalence with age.

The boys in this cohort of the PYS sample will be divided into quartiles based on their means on childhood-typical conduct problems during first three assessment waves (S, A, B) and their developmental trajectories of both types of conduct problems will be compared from 6 to 16 years. We predict that the trajectories of boys in the top quartile of childhood-typical conduct problems during the early waves will fan out over time, with boys at two extremes (a) improving in childhood-typical conduct problems, or (b) showing little decline in childhood-typical conduct problems, while worsening in adolescent-typical conduct problems (life-course delinquents). In contrast, we predict that boys in the lowest quartile of childhood-typical conduct problems during the early waves will never show any appreciable level of childhood-typical conduct problems. However, some of the boys in the three lower quartiles of childhood-typical conduct problems will show increases in adolescent-typical conduct problems during adolescence, particularly non-aggressive antisocial behaviors (adolescent-limited delinquents).

If these patterns are observed, two types of risk factor analyses will be conducted. Among boys with high levels of early conduct problems, potential early risk and protective factors will be tested to determine if they predict improvement over time versus high levels of adolescent aggression and antisocial behavior. Similarly, risk and protective factors during childhood and adolescence will be tested to see if they predict which boys with lower levels of childhood antisocial behavior will later engage in antisocial behavior during adolescence.

**Physical Aggression and Conduct Problems in Youth : Early Versus Late Onset****RISK FACTORS OF PHYSICALLY AGGRESSIVE AND  
NON-AGGRESSIVE ANTISOCIAL BEHAVIOR IN ADOLESCENCE**

Diana Smart &amp; Ann Sanson

*Australian Institute of Family Studies, Australia*

John Toumbourou

*Royal Children's Hospital, Australia*

While adolescence is a critical period for emergence and entrenchment of a number antisocial behaviors, their roots in earlier childhood are also apparent. This paper draws on data from the Australian Temperament Project, a longitudinal study of a large representative cohort of children and families from urban and rural areas of Victoria, Australia. The study contains 12 waves of data from infancy onwards, collected via mail surveys of parents, children and teachers. Observational and interview data from an in-depth home visit study at age 15-16 years are also available for a sub-sample. Here we investigate antisocial behavior at 17-18 years, comparing adolescents who primarily engage in physical aggression, a non-aggressive group who commit delinquent acts such as stealing and vandalism, those showing both types of antisocial behavior, and a problem-free group.

Models of the development of antisocial behavior identify a range of constitutional, cognitive, social and contextual risk factors. The transactional approach emphasises the contribution of childhood temperament, behavior, psychological and social factors to the development and persistence of adolescent problems. In contrast, the social development model emphasises the role of proximal factors, particularly the protective role of youth attachment to prosocial family, school and peers. Both questionnaire and observational data will be used to examine the salience of these contrasting perspectives for aggressive and non-aggressive adolescent antisocial behavior, investigating differential patterns of proximal and distal risk factors.

**Models, Genetics, and Aggression in Animals and Humans****DEVELOPMENTAL STUDY OF AGGRESSION IN A BREED OF COWS (HÉRENS)  
SELECTED FOR DOMINANCE ABILITY**

Pierrich Plusquellec  
*Université de Montréal, Canada*

M.F. Bouissou  
*Institut National de la Recherche Agronomique, France*

The Hérens breed is a dairy breed, whose "belligerent" temperament is exploited in popular public events when cows fight each other to establish a social hierarchy. Animals of this breed have been selected for many generations for their ability to dominate and aptitude for fighting. The Hérens breed thus provides an interesting model for the study of social behaviour in domestic female cattle.

In order to assess the responses to selection, a comparative study of the Hérens (H) and another breed Brune des Alpes (BA), not subjected to selection for dominance and aptitude for fighting but, reared under the same management techniques has been conducted. Irrespective of the age (6, 10-12, 18 months or more than 4 years old), the superior dominance of H animals is clearly evident. This validates the chosen experimental model. At 6 months of age, H calves were more aggressive than BA animals. On the other hand, this situation is reversed in adult cows. Our hypothesis is that higher skills in dominance ability may enhance regulation of aggressiveness during development.

In a next study, we have so attempted at an individual level to identify early predictors of higher skills in dominance ability. We followed the behaviour of 28 H calves from 6 (age of selection) to 30 months of age (age of first-fight). We found only one significant predictor: calves which were unreactive to fear-eliciting tests at 6 months of age became dominant heifers in encounter situation with unfamiliar animals at 30 months of age.

This result confirmed the vital role of emotional reactivity in the development of the ability to dominate in domestic female cattle, and ask the question of the role played by emotional reactivity in the selection of H breed, and thus in the regulation of aggression.

**Models, Genetics, and Aggression in Animals and Humans****AGGRESSION IN TWO LINES OF QUAIL (COTURNIX JAPONICA) DIVERGENTLY SELECTED FOR SOCIALITY**

Nathe François

*Université de Montréal, Canada*

Andrew D. Mills &amp; Jean-Michel Faure

*Institut National de la Recherche Agronomique, France*

By using 2 lines divergently selected for high (HSR) or low levels (LSR) of social reinstatement (SR) behaviour (as measured by the distance run in a treadmill, by a chick in order to rejoin a group of conspecifics) we try to assess the hypothesis which supposed that animals which were strongly attracted to one another would be less aggressive.

Introduction of an unfamiliar bird into established groups at 3 and 6 weeks of age was associated with a greater number of pecks directed at the unfamiliar bird which were followed by flight from the bird delivering the peck in the HSR line than in the LSR line ( $P < 0.02$ ). However, there was no significant difference between the two lines in overall levels of aggression.

In adult birds of 10, 12 and 14 weeks of age, paired encounters between males were associated with greater incidence of "aggressive" behaviour (pecking and mounting) in HSR lines males than LSR lines males.

In other experimental design, HSR line birds show low inter-individual distances when they are young or when they are unable to interact with other birds. Whereas, when HSR line birds are sub-adult or adult and free to interact with other birds, their behaviour is similar to LSR line animals.

The results obtained are contrary to our initial hypothesis. Indeed, it appears that HSR line birds show greater sensibility of their social environment and indulge in social behaviour of all types (including aggression) than their less socially LSR counterparts.

**Models, Genetics, and Aggression in Animals and Humans****'FIERCE': AGGRESSIVE BEHAVIOUR IN A TRANSGENIC MOUSE**

Kelly A. Young, *School of Public Health, Baltimore, USA*

Melissa L. Berry, Connie L. Mahaffey, Jennifer R. Saionz  
Norman L. Hawes, Bo Chang, Qing Yin Zheng, Richard S. Smith  
*The Jackson Laboratory, USA*

Roderick T. Bronson, *Tufts University, USA*

Randy J. Nelson, *Johns Hopkins University, USA*

Elizabeth M. Simpson, *University of British Columbia, Canada*

A new spontaneous mouse mutation named *fierce* (*frc*) results in extreme aggressive behaviour in homozygous mice. We have characterized the *fierce* behaviour, brain, and eye, phenotypes on three defined genetic backgrounds (C57BL/6J, 129P3/JEMs, and B6129F1). On all 3 backgrounds, *fierce* mice appear normal at birth, but on average, they fail to gain weight and then remain small. By three weeks of age, the animals are 'hard to handle'. Despite their smaller size, adult males are violent, repeatedly attacking siblings and mating partners if not separated. The *fierce* phenotype is most extreme on the C57BL/6J background where mice are blind, both sexes are highly aggressive, the females lack maternal behaviour. We performed standardized behavioural tests and show that C57BL/6J-*frc* and B6129F1-*frc* mice have deficits in sensorimotor assays and are hyperaggressive in both sexes and backgrounds. Developmental brain and eye abnormalities were observed on all 3 backgrounds. First observed in the embryo, *fierce* mice show abnormalities in brain development leading to hypoplasia of cerebrum and olfactory lobes, enlarged ventricles and often, overt hydrocephalus. Developmental eye abnormalities include thinning of the retinal layers, electroretinogram response, and abnormal patterning of hyaloid and retinal vessels. We show that *fierce* is deleted for the nuclear receptor *Nr2e1* gene (also known as *Tlx*, mouse homolog of *Drosophila* *tailless*). Overall, this extensive characterization of the *fierce* mutation is essential to its application for the study of behavioural, and brain and eye developmental disorders. In addition, the background-dependent differences revealed will enable the identification of important genetic modifiers.

**Models, Genetics, and Aggression in Animals and Humans****HUMAN DEFENSIVE BEHAVIORS: PARALLELS TO NONHUMAN MAMMALS**

Caroline Blanchard  
*University of Hawaii, USA*

Defense patterns of laboratory animals have been characterized in terms of the relationships between the type of defensive behavior (e.g. flight, freezing, hiding, defensive threat/attack, and risk assessment) and particular features of the threat stimulus and situation. As these defense systems provide major models for investigating the physiology and behavioral expression of emotional response, we evaluated potential parallels between them, and (threat) stimulus-response relationships in humans. 160 male and female undergraduate students read 12 scenarios involving a present or potential threatening conspecific, and chose a primary defensive response to each. These scenarios were designed to vary features known to influence defensive responding in rodents: magnitude, escapability, and ambiguity of threat; distance between threat and the subject; presence of a hiding place. Correlations between manipulated (and independently rated) features of the threat stimulus and situation and type of defensive behavior chosen as responses to these events were determined. Significant correlations ( $r = .56$  or more in the hypothesized direction) were obtained relevant to 8 specific hypotheses derived from the animal literature, with considerable but nonsignificant support for 2 additional hypotheses. While 3 predicted correlations were not supported in these findings, only a single significant correlation was obtained that had not been predicted on the basis of the animal literature. Although the scenario approach, and this application, have specific limitations, these results provide substantial suggestion of congruence between human and nonhuman mammal defense systems.

**Risk and Protective Factors****AGREEABLENESS AS PROTECTION AGAINST BECOMING A VICTIM OF AGGRESSION**

Ryan Adams<sup>1</sup>, Lauri A. Jensen-Campbell<sup>2</sup>, David G. Perry<sup>1</sup>,  
Katie A. Workman<sup>2</sup>, Janine Q. Furdella<sup>1</sup>, Susan K. Egan<sup>3</sup>

<sup>1</sup>Florida Atlantic University, USA

<sup>2</sup>University of Texas at Arlington, USA

<sup>3</sup>University of Massachusetts at Dartmouth, USA

*Introduction*

The current study examines the Big Five personality dimension of agreeableness as a predictor of decreases in victimization and as a buffer of the effects of behavioral risk factors on victimization for 47 6th and 7th graders. In previous research it was found that when compared to their peers, agreeable individuals respond to interpersonal conflict more constructively (Graziano, Jensen-Campbell, & Hair, 1996; Jensen-Campbell et al., 1996), cooperate more productively during interdependent group tasks (Graziano, Hair, & Finch, 1997), and work harder to suppress negative emotions during social interaction (Tobin, Graziano, Vanman, & Tassinari, in press) in part because they are able to control frustration generated by other people. Given the association of agreeableness with the ability to sacrifice self-interest in favor of communal needs, agreeable children should be advantaged in their peer relations, especially in becoming a victim of aggressive peers.

*Results*

First, a multiple regression found that self-reports of agreeableness predicted decreases over the school year in peer-nominations of victimization even after controlling for sex of participant, grade level, and the other four personality dimensions. Next, a series of multiple regressions revealed that agreeableness buffered the effects of behavioral risk factors for victimization. At low levels of agreeableness as levels of internalizing problems increased and social skills and physical strength decreased, levels of victimization increased. At high levels of agreeableness, there were no associations between the same behavioral risk factors and victimization. These results suggest that agreeableness may play an important role in harmonious group relations during childhood.

**Risk and Protective Factors****WHO BECOMES A PEACEMAKER?  
FINDINGS FROM AN INTERNATIONAL STUDY OF GRASSROOTS PEACEMAKING**

Mary Ann Cejka  
*CM Research & Study, USA*

A study of grassroots peacemaking efforts in Sri Lanka, Rwanda, the Sudan, Northern Ireland, the United States, Guatemala, and the Philippines examined the relationship between belief in a just world, images of the divine, and images of the opponent on participation in peacemaking as well as peacemaking strategies and motivations. Gender differences in peacemaking were also explored. It was found that peacemakers were universally more likely than non peacemakers to hold immanent images of the divine. Belief in a just world was associated with decreasing levels of all types of motivation for peacemaking and decreasing levels of all categories of peacemaking activity except praying for peace. Peacemakers were not more likely than non peacemakers to hold positive images of members of the opposing group. Except in Sri Lanka, members of <sup>3</sup>underdog<sup>2</sup> or traditionally oppressed groups tended to hold more positive images of the dominant group than vice versa. For the most part, specific gender differences in peacemaking were not universal but varied according to country. Overall, however, men involved in peacemaking were slightly more likely than women involved in peacemaking to cite religious motivations for their activities. Results also include qualitative findings on identity as a peacemaker, barriers to peacemaking, and the types as well as the relative effectiveness of the various strategies employed.

**NEGATIVE EMOTIONAL REACTIONS TO OBSERVED VIOLENCE  
AS AN INHIBITOR OF AGGRESSIVE BEHAVIOR: GENDER DIFFERENCES**

Lucyna Kirwil  
*Warsaw University, Poland*

The study investigated gender differences in the relation between individual differences in psycho-physiological responsiveness to violent scenes and individual differences in the propensity to behave aggressively. Recent social cognitive theorizing (Huesmann, 1998) suggests that individuals who show diminished negative emotional responses to violent scenes are more at risk to behave proactively aggressively. Among these low reactives, those who hold normative beliefs more accepting of aggressive behavior will be particularly prone to display proactive aggression. Moise (1998) has found evidence of such an affect on general aggression; however, Moise did not specifically test for proactive aggression, nor did she test females. In the current study both genders of young adults in Poland were assessed for different kinds of habitual aggression (proactive, reactive, direct, indirect, verbal, physical) based on self-reports and reports of a second person. Two sub-samples, one high and one low on aggression were then selected. These subjects' skin conductance was assessed while they were exposed to two extremely violent scenes from USA first run films -- one with justified violence and one with violence with no clear justification. We found that females showed more negative arousal to violence than the males. However, for both males and females we discovered that the more aggressive subjects responded with lower negative arousal to observed violence than did the less-aggressive subjects. Furthermore, as predicted, such subjects' normative beliefs were particularly good predictors of their aggressiveness. Contrary to expectation this result was not stronger for proactive aggression than reactive aggression.

**Risk and Protective Factors****COMPUTER GAMES AND AGGRESSION. A STUDY OF 8 AND 11 YEAR OLDS.**

Rachana Johri and Samyukta Subhramanyam  
*University of Delhi, India*

The presentation will report the results of an ongoing study on the relationship between violent computer games and the display of aggression. The study is based on a sample of 40 children in two groups of 8 and 11 years belonging to upper middle class homes in Delhi. In the past decade, personal computers have become available to a large number of children from upper middle class families. Computer games are one of the favorite activities performed by children on these computers. Currently, at the first stage, the study begins with the administration of a questionnaire to establish the extent of this activity. The questionnaire also seeks clarification on apparent sex differences in interest in violent computer games. If, as anecdotal evidence suggests few girls play these games, the sample will be only boys. In the second stage of the study, children will be asked to play specified computer games. One group will be given a violent game, the other will be given another game with little or no violent content. The measures of aggression will include an observation of the children while they are playing the games. Their verbalization during play will also be noted. This will be followed by two semi structured procedures, word completion and story completion. A brief interview with parents to assess their evaluation of the role of computer games on childrens' behaviour and the extent of knowledge and monitoring will also be carried out. Analysis will be both qualitative and quantitative.

**PROBLEM PROFILES OF AGGRESSIVE SUBGROUPS: VARIATIONS IN SOCIAL ADJUSTMENT**

Jenny Isaacs & Alice W. Pope  
*St. John's University, USA*

Accumulating evidence indicates that aggressive children are a heterogeneous group, and that poor outcome is not inevitable for all. The current study used a person-centered approach to investigate co-occurring positive and negative characteristics of aggressive children that were expected to be associated with varying levels of social adjustment. Participants were 514 boys and girls in grades 3-6 (Year 1) and 259 in grades 4-6 (Year 2; 67% retention). In both years, peer sociometrics were collected, yielding Social Preference scores. Children nominated classmates for eight behaviors/characteristics: internalizing (anxiety, withdrawal, sadness); dysregulated (immaturity, hyperactivity); positive attributes (attractive, prosocial, smart); aggression. To focus on children who were extreme on aggression, those in the upper 25% on Year 1 aggression scores were included in a cluster analysis, using 7 of the peer-nominated variables (aggression excluded). An interpretable 3-cluster solution emerged, with a group high on aggression and low on all other problems (Low Problem Aggressive); a group high only on hyperactivity and aggression (Hyperactive Aggressive); and a group high on all problems and low on positive qualities (Multiproblem Aggressive). The three high aggressive groups were compared to an Average Aggression group that was at the mean on aggression. In Year 1, the Multiproblem was lowest on Social Preference, with no differences found among the other three groups. The same pattern of results was evident one year later. Results suggest that high levels of aggression (even with co-occurring hyperactivity) are detrimental to children's social adjustment only when combined with internalizing problems and deficits in positive qualities.

**Risk and Protective Factors****THE UNDERGONE INJUSTICE SENTIMENT: ENRICHING THE AGGRESSION CONCEPT**

Nasredine Goutas, Fabien Girandola &amp; Jean-Pierre Minary

*Université de Franche-Comté, France*

The goal of our research is to examine the effect of the undergone injustice sentiment (an affect) on aggressive behaviours and beliefs in the legitimacy of violence. Deutsch (1983, 1987), then Lupfer, Weeks, Doan et Houston (2000) notes with regret the difficulty to develop the research relating to the actual experiences of people undergoing just or unjust events in different settings. One study investigated the interaction between presence or absence of undergone injustice sentiment and presence or absence of a competition situation. One hundred and fourteen adolescents participated in the study. The data obtained indicate that subjects in competition situation are more aggressive and beliefs on legitimacy of violence are more important when participants feel treated unjustly. Two other studies were conducted to explore influence of undergone injustice sentiment in a segregation situation. In these two studies, data were collected from ninety-two adolescents and one hundred and twenty five children. Results indicated again that social context had a strong impact on aggressive behaviours and on beliefs legitimising violence, mainly when segregation situation was accompanied by an undergone injustice sentiment. It is proposed to take into consideration this specific affect in prevention of juvenile violence and aggressive behaviours.

**Risk and Protective Factors****PLEASURE, IMPULSIVENESS, AND AGGRESSION IN PEOPLE OF DIFFERENT AGES**

Michel Cabanac, Marie-Claude Bonniot-Cabanac  
*Université Laval, Canada*

J. Martin Ramirez  
*Universidad Complutense, Spain*

The hypothesis that people tend to make behavioral decisions in function of their pleasure, was analyzed. Two main questions were posed:

1. May one behave aggressively because it produces pleasure?
2. Since many aggressive behaviors are of impulsive nature, is there any relationship between impulsiveness and the tendency to maximalize the pleasure?.

Four questionnaires were applied to 20 subjects of both sexes and different ages:

Questionnaire 1 (pleasure), describing several social intercourses followed with a given behavior to be rated hedonically.

Questionnaire 2 (decision-making), the subjects had to chose one of the behaviors listed in Questionnaire 1 (the method was previously elaborated by Cabanac).

Questionnaire 3, exploring moral attitudes towards aggression (CAMA, Ramirez 1985); and

Questionnaire 4, an impulsiveness scale (BIS 10, Barratt, 1985).

An ANOVA analysis of the data gave the following results:

1. There was a highly significative correlation ( $p < 0.0001$ ) between the perception of pleasure and the choice of the most agreeable behavior. These agreeable behaviors selected were more aggressive than the mean of the possible behaviors offered to the subjects ( $p < 0.03$ ). No sex differences were found between people of the same age, but there was a significant difference ( $p < 0.005$ ) in function of the age: the older the subject, the better the choice of agreeable behaviors.
2. There was a significant difference in function of the age: the older the subject, the more often the choice of agreeable behaviors ( $p < 0.005$ ), and the less often the choice of the least agreeable behavior ( $p < 0.02$ ). No sex differences were found between people of the same age.
3. Independently of their choice of behavior, the subjects rated significantly ( $p < 0.03$ ) as agreeable the most aggressive behaviors.
4. There also was a small but significant correlation ( $p < 0.03$ ) between the choice of pleasure and the justification of several aggressive behaviors in different situations. No significant differences in function of the age or of the sex were found.
5. Finally, the choice of the most agreeable behavior was significantly correlated with cognitive impulsiveness ( $p < 0.004$ ), but not with non-planning impulsiveness, nor with motor impulsiveness. No significant differences in function of the age or of the sex were found.

Consequently, it seems that impulsive aggression produces pleasure in the aggressor, as expected according to the hypothesis. And the older age, the more often the choice of agreeable behaviors.

**Advances and Limitations to the Prediction of Homicide**

Rolf Loeber  
*University of Pittsburgh, USA*

Past studies on homicide by young men have been largely retrospective and, therefore, have contributed very little to the scientific investigation of the predictors of homicide. The present paper reports on the prediction of homicide by young men in two sample of the Pittsburgh Youth Study, a longitudinal study from childhood to early adulthood. A step-wise prediction procedure is applied, first by the prediction of violence (including homicide), and second by the prediction of homicide among those males known for their violence. Predictors of homicide were a subset of predictors of violence. Homicide offenders scored significantly higher on the predictors than did nonhomicidal violent offenders. Thus, predictors of homicide were quantitatively rather than qualitatively different from predictors of violence. The results are discussed in the light of preventive measures for violence and homicide.

**Violent Video Games and Aggression****THE EFFECTS OF HIGH VERSUS LOW AGGRESSIVE PRIMING DURING VIDEO GAME  
PLAY ON AGGRESSION, AFFECT, HEART RATE, AND BLOOD PRESSURE**

Mary E. Ballard, Dawson Panee & Robert Hamby  
*Appalachian State University, USA*

Research has shown that playing violent video games is related to increased aggressive thoughts and behavior, negative affect, and cardiovascular reactivity. We examined the influence of high aggressive and low aggressive priming during video game training on several dependent measures, including violent action during game play (e.g. shooting, choking), hostility, frustration with game play, blood pressure, and heart rate. Male undergraduates ( $n = 36$ ) were trained to play Metal Gear Solid, an action game which allows players to advance by using stealth and/or violence. The participants were assigned to a high aggressive or low aggressive video game training priming condition. After training they played several regular game scenarios from Metal Gear Solid. Participants in the high aggressive priming condition used significantly more violent action during game play and reported more hostility than those in the low aggressive priming condition. Heart rate was correlated with feelings of hostility. Systolic blood pressure decreased and diastolic blood pressure increased across the course of violent game play. These findings indicate that both aggressive priming and use of game violence influenced arousal and negative affect and may increase behavioral aggression. Study 2 examined the effects of exposure to weapon primes on aggressive thoughts and behavior in a "first person shooter" video game, House of the Dead. This game can be played using either a standard controller or a realistic gun peripheral. Preliminary results will be discussed.

**WHAT YOUNG CHILDREN EXPERIENCE WHILE PLAYING VIOLENT VIDEO GAMES**

Jeanne B. Funk  
*University of Toledo, USA*

Playing violent video games is implicated in increases in aggressive thoughts, feelings, and behaviors in laboratory situations. Although this literature is still young, findings are consistent with the more established literature on television and movie effects which indicates that media violence contributes to increased aggression and violence in real life. Several mechanisms have been proposed including social learning, the development of aggressive schemas, and cognitive cueing and priming. It has also been suggested that game-playing may induce an altered state with a concomitant increase in susceptibility to behavioral influence. In the present study, focus groups were conducted with 17 fourth through sixth grade children (8 girls) in order to begin to examine what children experience while playing violent video games. In each group the same series of questions was posed, with children encouraged to respond as they wished. Interviews were audiotaped and then transcribed. Qualitative analyses were then performed. Both girls and boys reported that games with violence were their favorites. Girls preferred less realistic, cartoon-style violence and defined these as "action" games. Children described becoming immersed in game-playing and "getting inside the game," losing track of time, and repeating game actions later. More study is needed to identify the conditions under which behavioral transfer outside the game-playing situation may occur.

**Violent Video Games and Aggression****THE EFFECT OF VIOLENT VIDEO GAMES ON MOOD AND AFFECT**

Roger N. Johnson, Nosheen Kawaid &amp; Meredith Michalski Ramapo

*College of New Jersey, USA*

Forty-six college students played either a violent or a non-violent video game for 20 minutes after which they filled out attitude and mood scales. The violent game was Resident Evil 3: Nemesis which depicts bloodshed and graphic violence. The game involves a young woman in a destroyed city who has to shoot zombies in dark alleys. The control video was Need for Speed Hot Pursuit III which involves racing a car on a track at high speeds. Students rated both games equally exciting but only the Resident Evil game was rated as violent. The violent game produced significant elevations on the Trait Hostility Scale. On the scale of positive and negative affect (PANAS), students playing the violent game had significantly more negative affect including higher levels of hostility, guilt, and sadness. The results are discussed in terms of the negative effects produced by video game violence.

**EFFECTS OF EXPOSURE TO VIOLENT VIDEO GAMES**

Craig A. Anderson

*Iowa State University, USA*

Existing violent video game studies are examined with the twin goals of: (1) identifying legitimate and illegitimate methodological concerns; (2) addressing both types of concerns meta-analytically. Legitimate concerns include: (1) Small sample sizes; (2) Violent & nonviolent conditions insufficiently different in violent content; (3) Control or nonviolent game conditions that are more boring, annoying, or frustrating than the comparison violent game; (4) Failure to report sufficient results to enable calculation of an effect size; (5) Including aggression against an inanimate object in their measure of aggression; (6) Lack of longitudinal studies; (7) Trait aggression measures as dependent variables supposedly measuring aggressive behavior in short-term experimental studies. Illegitimate concerns include: (1) Too few studies; (2) Validity of lab experiments; (3) Dismissal of correlational studies; (4) Arousal explanation of all behavioral results; (5) Lack of studies of seriously aggressive behavior. New meta-analyses address these concerns and confirm that exposure to violent video games causes increases in aggressive thoughts, feelings, and behaviors and decreases in prosocial behavior. Analyses of "best practice" studies generally yield larger effect sizes than analyses that include studies with one or more unfixable legitimate concern.

**Genetic and Environmental Influences on Early Aggression Symptoms in Children****GENETIC-ENVIRONMENTAL ETIOLOGY OF SYMPTOMS OF AGGRESSION  
IN EARLY CHILDHOOD: A TWIN STUDY**

Daniel Pérusse, Richard E. Tremblay, Bernard Boulerice,  
Raymond Baillargeon, Elisa Romano & Michel Boivin

*Université de Montréal & Université Laval, Canada*

The present study explores the genetic and environmental contributions to individual variation in symptoms of aggression in a sample of 18-month-old twins from a population-based cohort. Participants were ascertained from birth records and recruited as part of the Quebec Newborn Twins Study (N=650 pairs), a prospective study aimed at assessing the emotional development of twins from infancy to adolescence. Aggression was assessed through maternal interviews during a home visit when the twins were 18 months of age. Quantitative genetic models were fitted to aggression items and to aggression classes. For all measures, scores were more correlated for monozygotic (MZ) than dizygotic (DZ) twins. The best-fitting models included substantial genetic influence, which accounted for the largest part of the familial aggregation observed for these conditions. These results, however, appear to be better explained by a non-genetic effect of zygosity generating assimilation and/or contrast biases in the maternal assessment of aggressive behavior in MZ and DZ twins, respectively. These findings are interpreted in relation to the developmental etiology of aggressive behavior.

**Genetic and Environmental Influences on Early Aggression Symptoms in Children****MATERNAL CONDUCT PROBLEMS, SOCIAL DISADVANTAGE, AND AGE AT FIRST BIRTH  
IN A GENERAL POPULATION SAMPLE OF MOTHERS OF 5 MONTH OLD INFANTS**

Mark Zoccolillo<sup>1</sup>, Lauren S. Wakschlag<sup>2</sup>, Raymond Baillargeon<sup>3</sup>,  
Michel Boivin<sup>3</sup>, Daniel Pérusse<sup>3</sup>, Jeroen K. Vermunt<sup>4</sup> & Richard E. Tremblay<sup>3</sup>

<sup>1</sup>*McGill University, Montreal, Canada*

<sup>2</sup>*University of Chicago, Chicago, IL*

<sup>3</sup>*Université de Montréal, Canada*

<sup>4</sup>*Tilburg University, The Netherlands*

**Background.** Young maternal age at first birth is both a consequence of maternal conduct problems and is associated with offspring conduct problems. The association between maternal age at first birth and maternal conduct problems has not been studied in a population sample of mothers. The proportion of all mothers with conduct problems who give birth at an early age; the proportion of all young mothers with conduct problems; and the relationship among conduct problems; socio-economic status; and age at first birth is not known. **Methods.** The association of mother's age at first birth (<21, 21 or older), 5 maternal conduct problems, low income, educational attainment, and maternal grandmother's age at first birth was examined using latent class analysis in 2218 mothers of 5-month-old infants in the province of Quebec, Canada. **Results.** A four latent class model fit the data. 27% of young mothers were from a latent class of social disadvantage and high probabilities of maternal conduct problems. 71.6% of young mothers were in a latent class of social disadvantage and low probabilities of maternal conduct problems. 67% of mothers in the conduct disorder latent class and 42.8% of mothers in the social disadvantage class were estimated to have their first child before age 21. The probabilities of young motherhood in the other two latent classes, characterized by average socioeconomic status and either low or less severe maternal antisocial behaviors were 0.02% and 1.4%. **Conclusions.** Maternal conduct disorder is strongly associated with a young age at first birth and is likely a major confounder for the association between young maternal age and offspring disruptive behavior. A second and distinct pathway to young age at first birth is through low socioeconomic status.

**Genetic and Environmental Influences on Early Aggression Symptoms in Children****INTRAINDIVIDUAL CHANGE IN PHYSICALLY AGGRESSIVE BEHAVIORS FROM 17 TO 29 MONTHS OF AGE:  
RESULTS FROM THE LONGITUDINAL STUDY OF CHILD DEVELOPMENT IN QUEBEC**

Raymond Baillargeon, Richard E. Tremblay, Mark Zoccolillo  
Daniel Pérusse, Claude Normand, Michel Boivin

*Université de Montréal, McGill University & Université Laval, Canada*

Physical aggression is believed to be one of the most stable trait. Yet, we have little information about the continuity and discontinuity of physical aggression in children before they go to school. Our objective is to estimate the continuity and discontinuity in physically aggressive behaviors from 17 to 29 months of age in the general population. Specifically, we want to answer two questions: (a) Does the majority of toddlers who manifest physically aggressive behaviors on a frequent basis at 17 months of age continue to do so one year later? and (b) Does the majority of children who manifest physically aggressive behaviors on a frequent basis at 29 months of age did so one year earlier?. The implications for the prevention and treatment by early screening of physically aggressive toddlers will be discussed.

**PHYSICAL AGGRESSION AND EXPRESSIVE VOCABULARY IN 18 MONTH-OLD TWINS**

Ginette Dionne, Richard E. Tremblay, Michel Boivin  
David Laplante & Daniel Pérusse

*Université Laval & Université de Montréal, Canada  
Douglas Hospital Research Center, Montreal, Canada*

Little is known about when language and aggressive behavior become linked during development and the mechanisms responsible for this association. This study investigated the association between expressive vocabulary and aggression in late infancy using a genetic design of 526 19-month-old twins. Physical aggression scores were derived from 10 items of a 37-item behavior checklist and expressive vocabulary scores were obtained via parent reports on a 77-word checklist. A modest but significant correlation ( $r = -.20$ ) was found between expressive vocabulary and physical aggression at 18 months. Substantial heritability was found for physical aggression. Quantitative genetic modeling indicates that the correlation between expressive vocabulary and physical aggression cannot be explained by shared genetic or environmental etiologies. However, phenotype-to-phenotype models indicate that the covariation can entirely be accounted for by a significant phenotypic path from expressive vocabulary to physical aggression.

**Genetic and Environmental Influences on Early Aggression Symptoms in Children****EFFECTS OF DATA COLLECTION METHODS ON THE HERITABILITY ESTIMATES  
OF EMOTIONALITY IN 18-MONTH-OLD CHILDREN**

Nadine Forget-Dubois, Daniel Pérusse, Michel Boivin  
Sandra Pouliot, George Tarabulsky & Richard E. Tremblay

*Université de Montréal & Université Laval, Canada*

Difficult temperament and negative emotionality have been linked to aggressive behavior in children. These aspects of temperament show substantial heritability, suggesting a genetic risk for the precursors of aggression. However, contrast effects, where the difference between the within-pair correlations of MZ and DZ twins is greater than predicted by quantitative genetic theory, are frequently encountered in studies of young twins that rely on questionnaires to parents, particularly in studies of temperament and emotion. Contrast effects tend to inflate heritability estimates, and could be caused by a tendency to exaggerate the differences between DZ twins when one rater assesses the two children of a pair. To explore the causes of contrast effects on emotionality measures, we rated in laboratory the occurrence and intensity of positive and negative affects during an experimental task, for 180 pairs of 18-month-old twins. A first rating was done independently for each twin by separate coders, and a second rating was done for both twins by one coder. If the comparison of twins by one rater causes the contrast effects, we expect to find greater heritability estimates for the dependant emotionality measures than for the independent measures. This study will shed light on the influence of the data collection process on heritability estimates for this aspect of temperament, and will help to evaluate the importance of genetic influence on precursors of aggression.

**Peer Relations****POST-CONFLICT RECONCILIATIONS AMONG COLOMBIAN  
PREADOLESCENTS AND YOUNG ADOLESCENTS**

Enrique Chau  
*Universidad de los Andes, Colombia*

Reconciliations after peer conflicts were studied among preadolescents and young adolescents living in violent neighborhoods in Bogotá, Colombia. During interviews, 55 participants (ages 8.0 - 14.0) narrated 89 stories of recent conflicts with friends and acquaintances. Participants were inquired about what had occurred to their relationships since the conflict. If their relationships had returned to normality, participants were asked for detailed accounts about how this occurred.

A large portion (43%) of conflicts was followed by reconciliations, most of them a day or more later. While reconciliations after conflicts among boys were as frequently explicit (e.g., offering apologies, presents, or hand-shaking) as implicit (i.e., returning to normality without any explicit reference to the conflict), reconciliations among girls were almost exclusively explicit. Reconciliations, and explicit reconciliations in particular, occurred significantly more frequently with friends than with acquaintances. This occurred even though aggression, in general, and physical aggression in particular, were similarly frequent during conflicts with friends and acquaintances. Laursen, Hartup, and Koplas (1996) have suggested that adolescents tend to avoid behaviors that could jeopardize their relationships with close peers. Instead of avoiding these behaviors during conflicts, participants compensated afterwards with conciliatory behaviors. Emotional dynamics are proposed as proximal explanations for these differences.

This study suggests that educational programs promoting peaceful ways of dealing with conflicts should focus more on what occurs after conflicts. Post-conflict periods seem to be difficult moments for preadolescents and young adolescents, and, at the same time, could become crucial for the promotion of peaceful relationships, particularly in violent environments.

**A DEVELOPMENTAL PERSPECTIVE ON AGGRESSIVE CHILDREN AFFILIATIONS**

Eric Dion & Michel Boivin  
*Université Laval, Canada*

Aggressive elementary school children tend to affiliate with peers demonstrating similar conduct problems. In theory, this type of affiliations maintains their behavior problems and insures a growing marginalization from the larger group of their normal peers. This problematic is addressed using longitudinal data covering the second half of elementary school years. Friends and clique members are identified at the end of each school year. Aggressive conducts are reported by teachers using a questionnaire. Results show that as soon as third grade, aggressive boys and girls tend to befriend or hang out with similar classroom peers. Contrary to expectations, this tendency does not intensify with age; it is stable. On the other hand, developmental trajectories analysis (Nagin & Tremblay, 2001) indicate that chronic cases of aggression continually affiliate with aggressive peers (friends and clique members). This reinforce the idea that affiliations with similar peers contribute to maintain behavior problems among aggressive children. Implications for prevention programs are discussed.

**Developmental Precursors of Intimate Partner Violence****CHARACTERISTICS OF CHILDHOOD SEXUAL ABUSE EXPERIENCES AND THEIR RELATIONSHIP TO REVICTIMIZATION AND ADULT FUNCTIONING AMONG AFRICAN AMERICAN AND WHITE WOMEN**

Monique Clinton-Sherrod  
*Wayne State University, USA*

Literature has suggested poorer functioning related to childhood sexual abuse (CSA) in a variety of domains including interpersonal relationships, risky sexual and substance use behavior, revictimization, and physical and psychological health. A cross-sectional community sample of 269 African American and white women completed a computer-assisted-self administered interview. Using a multifaceted definition of CSA, accounting for the severity of abuse behavior, duration of the abuse, and relationship to perpetrator, the relationships between exposure to CSA and various adult functioning outcomes were assessed. Among the women in this sample, 83 (30%) reported at least one experience of CSA ranging from a request to do something sexual to forced sexual intercourse. Preliminary analyses indicate that among abuse survivors, the severity of aggressive behavior involved in the abuse, relationship to the perpetrator, and disclosure of the incident affected outcome domains. Severity of aggressive behavior and the relationship to the perpetrator were related to increased rates of adolescent and adult revictimization. Women who disclosed their CSA experiences reported fewer numbers of mental health care visits and lower rates of depressive affect. These characteristics of abuse will be further analyzed to assess their relationship to the differences in the level of aggression used in adolescent and adult victimization among childhood sexual abuse survivors. As well, childhood sexual abuse and no childhood sexual abuse groups who experienced adolescent or adult sexual victimization will be assessed for differences in the levels of aggression in later victimization experiences.

**Developmental Precursors of Intimate Partner Violence****THE EFFECT OF VICTIMIZATION HISTORY AND ALCOHOL CONSUMPTION  
ON HYPOTHETICAL RESPONSES TO SEXUAL ASSAULT**

Jeanette Norris, William H. George, Susan Stoner & N. Tatiana Masters  
*University of Washington, USA*

Research over the last decade has shown a strong link between childhood sexual abuse and later sexual revictimization in women. However, the mechanisms whereby this occurs have not been investigated. Factors such as the type of relationship the woman has had with the assailant and their alcohol consumption at the time of the assault can affect her responses. A more serious relationship may intensify behavioral passivity because of the woman's emotional investment and the concomitant betrayal of trust experienced. Likewise, high intoxication on the part of the woman may make it difficult to respond behaviorally, evoking feelings of guilt and self-blame. Relationships among these variables were investigated in an experiment with 224 women, 21-35 years old. Participants were paid \$10/hr to take part in two sessions. The first session involved completing background measures, including the Childhood Trauma Questionnaire; the second involved an experimental protocol which included assignment to one of three beverage conditions (no alcohol; .04 BAL; or .08 BAL). Participants then projected themselves into a depiction of an interaction with a man who became increasingly sexually assaultive. The man's drinking (low versus moderately high) and the type of relationship (acquaintance versus dating) were manipulated as between-subjects variables. The story was paused three times to assess participants' perceptions of risk, behavioral responses, psychological barriers to responding, and emotional responses. Data analyses to date support the conceptual framework. The findings suggest that rape prevention programs that teach effective resistance need to be tailored to specific subpopulations of women.

**Developmental Precursors of Intimate Partner Violence****THE IMPACT OF PRIOR ABUSE ON WOMEN'S USE OF AGGRESSION WITH INTIMATE PARTNERS**

Paige Hall Smith & Jacquelyn W. White  
*University of North Carolina at Greensboro, USA*

The longitudinal study was designed to examine prospectively the relationship among the major risk factors that retrospectively have been identified as the best predictors of sexual victimization and perpetration. During two consecutive academic years the incoming classes of female students were administered a survey at the beginning of the fall semester. During the subsequent four spring semesters each cohort was resurveyed. Overall, 59.9% of the sample reported no experience with childhood victimization. Of those who reported abuse, 18.8% experienced some form of childhood sexual victimization; of those sexually abused 74.5% had a coercive experience with an adult (47% were fondled or experienced genital exposure; 27.5% experienced attempted or completed rape); the remainder were coerced by a similar-aged peer or relative. Over six percent (6.8%) witnessed domestic violence and experienced parental physical abuse; 19.4% experienced parental abuse but did not witness domestic violence; and 3% witnessed domestic violence but did not experience parental abuse. Of the entire sample, 7.9% experienced sexual and non-sexual childhood victimization. chi-square and odds analyses revealed a significant relationship between witnessing domestic violence, odds=1.7, and experiencing parental physical punishment, odds=1.9, and physical aggression toward romantic partners in adolescence; however, childhood sexual abuse was not related to adolescent physical aggression. Additionally, use of physical aggression toward a romantic partner in adolescence was highly related to the use of physical aggression in year 1 of college, odds=6.4. Additionally, use of physical aggression in one year of college was significantly related to its use the next year, respective odds = 4.1, 5.3, and 22.1.

**Developmental Precursors of Intimate Partner Violence****THE IMPACT OF CHILDHOOD VICTIMIZATION ON MEN'S VIOLENCE TOWARD INTIMATE PARTNERS**

Jacquelyn W. White & Paige Hall Smith  
*University of North Carolina at Greensboro, USA*

The longitudinal study was designed to examine prospectively the relationship among the major risk factors that retrospectively have been identified as the best predictors of sexual victimization and perpetration. During three consecutive academic years the incoming classes of male students were administered a survey at the beginning of the fall semester. For the men, 30.3% reported that they had some form of childhood sexual experience. Of these, 1.1% reported some form of coercive sexual experience that involved a similar-aged peer or relative and 8.3% experienced some sexual contact with an adult (5.3% experienced exposure and/or fondling by an adult; and 3% experienced attempted and/or completed sexual intercourse by an adult). A total of 69.3% of the men reported neither experiencing parental physical punishment nor witnessing domestic violence. Of the remainder, 5.5% both witnessed and experienced, whereas 2.2% reported only witnessing domestic violence and 23% reported experiencing parental violence but not witnessing domestic violence. Results revealed significant relationships between each type of childhood victimization and adolescent sexual assault toward a female; for childhood sexual assault, odds = 1.9; for witnessing domestic violence, odds = 4.1; for experiencing parental physical punishment, odds = 2.3. Overall, the odds of adolescent sexual perpetration, given any type of childhood victimization (sexual, physical or witnessed), is 2.5. Further chi square and odds analyses showed significant relationships between perpetration during one year of college and the subsequent year. Adolescent perpetration was associated with an odds of 6.1 for perpetration in the first year of college. Subsequent odds were 8.6 for years 1 and 2; 4.4 for years 2 and 3; and 16.3 for years 3 and 4.

**INDICATORS OF THE DEVELOPMENT OF SEXUAL AGGRESSION**

Karol Dean  
*Mount Saint Mary's College, USA*

Sexual aggression researchers have developed a fairly consistent model for statistically predicting sexual aggression in normal college males on the basis of personality characteristics. However, since most of the previous work was conducted using a cross-sectional data collection procedure, it has been difficult to assess the usefulness of these predictors across time. Using a longitudinal data set, this presentation will be based on regression analyses examining whether personality characteristics, and pre-college experiences can satisfactorily predict college sexual aggression. Personality predictor variables to be considered include negative masculinity, acceptance of violence and sexual dominance. Experiences that may predict later aggression include childhood delinquency, promiscuity, and witnessing family violence. Measures of these factors will be related to self-reported sexual aggression during the course of the longitudinal study. The implications of personality and experiential indicators of sexual aggression as predictors over time will be discussed.

**Social Capital and Aggressive Behavior****SOCIAL CAPITAL, FAMILY SOCIALIZATION, AND AGGRESSIVE BEHAVIOR**

Joan McCord  
*Temple University, USA*

The paper demonstrates a relationship between social capital and reduced risk for violence. Social capital was measured by observations of 232 families over a period of five years, when the boys in the study were between the ages of ten and sixteen. Church attendance, the mother's participation in social groups, and community solidarity indicated that families provided social capital. Direct observations of family interactions as recorded in case studies yielded data for understanding family socialization. Criminal records collected when the boys had reached middle age, more than forty years after the study began, provided the measure of aggression. The paper reports the interplay between social capital and family socialization as these affect subsequent violent criminal behavior.

**CAPITALIZATION PROCESSES AND GENDER DIFFERENCES  
IN THE DELINQUENCY OF SIBLINGS IN TORONTO AND BERLIN**

John Hagan & al.  
*American Bar Foundation, USA*

The focus of this paper is on youth capitalization as it relates to gender differences in the delinquency of siblings. The study of opposite sex siblings provides a unique opportunity to examine variation in how parental capitalization of sons and daughters is influenced by the same family unit. The structural form and function of the family changed enormously in relation to gender over the latter half of the last century, as reflected in the growing participation of mothers in the labor force of western developed nations. Nonetheless, adolescent females in the latter more modern and less patriarchal families may remain beneficiaries of the greater investment of their parents's social capital in the control of their daily lives. In contrast, adolescent males may benefit less from this capitalization and still remain at greater risk of involvement in delinquency. The implication is that the male subculture of delinquency is a residue of the former hegemony of an outmoded patriarchal power structure. In this sense male subcultural delinquency may be a vestigial social trait, making male subcultural delinquents the social dinosaurs of a passing more patriarchal era. These ideas are tested with data gathered in contemporary German and Canadian school settings.

**Social Capital and Aggressive Behavior****SOCIAL CAPITAL AND VIOLENT CRIME RATES ACROSS U. S. COMMUNITIES**

Steven F. Messner  
*University at Albany, USA*

Eric P. Baumer & Richard Rosenfeld  
*University of Missouri-St. Louis, USA*

Several prominent theoretical statements during the past decade have postulated that depleted social capital leads to a wide range of social problems. Moreover, a recent empirical analysis for a nationally representative sample of macro-units in the U.S. offers suggestive evidence that social capital is in fact related to rates of criminal homicide. We go beyond previous research in several respects. One, we reassess the effect of social capital on homicide rates with more comprehensive and theoretically informed measures of social capital. Two, we expand the focus beyond criminal homicide to encompass other forms of criminal violence. Three, we formulate and estimate models of violent crime rates that incorporate differing conceptualizations of social capital. These models permit an examination of the direct effects of social capital on violent crime rates and assessments of how social capital might mediate and/or moderate the effects of other determinants, such as structural disadvantage. Our analyses are based on data from the Social Capital Community Benchmark Survey merged with information on violence from the U.S. vital statistics, the Uniform Crime Reports (UCR), the Supplementary Homicide Reports (SHR), and indicators of structural disadvantage from the U.S. Census Bureau.

**SOCIAL CAPITAL AND VIOLENT CRIME IN ITALIAN PROVINCES**

Uberto Gatti<sup>1</sup>, Richard E. Tremblay<sup>2</sup> & Hans Schadee<sup>1</sup>

<sup>1</sup>*University of Genoa, Italy*

<sup>2</sup>*Université de Montréal, Canada*

A number of recent theories suggest that civic engagement and social capital protect a community from violent crimes. Most empirical studies of this hypothesis have been conducted in North America. This paper examines to what extent this hypothesis applies to Italy and to two forms of violent crime: homicide and robbery. Official statistics on "civicness" (voter turnout, number of associations, reading newspapers daily), unemployment, per capita G.D.P., urbanization and couples' separation from the 95 Provinces of Italy were used as predictors of violent crime. We hypothesised that Provinces with high levels of "civicness" would be more successful in preventing the development of violent crime. We used multiple regression analyses and results generally supported this hypothesis.

Analyses of interactions among independent variables revealed that the positive effect of "civicness", which at first sight appeared to concern the whole of Italy, in reality concerns only the part of Italy where violent crimes are more frequent (homicide in the South, robbery in the more urbanized areas).

**Development of children's aggression: Early experiences, maltreatment,  
and factors influencing stability and instability over time****CHILD ABUSE IN SCANDINAVIA**

Kaj Björkqvist & Karin Österman  
*Åbo Akademi University, Finland*

In all Scandinavian countries, corporal punishment is prohibited by law. Sweden's legislation is from 1979, with Finland, Denmark and Norway following closely behind. Parents who hit their children may be fined, and this law is also implemented in practice. Furthermore, corporal punishment is forbidden in schools; Finland's legislation in that respect goes back to 1914. The present paper reviews studies on the prevalence of child abuse in Scandinavia, particularly in Finland and Sweden, and related factors such as subsequent aggressiveness in the child. Findings from a study comparing Finland and Ireland are presented. A cross-cultural comparison between data from Finland and U.S.A., comprising data from two generations and based on Assessing Environments III, is also presented.

**NEGLECTFUL PARENTING AND THE DEVELOPMENT OF CHILDREN'S AGGRESSION  
DURING THE EARLY SCHOOL YEARS**

John F. Knutson  
*University of Iowa, USA*

David DeGarmo & John B. Reid  
*Oregon Social Learning Center, USA*

Although child neglect is the most prevalent form of child maltreatment, there has been a comparative lack of empirical research into the characteristics of neglecting families and the psychological consequences of neglect. In studying neglectful families, existing research has failed to distinguish among several forms of neglect and has failed to actually detail the relational aspects of neglecting families. Although there is suggestive evidence that neglect could play a role in the development of children's aggression, limitations in existing data preclude making strong inferences regarding the link between neglect and aggression. In the present paper a theoretical framework is developed that emphasizes the importance of distinguishing the roles of two forms of neglect (denial of critical care and supervision) and punitive discipline in the development of aggression in elementary school-aged children. A preliminary test of the model is presented that is based on a cohort of 671 families enrolled in a universal prevention project. Although the findings supported the theoretical model, they also indicated that the relative importance of both forms of neglect, punitive discipline, and baseline aggression in predicting change in children's aggression five years later differed as a function of the developmental status of the child.

**Development of children's aggression: Early experiences, maltreatment, and factors influencing stability and instability over time****GENDER DIFFERENCES IN THE DEVELOPMENT OF AGGRESSION FROM CHILDHOOD TO ADULTHOOD:  
EVIDENCE FROM SOME RECENT LONGITUDINAL STUDIES**

L. Rowell Huesmann  
*University of Michigan, USA*

One of the most consistent findings in aggression research is that aggression is a relatively stable, self-perpetuating behavior which begins early in life. However, there have been disagreements among researchers as to what is actually causing this stability and as to the type of stability which is most important. Also, until recently most of the research on the stability of aggressive behavior like most of the research on all aspects of aggression has focused to a great extent on males. Aggressive males have seemed to pose the greater threat to society and been presumed to engage in far more aggression of social concern. This focus has obscured the fact that information on gender differences in stability could help us understand the underlying factors that promote continuity of aggressive behavior. In this paper I review the empirical research on the stability and continuity of aggression from early childhood to young adulthood and examine gender differences. Data from two longitudinal studies with both males and females will be presented that show continuity across the levels of aggression with lower continuity in females. I argue that females display less continuity in aggression than males for two reasons. First, they are less prepared biologically for physical aggression or predisposed neurophysiologically for aggression and therefore more susceptible to socialization out of aggression. Second, I suggest that the cultural, sub-cultural, and societal norms that influence socialization of our children show greater variation over time for females than for males -- thus introducing more discontinuities for females over time.

**Development of children's aggression: Early experiences, maltreatment, and factors influencing stability and instability over time****INDIRECT/SOCIAL/RELATIONAL AGGRESSION IN CHILDREN AND ADOLESCENTS:  
A META-ANALYSIS OF GENDER- AND AGE-SPECIFIC DIFFERENCES**

Herbert Scheithauer

*University of Bremen, Germany*

Franz Petermann

It has often been suggested that males are more aggressive than females. But, the majority of studies of aggression in children and adolescents has only examined overt (e.g. physical aggression) and/or verbal forms of aggression.

During the last two decades, a discussion emerged, concerning gender-specific forms of aggressive behavior: Although boys are more overtly aggressive than girls, it may be, that girls are not less aggressive than boys, but instead express their aggressive behavior differently. Several empirical studies differentiated (next to verbal and physical) - between indirect (harm delivered circuitously, using social manipulations), social (actions directed at damaging the other's self-esteem, social status or both) and relational aggression (behaviors intended to damage another person's peer relations).

The empirical results are somewhat controversial concerning the amount of indirect/social/relational aggressive behavior. The purpose of the current, quantitative meta-analysis is to determine whether relational aggressors are more likely to be boys or girls or whether similar numbers of boys and girls are classifiable as relational aggressors. We identified about 70 primary studies, including many yet unpublished data sets (e.g. conference papers, posters). An estimation of the median value of the effect sizes,  $d$  is given (the difference between the means of the groups of boys and girls, divided by the pooled standard deviation, according to procedures described in Hedges & Becker, 1986). Important mediators, like age or method of measurement/source of information (e.g. peer-nomination, self-inventory), are supposed to have an impact on the magnitude of the effect sizes. The results are discussed against the background of developmental and developmental psychopathological theory.

**Development of Aggression****FAMILY FUNCTIONING AND CHILD BELIEFS ABOUT VIOLENCE AS DEVELOPMENTAL PRECURSORS OF CHILDHOOD AGGRESSION: RISK AND RESILIENCY-PROMOTING FACTORS**

Jasmina Burdzovic Andreas &amp; Malcolm W. Watson

*Brandeis University, USA*

The longitudinal effects of family functioning and children's attitudes about violence on the development of aggression were studied in a community representative sample of 391 school age children (range: 7-13) and their mothers. More specifically, we were interested in assessing the possible protective role of children's beliefs of violence as an unjustifiable problem-solving tool against the risks of dysfunctional homes.

Using structural equation modeling and a cross-lagged panel design, we examined causal relations among sub-optimal family functioning (low cohesion and expressiveness) and child aggressive behaviors (from mother and child reports). As expected, family dysfunction at Time 1 significantly predicted subsequent aggression in children ( $\beta = .18$ ,  $p < .01$ ), while childhood aggression at Time 1 was statistically unrelated to the later quality of family environment (see Figure 1). The model fit data very well ( $\chi^2=38.04$ ,  $df=24$ ,  $p=.034$ ; RMSEA = .039; GFI = .98; AGFI = .96).

The second model directly tested whether children's negative views of aggression reduced the effects of family dysfunction on children's behavioral problems. Contrary to our expectations, children's disapproval of aggression as a problem-solving tool did not mediate the relation between family functioning at Time 1 and child aggression one year later. The model was a poor fit with the data (see Figure 2). We found no association between children's non-violent beliefs and their subsequent behavior at Time 2, suggesting a more dominant role of negative family environment in the development of childhood aggression and the need for more family-focused preventive strategies.

**Development of Aggression****TRAJECTORIES OF PHYSICAL AGGRESSION AMONG CHILDREN EXPERIENCING PERSISTENT  
AND INTERMITTENT FAMILY ECONOMIC HARDSHIP**

Isabelle Ouellet-Morin, Michel Boivin & Ginette Dionne  
*Université Laval, Canada*

The purpose of this study was to examine the relation between the family context of poverty and the development of early physical aggression. First, we investigated the development of physical aggression in relation to economic deprivation and such poverty correlates as family structure, parental education and employment status. Second, the longitudinal design of this research permitted to evaluate the relation between physical aggression and persistent or intermittent economic hardship over time. The pilot study of the Longitudinal Study of Child Development in Québec (LSCDQ) is a prospective longitudinal study of children, first seen at 5 months, who were sampled to be representative of all infants between 59 and 60 gestation weeks of age in 1998 in the province of Québec. Most of the 575 children were again seen at 17, 30 and 42 months. Child physical aggression was examined using mothers' and fathers' reports of child behaviors including items on physical aggression at 17, 30 and 42 months of age. Socio-demographic questionnaires were completed at each data collection. We find that economic deprivation explains a significant portion of the variance for physical aggression, even after accounting for family structure, parental education and employment status. Furthermore, statistical analysis of trajectories over time indicated that children experiencing persistent economic hardship showed significantly higher rates of physical aggression than that of children who faced intermittent or no economic hardship. Further analyses are needed to evaluate if these trajectories are influenced by other characteristics of children such as difficult temperament and low verbal ability usually correlated with general behavior problems in children.

**Development of Aggression****DEVELOPMENTAL ORIGINS OF AGGRESSIVE BEHAVIOR**

Carollee Howes &amp; Kay Sanders

*University of California at Los Angeles, USA*

This study longitudinally investigates the relations among socialization experiences around issues of routines and compliance, affective relationships, and mother-child attachment as precursors of aggressive behaviors in early childhood. We predicted that children who experience secure mother-child attachment relationships and socialization experiences that scaffold routines and compliance will be less aggressive. Much of the research supporting these expectations focuses on white, middle class samples in laboratory settings. Our work in contrast examines the experiences of children in low-income Latino first generation immigrant families. We visited the homes of the children when they were 8, 14, 24 and 36 months of age. Observers were bilingual and they communicated in the language choice of the family. We observed compliance, routines, and affective interactions and rated maternal sensitivity (Maternal Behavior Q-Sort) and mother-child attachment (Attachment Q-Sort). At each age period, we used compliance, responsive involvement and affective variables in a K-Ward cluster analysis program to find a small number of clusters that each contained at least ten cases. We used attachment and sensitivity scores and subscales to discriminate among the clusters. We were able to discriminate among the clusters with more sensitive mothers and more secure mother-child relationships associated with more scaffolding of children's routines and compliance and more positive affective interactions. These findings are consistent with the theory of socialization that links socialization to attachment and committed compliance.

**AGGRESSION-VARIED EXPRESSIONS, ANTECEDENT CONTEXTS & THERAPEUTIC IMPLICATIONS**

Vinita Kshetrapal

*University of Delhi, India*

Through a number of clinical case fragments various direct & indirect expressions of aggression have been presented along with the antecedent contexts & therapeutic implications. Normal anger with its constricted range because of repressed parts has been discussed through a case fragment. The antecedent context of family values about anger has been described. Conformity to this value system & consequent repression of acknowledgement coupled with concomitant expressions in terms of dreams, sarcasm & a fear of anger in oneself & others. The therapeutic implications for the repressed parts have been discussed bringing out the constructive functions served by anger for the personality.

Through some more clinical fragments, a persistent free-floating rage has been described. Here the roots of the rage are too far from the consciousness leaving an ever-ready uncontrollable rage for confrontation. At the emotional experience level, a massive fear of annihilation is discovered. A transient loss of object vs. self differentiation is observed under this kind of rage. In the observer, it evokes shock & surprise reaction because of its misplaced intensity. The antecedent contexts in these clients included a double-bind mothering context, a desired abortion on the part of the mothers when these patients were conceived, & emotional abuse leading to a non-verbal, difficult to articulate experience of abandonment. The therapeutic strategies indicated should have a containment theme. The therapist as a positive object comprised another effective theme. Psychodrama coupled with a nurturant & flexible version of psychoanalysis are potential therapies.

**Development of Aggression****CHILD/ADOLESCENT DEVELOPMENTAL TRAJECTORIES OF OPPOSITIONAL AND ANTISOCIAL BEHAVIOR  
PREDICTING YOUNG-ADULT DELINQUENCY**

Hans M. Koot, Ilja L. Bongers, Andrea G. Donker,  
Peter H. van der Laan & Frank C. Verhulst

*Free University Amsterdam, Erasmus University Rotterdam  
University of Leiden, The Netherlands*

The combined theories developed by Loeber et al. (1993) and Moffitt (1993) predict both combined and separate developmental trajectories for oppositional, aggressive, and antisocial behavior. Loeber's model essentially predicts two pathways, one leading from early oppositional problems through aggressive behavior to a combination of aggressive behavior and property violations, and a second one developing from oppositional behavior to property and status violations. Moffitt's model predicts (for both boys and girls; Moffitt et al., 2001) that a small proportion of children will display a life-course persistent pathway of different antisocial behaviors and a significant proportion (one quarter) will show adolescence onset/limited antisocial behaviors. These hypotheses were tested using parental CBCL reports of externalizing problems in a multi-cohort general population sample of 2,076 children and adolescents ages 4-16 (51% female), who were biannually assessed across an 8-year period (Time 1-5). In addition, we tested the predictive power of the hypothesized pathways regarding violent delinquency, serious delinquency and non-serious delinquency (cf. Loeber et al., 1998) reported by the young adults themselves at the 14-year follow-up (Time 6; N = 1,547; ages 18-30 years). Problem items were organized along the dimensions from Frick's meta-analytic model of conduct problems (Frick et al., 1993), including the categories oppositional, aggressive, property violations, and status offenses. The Frick model showed an excellent fit to the data (GFI=.92 for males; GFI=.96 for females). Developmental trajectories were estimated separately for males and females and each of the problem categories using the semiparametric mixed model approach (Nagin, 1999). These analyses supported 3 to 4 developmental trajectories for each problem category by sex, with groups following stable high, medium, and low trajectories for most categories of behavior. Lending partial support for both theories, decreasing trajectories were found for the aggressive category in males, and increasing trajectories for property violations in males, and for status violations in both males and females. For males, childhood and adolescent trajectories indicating high persistent opposition, adolescent peak aggression, and high increasing property violations and high increasing status violations were significant predictors of increased risk of young adult violent and serious delinquency. Similar trends were found for females, though these were not significant due to the low rate of delinquent acts reported by young adult women. Findings are discussed in relation to Loeber's and Moffitt's theories.

**Media Violence and its Impact on Behavior: Context and Consequences**

Ed Donnerstein  
*University of California at Santa Barbara, USA*

This presentation will begin with an overview what we consider to be the major roots of youth violence. Drawing upon a recent report from the Surgeon General of the United States, those factors considered to increase the risk of youth violence will be noted, and special attention will then be paid to those which focus upon social and cultural indicators. The presentation will then examine the role which the mass media have in shaping these social and cultural indicators. In particular, the presentation will seek to identify the contextual features associated with violent media depictions that most significantly increase the risk of a harmful effect on the audience. In addition, the presentation will analyze the television and film environment in depth to report on the nature and extent of violent depictions, focusing in particular on the relative presence of the most problematic portrayals, particularly for young children.