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Understanding adolescent antisocial behaviour from  
attachment theory and coercion theory perspectives

Kirsten Voss

A Thesis

in

The Department

of

Psychology

Presented in Partial Fulfilment of the Requirements  
for the Degree of Doctor of Philosophy at  
Concordia University  
Montreal, Quebec, Canada

August, 1999

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Understanding adolescent antisocial behaviour from  
attachment theory and coercion theory perspectives

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Concordia University, 1999

This study examined adolescent antisocial behaviour from two theoretical perspectives: attachment and coercion theories. Adolescents ( $N = 662$ , mean age: 15.8 years) completed measures of coping styles, attachment styles and coercive interactions (with mother and father), and rated their parents' use of hostile punishment and parental monitoring. They also reported involvement in delinquent activity and drug use, and sexual attitudes and behaviours.

According to attachment theory, insecurity may be related to behavioral maladjustment directly, or indirectly through dysfunctional ways of coping. Consistent with this view, two forms of insecure attachment (dismissing and fearful) were directly associated with more delinquency, experimentation with more drugs, and using drugs in response to strong emotions. Dismissing attachment was also related to riskier sexual attitudes. However, coping style did not mediate the attachment-antisocial behaviour link. Nonetheless, attachment styles were differentially related to ways of coping with stress. Secure teens used more constructive coping and less unhealthy strategies. Those who were more dismissing or preoccupied used more emotion avoidance, and those who were more fearful tended to be self-critical and to withdraw emotionally and behaviorally. A non-significant trend between fearful attachment and angry confrontation was also found.

According to coercion theory, ineffective parenting contributes to adolescent antisocial behaviour indirectly, through association with deviant peers. Consistent with

this model, results from structural equation modeling showed that teens who are monitored more associate with less deviant peers, and engage in less antisocial activity. Those whose parents use hostile punishment are more antisocial.

The combination of both theoretical perspectives, using path analysis, allowed a more complete understanding of adolescent antisocial behaviour. Insecure attachment was indirectly related to delinquency and substance use, through a contentious home environment (characterized by hostile punishment, coercive interactions, and poor monitoring). The link between insecure attachment with father and antisocial outcomes was also mediated by more frequent coercive interactions and teens' use of more angry confrontation. These findings highlight the relevance of considering both affective and social learning processes for understanding adolescent risk behaviour.

## Acknowledgements

This project could not have been completed without the support and assistance of many significant individuals. I would like to begin by thanking the students who participated in the research. Because of your help, we now have a better understanding of what it is like to be a teenager during the 1990s. Your genuineness will be invaluable for helping others who experience difficulty during adolescence. I would also like to express my gratitude to the principals and teachers who made this work possible. I am particularly grateful to Dr. Gardner and Mrs. Barry, who were instrumental in helping this project run smoothly.

I would especially like to thank Dorothy Markiewicz, my supervisor, for her support, encouragement, and assistance over the years. Dorothy, I am very happy that you took me on as a graduate student. You have guided me and allowed me to pursue my own interests, which I have greatly appreciated. I have admired your positive attitude toward life and work, and your strength in times of challenge. Thank you.

I am also grateful to Anna-Beth Doyle for her help and constructive criticism. Anna-Beth, even though it was never official, you have essentially been a co-supervisor to me. The time you have given to me over the years has been greatly appreciated. I have learned a lot from you.

I would also like to thank Drs. Alex Schwartzman and Pete Seragarian - my committee members. Your comments have helped strengthen my dissertation, and given me many new things to think about. A special thank you to Bill Bukowski too, who went beyond the call of duty to give me pointers on structural equation modeling. Thanks also

to Dr. Linda Pagani, the external examiner, whose comments will be very useful when I write up the manuscript for publication.

Thanks to all my friends at Concordia, who knew what I was going through and helped me through it all. Thanks to mom and dad, and my brother Bruce, who believed in me and supported me all the way. And thanks to my spouse, Eric, who managed to put up with me through it all!



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## Understanding adolescent antisocial behaviour from attachment theory and coercion theory perspectives

Interpersonal relationships play an important role in social-emotional development from the earliest stages of life and, in many ways, come to shape how individuals face life's challenges. Adolescence is considered to be a tumultuous and somewhat stressful period during which numerous physical, intellectual, and emotional changes take place (Peterson, Kennedy, & Sullivan, 1991). It is also a time when individuals face a variety of developmental challenges, including the difficult task of developing autonomy while maintaining connections with others. In order to successfully manage these various challenges, adolescents need effective emotion regulation skills and coping abilities. It is likely that development of such skills depends in part on the quality of adolescents' relationships with significant others and the learning experiences acquired in these relationships.

Adolescence is a time of exploration and discovery during which children attempt to further develop their own identities, and to experience themselves as distinct and independent individuals (Cooper, Grotevant, & Condon, 1983). A large number of adolescents test limits and experiment with risky behaviours, perhaps as a way of achieving status (Moffitt, 1993). For some, involvement in antisocial behaviour is limited, however for others, it is more problematic.

This study examines involvement in antisocial behaviour from two theoretical standpoints: attachment theory (Bowlby, 1969, 1973, 1980) and coercion theory (Patterson, 1982; Patterson, Dishion, & Bank, 1984; Patterson, Reid, & Dishion, 1992;

Reid & Patterson, 1989). The paper begins with a review of descriptive information regarding antisocial behaviour during the teen years. Next, coercion theory is presented and contrasted with attachment theory. Attachment theory is then reviewed, highlighting the role of attachment style in coping strategies and behavioral adjustment. Subsequently, a model is presented integrating the two theoretical perspectives. The introduction concludes with an overview of the hypotheses to be tested in the current investigation.

### Antisocial behaviour during adolescence

A substantial number of adolescents engage in antisocial activities. Antisocial behaviour includes any behaviour which goes against society's established norms. Certain antisocial behaviours are of more concern than others, given their potentially harmful consequences. These include delinquent acts which violate the law (e.g., theft, fighting, vandalism), use and abuse of psychotropic substances (alcohol & drugs), and irresponsible sexual behaviours (e.g., early sexual intercourse, multiple partners, unprotected intercourse).

Typically, involvement in criminal activity is low in childhood, increases rapidly in adolescence, peaks around age 17 (Stevenson, Tufts, Hendrick, & Kowalski, 1998), then drops off rapidly between 17 and 30 (Farrington, et al., 1990). In non-clinical samples, researchers have found that by the age of 18, most adolescents report having engaged in some form of delinquent behaviour (Elliott, et al., 1985; Moffitt, 1993). By age 18, approximately 75-90% of adolescents also report having used alcohol (Adlaf, Ivis, Smart, & Walsh, 1995; King, Beazley, Warren, et al., 1988). Smaller proportions of adolescents have been found to abuse alcohol, and to use illicit drugs such as marijuana (Adlaf, et al.,

1995). Nonetheless, in 1988, 57% of Canadian youths in Grade 11 reported drinking 3 or more alcoholic drinks at a time when they did drink (King, et al., 1988). By age 18, approximately 60% of youths also report having had sexual intercourse (Moore & Rosenthal, 1993; King, et al., 1988). Furthermore, of those youths who are sexually active by this age, roughly 50% have had more than one partner, and most have engaged in unprotected intercourse (Moore & Rosenthal, 1993; King, et al., 1988). Research indicates that although these behaviours are highly interrelated, they are often sufficiently distinct to be examined independently (Capaldi, Crosby, & Stoolmiller, 1996; Rodgers & Rowe, 1990; Tubman, Windle, & Windle, 1996), suggesting the possibility of different etiological pathways.

Given the large proportion of adolescents who engage in antisocial behaviours, some authors have suggested that these acts can be viewed as normative, yet a consistent pattern of misbehaviour from early childhood is greater cause for concern (e.g., Elliott, et al., 1985; Moffitt, 1993). Despite the frequency of antisocial activity in adolescence, the deleterious impact of these behaviours on society in general, and on the adolescents themselves, underscores the need for further research regarding contributing factors. Adolescent delinquency creates numerous victims. Not only are members of society affected (e.g., victims of vandalism, theft), but adolescents who find themselves incarcerated will face many decreased opportunities (e.g, for positive peer interaction, for jobs). In addition, substance use can lead, in some cases, to abuse, dependency, and crime. Teenage pregnancy and/or infection with sexually transmitted diseases may also be consequences of irresponsible sexual activity, leading to negative outcomes for both the



adolescents concerned, and their children.

### Coercion theory

To date, one of the most promising frameworks for understanding antisocial behaviour comes from the work of Patterson and colleagues at the Oregon Social Learning Centre (OSLC; e.g., Patterson, 1982; Patterson, et al., 1984; Patterson, et al., 1992; Reid & Patterson, 1989). According to coercion theory, training for antisocial behaviour begins in the family context with a breakdown of effective discipline practices (Patterson, et al., 1992).

Parental use of hostile punishment tends to elicit negative reactions from children (e.g., arguing, yelling). Mutually coercive patterns of interaction develop when children's reactions effectively modify their parents' behaviour and reduce hostility. Essentially, child disruptive behaviour is reinforced by changes in parental behaviour. Hostile punishment and coercive interactions between parents and children combined with poor parental monitoring contribute to the emergence of conduct problems in preadolescence (e.g., Conger, Patterson, & Ge, 1995; Dishion, Patterson, & Kavanagh, 1991) and association with deviant peers (e.g., Dishion, Patterson, & Skinner, 1989; Dishion, Patterson, Stoolmiller, & Skinner, 1991). During the teen years, poor parenting and membership in a deviant peer group continue to contribute to antisocial behaviour (Dishion, Patterson, Stoolmiller, & Skinner, 1991; Snyder, Dishion, & Patterson, 1986). In this way, parenting is indirectly associated with antisocial behaviour in the teen years, via association with deviant peers (Patterson, DeBaryshe, & Ramsey, 1989; see Figure 1). This theory has been empirically validated in numerous studies, conducted with different

samples by researchers at the OSLC (e.g., Dishion, Patterson, Stoolmiller, & Skinner, 1991; Patterson & Bank, 1989; Patterson, et al., 1984, 1992) and by independent researchers (e.g., Cashwell & Vacc, 1996; Metzler, Noell, Biglan, Ary, & Smolkowski, 1994).

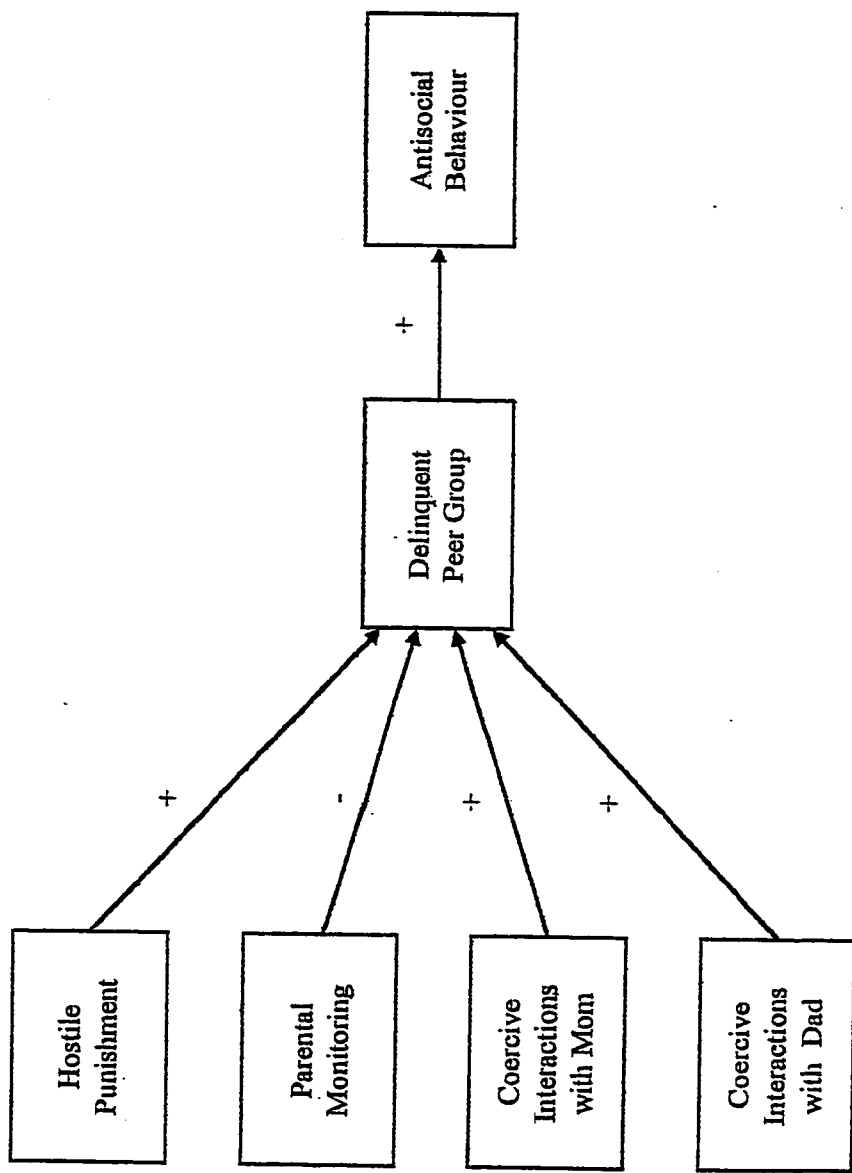


Figure 1. Hypothetical model predicting antisocial outcomes based on coercion theory.

Although coercion theory alludes to the affective quality of the parent-child relationship, this aspect of the theory is not well elaborated. Patterson, Reid, and Dishion (1992) discuss the potential importance of positive parenting for reducing antisocial behaviour, but focus on the more behavioral aspects of the relationship: parental reinforcement of prosocial behaviour, involvement, and problem-solving skills. Their findings suggest that although positive parenting contributes to prosocial behaviour, it does not play a critical role in reducing antisocial behaviour. However, such focus neglects the affective quality of the parent-child relationship, particularly with respect to the child's felt security in the relationship. Attachment theory (Bowlby, 1969, 1973, 1980) provides a complementary framework for conceptualizing the nature of the parent-child relationship. Given the role attachment quality plays in the development of emotion regulation and coping skills, use of an attachment theory framework may be particularly helpful in clarifying alternative processes which may lead to adolescent involvement in antisocial behaviour. In contrast to coercion theory, which emphasizes external factors in the development of antisocial behaviour, an attachment theory model places emphasis on internal factors, such as views of self and others and ways of regulating emotion.

#### Attachment theory

Bowlby (1969, 1973) argued that in their first year of life, infants begin to develop an attachment system which plays a critical role in their survival and influences personality development. According to attachment theory, children's early attachment relationships shape the way they begin to see themselves (in relation to others) and influence how children expect others to behave. Bowlby (1973) referred to these self and other

perceptions as Internal Working Models (IWMs). He argued that once developed, IWMs influence the appraisal of new situations and serve as a guide for future behaviour. Early attachment relationships also play a significant role in emotional development (Cassidy, 1994), and subsequent coping style (e.g., Mikulincer, Florian, & Weller, 1993). In particular, IWMs are believed to be activated in response to perceived stress. Although initial attachment relationships remain influential, as children experience new relationships, their IWMs are revised and updated (Bowlby, 1973, 1988). This process continues in adolescence and adulthood.

Mary Ainsworth (Ainsworth, Blehar, Waters, & Wall, 1978) conducted laboratory research regarding attachment theory with infants. Using a paradigm of successive separations and reunions between infants and their attachment figures in the presence of an unfamiliar adult, she identified three different patterns of attachment behaviour: secure, insecure-avoidant, and insecure-ambivalent. Although the manifestation of these styles changes over the life-course, similar behavioral and emotional patterns have been identified in adolescent (Kobak & Sceery, 1988) and adult samples (Collins & Reid, 1990; Hazan & Shaver, 1987; Main, Kaplan, & Cassidy, 1985).

Primary attachment style develops as a function of the relationship quality that exists between children and their early attachment figure (Bowlby, 1969). When attachment figures are warm and responsive, children develop a secure attachment style. These children develop IWMs of others as available and caring, and of themselves as worthy and capable of eliciting care (Bowlby, 1973). Thus their models of self and of others are positive. When their attachment system is activated in response to real or

perceived threat, secure children are able to express anxiety and discomfort in order to attract their caregivers and achieve felt security. As a result, secure children learn to regulate their emotions, and function well in interpersonal relationships (Cassidy, 1994; Sroufe & Waters, 1977).

When attachment figures are insensitive and rejecting however, children develop an insecure-avoidant attachment style (Ainsworth, et al., 1978). In this case, when the attachment system is activated, instead of expressing anxiety and discomfort, these children suppress their feelings and avoid contact, in order to not further alienate their caregivers (Bowlby, 1980; Renken, Egeland, Marvinney, et al., 1989; Shaw & Bell, 1993; Main, 1981). They are said to deactivate the attachment system, and to dismiss the importance of the attachment relationship (Bowlby, 1973). Nonetheless, the rejecting attitude of the attachment figure is believed to elicit anger and pain which is also suppressed (Renken, et al., 1989). Thus avoidant children develop IWMs of others as unavailable, uncaring, and undependable, and IWMs of themselves as unworthy and incapable of eliciting care (Bowlby, 1973).

Avoidant children do not learn how to cope effectively with negative emotions (Cassidy, 1994). They learn to deal with emotions by minimizing them and by deactivating the attachment system (i.e., by minimizing the importance of the relationship, Cassidy, 1994). These children develop a distrust of others and learn that, in order to function in a threatening world, they must be “compulsively self-reliant” (Bowlby, 1973; 1980). Their models of others are negative, whereas their models of self are defensively positive. Therefore, they are unlikely to seek help from others. Given their ineffective

coping strategies, their negative emotions are not adequately dealt with, and may surface again in other relationships (Renken, et al., 1989), or even unpredictably within the attachment relationship (Main & Weston, 1982).

In some cases, attachment figures are inconsistent: sometimes they are responsive and sometimes they are rejecting. Children with inconsistent attachment figures develop an insecure-ambivalent attachment style (Ainsworth, et al., 1978). In this case, when the attachment system is activated, these children appear to experience uncertainty about approaching an individual who is not always reliable. Conflict between the desire to approach the attachment figure to be consoled, and feelings of anger and anxiety toward an unreliable individual is experienced (Bowlby, 1973). These children are believed to attribute the unreliability of attachment figures to a fault in their own ability to elicit care. Since the attachment figure is occasionally responsive, these children may come to believe that their efforts to achieve a caregiving response are not always competent. As a result, they appear preoccupied with discovering ways in which to elicit care and are hypervigilant to sources of distress. Ambivalent children are said to develop positive IWMs of others and negative IWMs of themselves. They see themselves as ineffective yet incapable of functioning on their own.

Like avoidant children, ambivalent children do not learn to cope effectively with their emotions. However, rather than minimizing their emotions, these children maximize them and hyperactivate the attachment system in order to maintain contact with their attachment figures (Cassidy, 1994; Kobak & Cole, 1991). Furthermore, they are difficult to soothe (Ainsworth, et al., 1978) presumably out of fear of losing contact with an

unreliable caregiver.

The ineffective forms of emotion regulation associated with the insecure styles of attachment have implications for behavioral adjustment. In the following sections, research regarding the link between attachment style and adjustment in childhood, then in adolescence, will be reviewed.

#### Attachment style and behavioral adjustment in childhood

To date, most research linking attachment style and behavioral adjustment has examined mother-child relationships in preschool and elementary school samples. In these age groups, support for attachment theory is robust. Children who are securely attached with their mothers have been shown to engage in more prosocial behaviour and are described as more socially competent than insecure children (Maslin & Bates, 1982 in Greenberg & Speltz, 1988; Sroufe, 1983). Securely attached children are also rated by their teachers as more empathic and more compliant than insecurely attached children (LaFreniere & Sroufe, 1985). On the other hand, both insecure attachment styles have been linked with various forms of maladjustment.

Consistent with the theory that insecure attachment is related to poor emotion regulation, avoidant children are often found to engage in negative acting-out behaviour. Compared to secure children, they are more aggressive and more conflictual with their mothers (Main & Weston, 1982; Maslin & Bates 1982 in Greenberg & Speltz, 1988), and more aggressive, hostile, and distant with their peers (Sroufe, 1983, 1988). In elementary school-aged samples, some inconsistent results have been found. Renken and colleagues (1989) found that avoidant boys (but not girls) from families undergoing stress and



instability were rated as more aggressive by their teachers than boys with secure attachment styles. However, Fagot & Kavanagh (1990) found that avoidant girls (but not boys) from intact middle-class families were rated by teachers and observers as more difficult than their securely attached peers. Research has also shown that children with ambivalent attachment styles are more adult-oriented and emotionally dependent than securely attached children (Renken et al, 1989; Erickson, et al, 1985).

#### Attachment style and adjustment in adolescence

According to attachment theory, attachment style continues to influence personality, behaviour, and emotion regulation throughout the lifespan (Bowlby, 1973). Patterns of attachment similar to those observed in childhood have also been identified in adolescent (e.g., Kobak & Sceery, 1988) and adult samples (e.g., Collins & Reid, 1989; Hazan & Shaver, 1987; Main, et al., 1985). In the adolescent and adult literature two traditions have emerged (see Bartholomew & Shaver, 1998 for a more in depth review). Some researchers (e.g., Hazan & Shaver, 1987) use the parallel categories and the same terminology as found in child samples. However, others (e.g., George, Kaplan & Main, 1985; Bartholomew, 1990) use terminology which describes the predominant traits that characterize each style. As summarized in Table 1, the label “secure” continues to describe the secure attachment pattern, “preoccupied” is used to describe the preoccupation with relationships characteristic of ambivalent attachment, and “dismissing” is used to describe the dismissive pattern of an avoidant attachment style. Continuous measurement of attachment style is also more common in older samples.

Table 1

Parallel Attachment Styles in Childhood and Adolescence

Childhood	Adolescence
Secure	Secure
Ambivalent	Preoccupied
Avoidant	Dismissing
	Fearful

Bartholomew (1990) has also identified a fourth attachment style, characterized by negative working models of both self and other, which she refers to as fearful. According to Bartholomew, both dismissing and fearful styles are considered avoidant forms of attachment, although avoidance is believed to occur for different reasons. Bartholomew speculates that dismissing individuals avoid intimacy because they dismiss the importance of relationships, whereas fearful individuals, being hypersensitive to social approval, avoid intimacy out of fear of rejection. As summarized in Table 2, the dismissing and fearful styles share the common characteristic of negative views of others and the preoccupied and fearful styles share the common characteristic of negative views of the self.

Table 2

Working Models of Self and Other, According to Attachment Style

Attachment style	Model of self	Model of other
Secure	Positive	Positive
Preoccupied	Negative	Positive
Dismissing	Positive	Negative
Fearful	Negative	Negative

Despite the interest in attachment beyond childhood, comparatively little research has been conducted regarding the link between attachment and adjustment in adolescence. If internal working models (IWMs) do continue to influence emotion regulation and coping style throughout the lifespan, the link between attachment style and behaviour should also be evident in during the teen years. In fact, Allen and Land (1999:324) have argued that the multiple changes and challenges of adolescence “may all conspire to create a chronic state of activation of the attachment system”.

As children age, they begin to form “secondary” attachments to individuals other than their primary caregivers (Bowlby, 1969). Exposure to a variety of relationships creates opportunities to revise IWMs of the self, of others, and of relationships, as these models are “tested” in the context of new relationships. Nonetheless, given that new information is assimilated into existing models, initial IWMs are relatively resistant to change (Bowlby, 1973).

Research has demonstrated considerable continuity in attachment behaviour from 12 to 18 months (e.g., Owen, Easterbrooks, Chasse-Lansdale, & Goldberg, 1984; Main & Weston, 1981), and from infancy to childhood (e.g. Main et al., 1985), and from childhood to adolescence (Urban, Carlson, Egeland, & Sroufe, 1991). There is also support for intergenerational associations between parents’ attachment styles and their children’s attachment styles (Lieberman, Doyle, & Markiewicz, 1999). However, instability in attachment style has also been shown (Baldwin & Fehr, 1995). Furthermore, children and adolescents have been found to have different attachment styles with their mothers and their fathers, and other individuals (e.g., Lamb, 1977; Main & Weston,

1981). Attachment style is also altered by changes in contextual or situational factors, particularly in response to stressful events (Thompson, Lamb, & Estes, 1982; Vaughn, Egeland, Sroufe, & Waters, 1979). Thus even within the same relationship, there can be shifts in attachment style.

Given the possibility of change in attachment style, and of different styles of attachment with different individuals, it appears appropriate to consider the possibility of various attachment styles in the same individual, particularly in older samples (Baldwin, et al., 1996), and to use continuous rather than categorical measures of attachment. It may also be important to evaluate attachment styles in different significant relationships. In particular, attachment with each parent should be considered separately. This is especially true during the teen years, when relationships with each parent appear to undergo different types of transformations. For example, Newman (1989) found that although mothers are recognized as models of cohesiveness throughout the transition from pre-teen to teen years, fathers become increasingly appreciated for their warmth and understanding as children enter the teen years. Fathers of adolescent children are also more satisfied with their parental role than those of younger children (De Luccie & Davis, 1990). There is also evidence that parents interact differently with sons and with daughters, with same-sex pairs having closer relationships (Youniss & Smollar, 1985). Although most research has examined attachment with mother, attachment with father may be particularly relevant for antisocial outcomes, given that antisocial behaviour is more common in men than in women (e.g., Kellner, 1997; Robins, 1986).

Although little research has been conducted regarding the link between attachment

style and specific behaviours during adolescence, researchers have examined personality correlates, and representations of self and other in this age group. Results support attachment theory. Compared to insecurely attached adolescents, adolescents who are classified as secure are rated by their peers as less anxious, less hostile, and more able to successfully regulate their feelings (i.e., more ego resilient; Kobak & Sceery, 1988). In problem-solving interactions with their mothers, secure adolescents are more capable of modulating their anger, and achieving a balance of assertiveness, suggesting functional emotion regulation (Kobak, Cole, Ferenz-Gillies, et al., 1993). Unlike insecurely attached individuals, secure individuals are also able to acknowledge both positive and negative self-attributes, and have been shown to have a coherent, well-organized self-structure (Mikulincer, 1995). These balanced self-perceptions may also contribute to a constructive coping style. Adolescents who report a positive relationship with their parents, and who feel comfortable turning to them for support, have been found to have a greater sense of mastery of their worlds (Paterson, Pryor, & Field, 1995). In addition, during their first year of college, they see themselves as more socially competent, and report less psychological distress than their peers, even if they are anxious regarding separation (Kenny & Donaldson, 1991). Securely attached adults and college students also tend to seek support from others in times of stress (Mikulincer, et al., 1993; Florian, Mikulincer, & Bucholtz, 1995; Ognibene & Collins, 1998).

Consistent with attachment theory, adolescents with a dismissing style are rated by their peers as more hostile than individuals in all other attachment groups (Bartholomew & Horowitz, 1991; Kobak & Sceery, 1988). In problem-solving interactions with their

mothers, dismissing boys (but not girls) have been found to exhibit more dysfunctional anger than secure subjects (Kobak, et al., 1993). Dismissing girls, on the other hand, appear to deactivate the attachment relationship, such that their mothers dominate the interaction (Kobak, et al, 1993). As predicted by attachment theory, dismissing individuals report less family support and more loneliness than their peers (Kobak & Sceery, 1988).

In terms of self-representations, dismissing subjects have been found to describe themselves positively and to acknowledge positive self-attributes while disregarding negative characteristics (Mikulincer, 1995). Although they believe that others have a more negative view of them than they have of themselves, they are nonetheless able to maintain a positive sense of self (Mikulincer, 1995). Consistent with this, in the Kobak and Sceery (1988) study, dismissing participants reported little distress and described themselves as equally socially competent as secure subjects, suggesting a tendency to disregard the negative affects attributed to them by their peers. In addition, their self-structure lacks balance and is poorly integrated: despite recognition of different self-attributes, dismissing people do not perceive connections between these various self-aspects, whereas secure people do (Mikulincer, 1995). Mikulincer (1995: 1213) speculates that the high positive self-esteem reported by dismissing subjects may be a “defensive armor” used to protect the self against negative feelings of rejection. This tendency to only acknowledge positive self-attributes may also reflect a sense of compulsive self reliance (Kobak & Sceery, 1988), and suggests a “nondifferentiated defensiveness” coping style, with an emphasis on distancing strategies (Mikulincer,



Florian, & Weller, 1993; Mikulincer & Orbach, 1995).

Different correlates of a preoccupied attachment style have also been identified in adolescence. Preoccupied subjects are rated by their peers as more anxious than all other attachment groups (Kobak & Sceery, 1988). These individuals have a negative view of themselves (Mikulincer, 1995) and see themselves as socially incompetent (Kobak & Sceery, 1988). In addition, they see others in a positive light and believe that they do not live up to the expectations others have of them (Mikulincer, 1995). Compared to other attachment groups, preoccupied subjects report more physical symptoms (Kobak & Sceery, 1988) and have difficulty regulating their distress (Mikulincer, 1995). Their self-structure is poorly integrated, and shows little differentiation, such that the impact of negative experiences has a greater impact on their well-being (Mikulincer, 1995). Kobak and Sceery speculate that this combination of subjective distress, and positive views of the support available to them may contribute to dependent, clingy relationships which do not successfully alleviate anxiety. These characteristics negatively impact preoccupied individuals' ability to cope effectively in stressful situations. In adult samples, preoccupied subjects have been found to use more emotion-focused coping (e.g., wish to change feelings, self-criticism; Mikulincer, et al., 1993) and support-seeking (Ognibene & Collins, 1998) in response to stress.

The fearful attachment style has received less empirical attention. The limited data available suggests that adults with a fearful attachment style are socially inhibited, lack appropriate assertiveness skills, and have a tendency to be exploited by others (Bartholomew & Horowitz, 1991). Ognibene and Collins (1998) found that this

attachment style was related to using more emotion avoidance and less support seeking in response to stress. There is also evidence which suggests that fearful individuals may react violently, in response to perceived rejection (Dutton, Saunders, Starzomski, & Bartholomew, 1994), most likely because they have not learned to regulate unpleasant emotions.

In sum, these findings underscore the differential association between attachment style and coping skills. As summarized in Table 3, secure attachment appears linked to constructive coping, including planful problem-solving skills and support seeking. A dismissing style, on the other hand, is more likely associated with an emotionally avoidant style of coping, combined at times with an angry confrontational style. A preoccupied style appears characterized by the tendency to blame oneself for one's problems combined with feelings of helplessness. Finally, a fearful style appears to be related to emotion avoidance and behavioral withdrawal. Fearful attachment may also be associated with coping styles characteristic of both dismissing attachments (both share negative views of others) and preoccupied attachment (both share negative views of the self). If this is true, fearful attachment would also be related to angry confrontation and self-blame.

Ineffective coping strategies likely contribute to adjustment difficulties, including antisocial behaviour. The emotion avoidance and disregard for others typical of dismissing and fearful attachment styles may reduce moral behaviour because of failures to understand the mental states of others or to take them into consideration (see Fonagy et al., 1998). Furthermore, rather than experiencing their anger, and coping with it internally, individuals with dismissing and fearful styles may act out their anger, by

engaging in antisocial activities. In the case of preoccupied attachment, the tendency to engage in self-criticism combined with feelings of helplessness may also lead to antisocial activity. Antisocial behaviour is often a peer group phenomenon (Emler, Reicher, & Ross, 1987). Because of their coping style and desire for acceptance, teens high in preoccupied attachment be may less likely to question the behaviour of their peers, and therefore commit antisocial acts themselves. The fear of abandonment typical of both fearful and preoccupied attachment styles, and reflected in their self-criticism and feelings of helplessness, may lead to violence aimed at increasing contact with others. Consistent with this, Roberts and Noller (1998) found positive correlations between anxiety over abandonment and violent behaviour in an adult sample. Similar results are reported by Bookwala & Zdaniuk (1998) who found that preoccupied and fearful attachment were more common for individuals in mutually aggressive dating relationships.

Table 3

Summary of research findings regarding attachment styles, and hypothesized coping styles.

Examples of Research Findings	Hypothesized Coping Style
Secure attachment	
Successful anger modulation (Kobak, et al., 1993)	Constructive coping
Greater sense of mastery (Paterson et al., 1995)	
Socially competent (Kenny & Donaldson, 1991)	
Dismissing attachment	
More hostility and dysfunctional anger (Bartholomew & Horowitz, 1991; Kobak & Sceery, 1988; Kobak et al., 1993)	Emotion avoidance and angry confrontation
Tendency to dismiss negative characteristics (Kobak & Sceery, 1988; Mikulincer, 1995)	
Unbalanced self-structure (Mikulincer, 1995)	
Preoccupied attachment	
Anxious (Kobak & Sceery, 1988)	Self-criticism
Negative self-perception (Mikulincer, 1995)	
See self as socially incompetent (Kobak & Sceery, 1988)	
Fearful attachment	
Inhibited, lack appropriate assertiveness skills, tend to be exploited (Bartholomew & Horowitz, 1991)	Emotion avoidance and behavioral withdrawal
Negative view of self and others (Bartholomew, 1990)	
	Angry confrontation and self-blame

### Attachment and antisocial behaviour

Although Bowlby's early work was concerned with the family characteristics of child thieves (Bowlby, 1944), few studies have used his theoretical framework to examine the link between attachment style and antisocial behaviour in adolescence. This appears to be changing in recent years, yet the existing research is limited and has methodological flaws. Two groups of researchers have investigated this question using samples of participants with antisocial psychiatric histories, in which the issue of psychiatric comorbidity was not addressed. Rosenstein & Horowitz (1996) found that conduct disorder was strongly associated with dismissing attachment. Their results regarding substance abuse were somewhat less clear, suggesting the possibility of different influential pathways. Participants who were engaged in more antisocial behaviours (i.e., those who had comorbid substance abuse disorder and conduct disorder) were more likely to be dismissing. In contrast, those with substance abuse disorder and an affective disorder were equally likely to be preoccupied or dismissing. Attachment style was also examined in relation to personality disturbance. Consistent with attachment theory, dismissing individuals were more antisocial, narcissistic, and paranoid than preoccupied individuals. Preoccupied subjects, on the other hand, were more likely to report anxiety, dysthymia and an interest in others, combined with a fear of criticism and/or rebuff. A second group of researchers (Allen, Hauser, and Borman-Spurrell, 1996) also found that dismissing attachment in adolescence and more specifically, derogation of attachment, were associated with criminal behaviour and drug use in adulthood for patients who had been hospitalized for psychopathology during their teen years.

A recent study using a community sample of adolescents has also found links between insecure attachment styles and antisocial activity. Using categorical data based on the three category model of attachment, Cooper, Shaver and Collins (1998) found that, anxious-ambivalent adolescents were most likely to engage in risk behaviours: they were more truant relative to both avoidant and secure teens and committed more property crimes than avoidant teens. With respect to substance use, anxious-ambivalent teens reported more alcohol-related problems, and had used marijuana more frequently than teens in other groups. Finally with respect to sexual activity, anxious-ambivalent girls were more likely to report having been pregnant. Although avoidant teens were less likely to be sexually active than secure and anxious-ambivalent teens, both insecure groups engaged in more risky behaviours (e.g., sex with a stranger, casual sex). These authors also found that the relationship between anxious-ambivalent attachment and antisocial behaviour was mediated by high levels of hostility. It may also be that these teens are more susceptible to peer influence. (Note that in Bartholomew's (1990) model of four attachment styles, anxious-ambivalent adolescents would likely be divided into preoccupied and fearful styles; Brennan & Shaver, & Tobey, 1991.)

In general, most investigations which have examined attachment in relation to antisocial behaviour have been inspired by Hirschi's (1969) social-control theory. According to social-control theory, deviance is an innate characteristic, and involvement in antisocial behaviour is prevented through "attachment" or bonds to important socialization agents, such as family members or social institutions like school. Using this conceptualization of attachment (i.e., bonding), emphasis is placed on the control exerted

by socialization agents, particularly in terms of monitoring and supervision, rather than on the affective quality of the relationship and its role in emotion regulation. (For example, Patterson's coercion theory was inspired in part by social-control theory.) Occasionally, dimensions of warmth and rejection in the parent-child relationship have been considered, but to date no studies have examined the link between attachment with parents (using Bowlby's framework), coping style, and involvement in antisocial activity. Nevertheless, results from existing research suggest that this is a fruitful avenue for further research.

Delinquency. Adolescents who report close, accepting relationships with their mothers also report less involvement in delinquent activities (Aseeltine, Jr., 1995; Smith & Krohn, 1995). When relationships with both parents are considered simultaneously, "low attachment" (i.e., poor communication and trust, combined with a feeling of alienation) has been associated with symptoms of conduct disorder, even in cases where attachment to peers is high (Nada Raja, et al., 1992). Official delinquency and teacher reports of delinquent activity have also been shown to correlate negatively with observations of loving and accepting mother-child interactions (Sampson & Laub, 1994). These effects appear particularly robust: they persist even after controlling for child IQ, age, attachment to delinquent peers, ethnicity, poverty, family size, parental deviance, supervision, and discipline (Sampson & Laub, 1994). In addition to direct effects, relationship quality with parents has also been associated with delinquent behaviour indirectly through parent-adolescent involvement and parental control (supervision and discipline; e.g., Smith & Krohn, 1995). Although it is likely that the link between attachment quality and behaviour is bi-directional, at least one longitudinal study has shown that parental rejection is a

stronger predictor of delinquency than the reverse (Simons, Robertson, & Downs, 1989).

Substance use. With respect to adolescents' use of psychotropic substances, some findings suggest that attachment to parents may play a role. According to self-derogation theory (Kaplan; 1975, 1980), individuals develop self-derogating attitudes as a result of negative self-perceptions and perceptions of negative evaluations from highly valued others, combined with a poor history of coping effectively with potentially self-devaluing experiences. It is likely that attachment history determines in part these perceptions and coping abilities. According to Kaplan's theory, in order to defend the self, individuals with self-derogating attitudes lose their motivation to conform to group norms (which they see as unattainable); acquire motivation to deviate from these norms (which are associated with painful experiences); and adopt a favourable attitude toward deviant behaviours (which may provide an opportunity to achieve self-accepting attitudes). Support for this theory has been found with respect to engagement in a variety of antisocial behaviours (Kaplan, 1980) and specifically with respect to substance use (Kaplan, Martin, & Robbins, 1984). Of particular interest from an attachment perspective is the finding that, in early adolescence, feelings of rejection by family members predict future alcohol, marijuana, and other drug use, as well as self-derogation and favourable attitudes toward deviance.

Other investigations also suggest that attachment quality may be related to substance use. Affectional quality, time spent and identification with both parents, and preference of parents over peers, have been negatively associated with teenage children's subsequent drug use, both directly, and indirectly through adolescents' conventional



attitudes (Brook, Whiteman, Brook, & Gordon, 1981; Brook, Whiteman, & Finch, 1993; Brook, Whiteman, Gordon, & Brook, 1984a, 1984b, 1986) and low sensation-seeking (Barnea, Teichman, & Rahav, 1992). Supportive parent-child relationships have also been linked to better self-regulation skills (i.e., self control, behavioral competence, and adaptive coping), and less affiliation with nonnormative peers, which in turn predict less substance use (Wills, DuHamel, & Vaccaro, 1995).

Adolescents' reported reasons for use also suggest that attachment theory may be a useful perspective for understanding substance use. High school students who use drugs on a regular basis report using drugs as a way of coping with stress, and also as a way of achieving pleasure (Novacek, Raskin, & Hogan, 1991). Both reasons appear to be associated with an effort to distance the self from stressful life experiences. Using drugs in response to negative emotions has also been linked to more problematic substance use (McKay, Murphy, McGuire, Rivinus, & Maisto, 1992). Teens who are higher in insecure attachment may be more likely to use drugs or alcohol in response to negative emotions, given their poorer emotion regulation skills.

Sexuality. Existing research suggests that attachment to parents may also be important for determining sexual behaviour. Adolescents who have warm, supportive relationships with their parents (Jessor & Jessor, 1977) and report that they can communicate effectively with their parents (Fox & Inazu, 1980) are less likely to be sexually active than adolescents who do not have such positive relationships. Parents who are generally open to communication are also more likely to discuss sexual issues with their late adolescent children (Fisher, 1991). Some data suggest that the link between

parent-child attachment and sexual activity is moderated by gender. Benda and DiBlasio (1994) found that closeness to both parents was negatively related to frequency of sexual activity for females only. Furthermore, it appears that at least part of parental influence on sexual activity is indirect. Cross-sectionally, low warmth and support in the parent-child relationship have been associated with increased sexually permissive attitudes, and association with sexually active peers, which both predict sexual activity (Whitbeck, Conger, & Kao, 1993).

To date, little is understood regarding the development of safe-sex practices. Numerous studies have shown that knowledge about sexually-transmitted-diseases, likelihood of pregnancy, and even about safe-sex does not predict safe-sex practice in adolescent and young adult samples (e.g., Rosenthal, Moore, & Brumen, 1991; Lowe & Radius, 1987). Safe-sex practices are more likely to be determined by the situational features of the encounter, and the assumptions of the parties involved (Moore & Rosenthal, 1992).

Effective interpersonal skills are essential to the adoption of safe-sex practices (Lowe & Radius, 1987). Given that secure attachment style is associated with effective emotion regulation, and prosocial skills, it is likely that security of attachment will be important for safe-sex. In contrast, insecure attachment may be linked with risky sexual behaviours (or attitudes) given poorer emotion regulation skills.

Poor parent-child relationships may contribute to irresponsible sexual activity indirectly through the expectations adolescents develop regarding intimate relationships. For example, individuals who are more dismissing may place more value on sexual acts

than on the relationship, given their disregard for others and their avoidance of intimacy (Furman & Wehner, 1994), leading them to take greater risks. Consistent with this, Brennan, Clark and Shaver (1998) found that dismissing adults were more sexually promiscuous than adults with other attachment styles. Poor primary relationships may also contribute to the allure of sexual relationships, in the sense that they may be seen as potentially self-rewarding (Whitbeck et al., 1993), as a way of achieving closeness with another. Furman and Wehner (1994) speculate that individuals who are more preoccupied may be more concerned about pleasing their partner than expressing their own desires. Given their positive views of others, and their desire for intimacy, individuals high in preoccupied style may simply go along with their partner's wishes and be less likely to question their partner's sexual history.

#### Integrating the two theoretical approaches

Although Bowlby's attachment theory and Patterson's coercion theory conceptualize the development of antisocial behaviour differently, the two theoretical approaches are similar in many respects. Both theories can be viewed as social-interactive (Cairns, 1979): both place emphasis on the importance of early childhood relationships with caregivers in the etiology of antisocial outcomes and both focus on the qualitative nature of these interactions. However, attachment theory proposes that internal processes (i.e., emotion regulation and coping style) guide behaviour whereas coercion theory proposes that external factors (i.e., parental monitoring, hostile punishment, coercive interactions) are most central. Attachment theory argues that the link between parent-child interactions and child maladjustment is mediated by coping style.

In contrast, in coercion theory this link is believed to be indirect, through association with deviant peers (Patterson, et al., 1989). In fact, according to coercion theory, antisocial behaviour emerges from behavioral contingencies that are not necessarily mediated by cognitive process (Patterson, et al., 1992). In sum, an attachment theory model provides understanding of emotional processes leading to antisocial outcomes, whereas a coercion theory model provides information regarding social learning processes leading to antisocial outcomes.

Combining the two approaches is not as straightforward as considering the two processes (i.e., (1) attachment style → coping style → antisocial behaviour; (2) parenting → association with deviant peers → antisocial behaviour) simultaneously. The difficulty in doing so lies in the fact that attachment style and parental monitoring, punishment and coercive interactions are all likely to be intercorrelated. Given that attachment style begins to develop in infancy, it is likely that quality of attachment precedes daily interactions such as parental monitoring. One possible combination of the two approaches, presented in Figure 2 was tested in the current investigation. According to this model, attachment style is antecedent to day-to-day parenting. That is, the affective quality of parent-child relationships, based in part on early caregiving interactions, is believed to precede the daily interactions between parents and their adolescent children. Through parenting, insecure attachment is related to association with deviant peers and coping style, which in turn predict antisocial outcomes. It is anticipated that knowledge regarding the affective quality of parent-child relationships will add to the coercion theory model and provide greater understanding of adolescent antisocial behaviour.

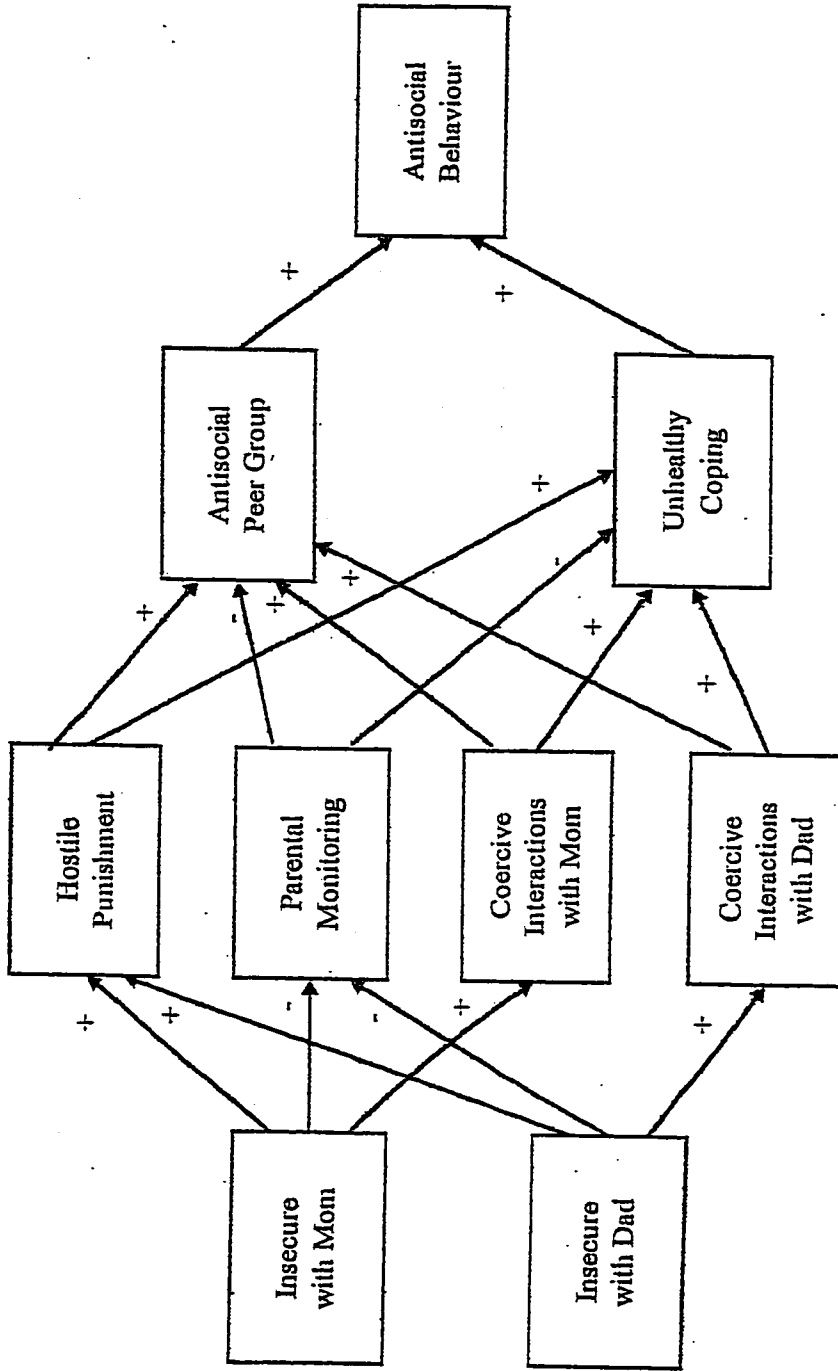


Figure 2. Hypothetical model predicting antisocial outcomes based on attachment and coercion theories.

### The current investigation

The current study examined adolescent involvement in antisocial activities from two theoretical perspectives - attachment theory and coercion theory, using a community sample. Based on Bowlby's attachment theory, it was hypothesized that secure attachment would be negatively related, and insecure attachment positively related to adolescent involvement in antisocial behaviour. In particular, it was expected that the two avoidant styles, dismissing and fearful, would be most related to antisocial behaviour, given their common feature of negative views of others. These hypotheses were evaluated using correlational analyses.

It was further hypothesized that the link between attachment styles and antisocial outcomes would be, at least in part, mediated by coping skills. Specifically, it was anticipated that (1) adolescents who rated themselves high in secure attachment would use more constructive coping skills, (2) those who rated themselves high in dismissing style would be more likely to engage in emotion avoidance and angry confrontation and (3) those who rated themselves high on preoccupied attachment would be more likely to engage in self-criticism. Fearful attachment was also expected to be positively related to emotion avoidance and angry confrontation (because of negative views of others) and self-criticism (because of negative views of self). Finally, fearful attachment was expected to be positively related to behavioral withdrawal, given that this style is characterized by feelings of social inadequacy and fears of rejection. Constructive coping skills were expected to be negatively related to antisocial outcomes, whereas the remaining coping strategies (emotion avoidance, self-criticism, behavioral avoidance, angry confrontation)

were expected to be associated with greater involvement in antisocial behaviour. Once again these hypotheses were tested using correlational analyses.

Although all forms of insecure attachment were expected to correlate with substance use, different reasons for use were expected. Consistent with their emotionally avoidant coping style, it was hypothesized that subjects higher in dismissing or fearful styles would be more likely to report using substances in order to cope with unpleasant emotions and conflicts with others. Given the importance they place on others, participants high in preoccupied style were expected to report using drugs in response to peer pressure. Given their fears of social rejection, the same pattern was expected for participants high in fearful attachment. In order to test these hypotheses, correlations between each attachment style and adolescents' reasons for using drugs were examined.

Patterson's coercion theory was also evaluated in this sample, using structural equation modeling. This analysis examined whether parental monitoring, hostile punishment, and coercive interactions were related to antisocial behaviour indirectly through association with deviant peers. Finally, the combined model presented in Figure 2 was evaluated using structural equation modeling. This model was compared to the coercion theory model in order to determine whether it provided a more complete understanding of antisocial behaviour.

In order to examine the representativeness of the sample, demographic information (e.g., ethnicity and socioeconomic status) were compared with Canadian census data. Furthermore, levels of involvement in antisocial activity found in the current sample were compared to those found in other research.

## Method

### Sample and procedure

After obtaining ethical approval of the research project through Concordia's internal review boards (at both the departmental and university levels), three public school boards in the Montreal area were contacted regarding potential participation. Two boards approved the project, and suggested three potential schools for participation. Principals from these schools were then contacted, and sent a description of the research project. Permission to work with students from two Catholic high schools was obtained. At each school, meetings to discuss the research project and its implications were held with the teachers, who then agreed to allow data collection to proceed during class time. (The main reason offered by the school board and individual school that decided against the project was that timing and scheduling of the project may interfere with the curriculum.)

Participants were recruited from grades 10 and 11 in the two high schools. One month before official data collection, a brief presentation regarding the project was made to students in their classrooms. Students were then given a letter explaining the study and asked to complete a consent form, indicating whether or not they chose to participate (see Appendix A). All students who returned their forms (whether they chose to participate or not) had their names entered in a draw for various prizes (a portable compact disc player, a \$50 gift certificate for a music store, movie passes, and passes for local amusement centres). Almost all students at both schools (96%) agreed to participate in the study. Data collection was carried out in two phases, conducted approximately two weeks apart. During Phase 1, adolescents completed measures regarding demographic information,



relationships and coping style. During Phase 2, they completed measures regarding their involvement in various antisocial activities (delinquency, drug use, reasons for drug use, sexual attitudes and behaviour). Each session lasted 50 minutes.

Once collected, data was entered twice (by two different individuals) into WordPerfect. The two data files were then compared and mistakes corrected. The final corrected file was then transferred to a mainframe computer, and analyses were conducted using the Statistical Package for Social Sciences (SPSS) and EQS.

Demographic information was available for 662 individuals who completed Phase 1. Equal numbers of boys and girls participated (mean age = 15.8 years, ranging from 14 to 19 years). A large proportion (52.9%) of participants reported European or North American ethnic backgrounds. The remaining were distributed as follows: 3.9% South American; 6.4% Asian; .8% African; 1.5% Arab; and 31.9% mixed ethnic backgrounds and 2.6% who did not report their ethnic background. This distribution closely matches data from the 1996 Canadian Census (53% European or North American, .4% South American, 6.9% Asian, .5% African, .7% Arab, and 35.8% mixed ethnic backgrounds, based on Statistics Canada, 1996), with individuals from mixed ethnic backgrounds being slightly under-represented (31.9% vs. 35.9% according to the 1996 Census), and individuals from South American, African, and Arab backgrounds being slightly over-represented. This distribution is also comparable to the ethnic background of the Montreal urban community (Statistics Canada, 1996), although participants in the current study reported more mixed ethnic backgrounds.

Mean socioeconomic status (SES) reported by students was 44.07 for mothers

(characteristic of supervisory clerical positions and sales occupations), and 49.56 for fathers (characteristic of sales management positions and aircraft mechanical occupations) based on the Blishen, Carroll, and Moore (1987) index of socioeconomic status. These levels are comparable to the average SES in the general population (based on the 1981 Census; Blishen et al., 1987).

The majority of participants came from two-parent families ( $n = 560$ , 84.6%, with 48 from step-families). Sixty-five lived with mom only, and 23 lived with dad only. Two boys lived alone, and the remaining 12 participants lived with adults other than parents (e.g., foster parents, aunts/uncles, grandparents, and older siblings). Approximately 86% of participants had brothers or sisters living with them.

Analyses for the current study are based on data from participants who completed questionnaires about relationships with mothers and fathers and who were present for Phase 2 ( $n = 636$ , 96%). However, due to missing data for some variables, the sample size does vary according to the analysis being conducted.

### Measures

During the first testing session, adolescents provided general demographic information, listed their five best same-sex friends at school, and completed the Relationship Questionnaire, the Ways of Coping Scale, the Family Issues Questionnaire, and the Social Desirability Scale. During the second session, they completed the Self-Report Delinquency Scale, the Drug Use Severity Scale, the Inventory of Drug Taking Situations, and the Adolescent Sexuality Scale. (See Appendix B for copies of measures).

The Relationship Questionnaire (RO). This self-report measure, developed by

Bartholomew and Horowitz (1991), provides continuous ratings of four attachment styles: secure, dismissing, preoccupied, and fearful. Participants rated the extent to which paragraphs describing each attachment style applied to their relationship with each of their parents, on a scale from 1 (Not at all like my relationship) to 7 (Very much like my relationship).

The RQ correlates with attachment styles determined by interview (Bartholomew & Horowitz, 1991), and provides a rapid assessment of attachment quality. Extensive validity data indicates that attachment styles assessed using the RQ correlate as expected with measures of self-concept, interpersonal functioning, and representations of family relationships (Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994; Horowitz, Rosenberg, & Bartholomew, 1993).

The Ways of Coping Scale. The Ways of Coping Scale (WCS, Folkman & Lazarus, 1988) contains 50 items which tap various coping strategies. Respondents indicate the extent to which they use each strategy in response to stress, using a four-point scale ranging from “not used” to “used a great deal”. Validity data from various sources (see Folkman & Lazarus, 1988) indicate that the measure is sensitive to changes in coping, and to situational appraisal of control. In one study, students’ appraisals of stress, their emotions and their coping strategies were examined at three time points: two days before an examination, two days before they received their grades, and five days after they received their grades (Folkman & Lazarus, 1985). Results indicated that coping varied according to students’ emotions and appraisals of stress. Furthermore, college students reported using a wide variety of ways of coping with stress, underscoring the importance

of multidimensional measurement of coping style.

The WCS was originally developed to assess coping strategies in response to a particular situation. However, the version used in the current study assessed the way subjects *typically* cope with stress. Subjects were primed with brief descriptions of stressful situations in relationships, and were then asked to describe a similar stressful experience. They subsequently indicated the extent to which they typically used the various coping strategies in response to similar stressors. Therefore, unlike Folkman and Lazarus (1988), the current study considered general styles of coping with stress rather than the use of particular strategies in a specific stressful situation.

The Ways of Coping scale was designed to tap eight coping strategies: planful problem solving, positive reappraisal, social support seeking, escape-avoidance, emotional distancing, confrontive coping, accepting responsibility (self-blame), and self-control. In the current study, 8 items tapping rumination (based on work by Nolen-Hoeksema & Morrow, 1991) were also incorporated to tap a wider range of coping styles. Internal consistency of the subscales for the current sample was generally in the  $\alpha = .50$  to  $.60$  range, with a low of  $.47$  for self-control to a high of  $.74$  for seeking social support. Given these low reliability indices, and in an effort to reduce the number of scales, a factor analysis was conducted.

Factor analysis of responses, followed by varimax rotation, yielded five interpretable factors that explained 34.3% of the variance. Factor 1 contained 18 items which reflect *constructive coping* skills (e.g., problem solving, positive reappraisal, seeking social support; variance accounted for: 14.8%,  $\alpha = .84$ ). Factor 2 was

composed of 15 items reflecting *self-criticism* (e.g., "I realize I bring the problems on myself", variance accounted for: 7.4%,  $\alpha = .80$ ). Factor 3 contained 8 items tapping *emotion avoidance* (e.g., "I go on as if nothing happened", variance accounted for: 5.1%,  $\alpha = .67$ ). Factor 4 consisted of 6 items tapping *behavioral withdrawal and rumination* (e.g., "I go someplace alone and think about my feelings", variance accounted for = 3.8%,  $\alpha = .72$ ). Factor 5 was comprised of 7 items tapping *angry confrontational coping* (e.g., "I express anger to the person who caused the problem", variance accounted for = 3.2%,  $\alpha = .62$ ). Three items were deleted because of factor loading below .30, one item "I make myself feel better by eating, drinking, smoking, etc" was eliminated because it would be confounded with the antisocial behaviour variables. Using a sample of college students, Mikulincer and colleagues (1993) found a similar factor structure. Their problem-focused coping and social support-seeking factors appear to combine in this study to form the constructive coping factor. Their two other factors, emotion-focused coping and distancing, appear parallel to the self-criticism and emotion-avoidance factors in this study. Although Mikulincer and colleagues did not find an angry confrontational factor, this factor is essentially the same as Folkman and Lazarus' (1988) original confrontive coping scale.

The Family Issues Questionnaire. Based on the work of Patterson and colleagues (e.g., Capaldi & Patterson, 1989), the Family Issues Questionnaire assesses parental monitoring (10 items from Capaldi & Patterson, 1989 and Smith & Krohn, 1993; e.g., "How often do you tell your parents when you will be home?"); irritable, hostile punishment style (4 items from Haapasalo & Tremblay, 1994; "Do your parents punish

you by slapping or hitting you?”); and coercive interactions between the adolescent and each parent (5 items for each parent from Metzler, et al., 1994; “My mom/dad and I have arguments about little things”). Higher scores on each scale indicate higher levels of each parenting variable. In the current sample, all scales showed acceptable internal consistency (alpha = .76 for monitoring, alpha = .73 for punishment, alpha = .89 and .90 for coercive interactions with mother and father respectively).

Validity data from Capaldi & Patterson (1989) indicate that the child report of monitoring correlates ( $r = .42$ ) with trained interviewers’ impressions (based on observations of family interaction) and, to a lesser degree, with parental reports of monitoring ( $r = .10$  with mother,  $r = .28$  with father). Although Haapasalo and Tremblay (1994) did not provide correlations between child and other informant reports of punishment, their punishment scale did effectively distinguish boys who were physically aggressive over time from those who were not. Finally, Metzler and colleagues (1994) found that the coercive interaction scale was negatively related to family involvement (e.g., support, feeling of togetherness;  $r = -.53$ ), and was linked to association with deviant peers ( $r = .29$ ).

Social Desirability Scale. A seven item short-form of the Marlowe-Crowne Social Desirability Scale (Strahan & Gerbasi, 1972) was used in the current study. Respondents indicate whether they agree or disagree with socially desirable items such as “I’m always willing to admit it when I make a mistake”. This measure correlates well ( $r = .90$ ; Fraboni & Cooper, 1989; Strahan & Gerbasi, 1972) with the original scale and shows adequate psychometric properties (K-R 20 Reliability coefficient = .62 for college males, and .75 for

college females; Strahan & Gerbasi, 1972).

The Self-Report Delinquency Scale. Given that research has established that self-report questionnaires are as valid as interview reports regarding involvement in delinquent activities (Hindelang, Hirschi, & Weiss, 1981), a self-report measure was chosen for the current study. The original Self-Report Delinquency Scale (SDS, Elliott, et al., 1985) contains 38 items which assess both prevalence and frequency of involvement in general delinquency, as well as 15 questions about drug and alcohol use. Delinquency items include offenses ranging in severity from theft under \$5, purchasing alcohol as a minor, and vandalism to drug trafficking, breaking and entering, and assault. In addition, four items were included for the purpose of the current investigation. A "taxing" item (e.g., group intimidation in order to obtain goods/money from others) was included given the local significance of this problem, and the lack of an equivalent item on the original scale. Three additional items were included to tap the severity of antisocial problems: stopped by police for questioning, being arrested, and being expelled from school. Based on pilot study data with the same age group, 3 items regarding sexual assault and 9 items regarding hard drug use were eliminated because no participants reported involvement in these activities. The final version therefore contained 39 items regarding delinquent activity and 6 items regarding drug use (alcohol, marijuana, amphetamines, barbiturates, hallucinogens, and tobacco).

In contrast to other self-report delinquency scales, this measure assesses a broad array of offenses and uses an open-ended response format for establishing frequency of involvement. The authors made an effort to use clear behavioral descriptions of

delinquent acts, and responses to individual items have been validated by having respondents describe the incidents they are thinking about in order to assess the appropriateness of their initial response. Furthermore, results from the National Youth Survey indicate that the SRD is internally consistent, and correlates with official delinquency rates and with teacher and parent reports of delinquent behaviour (Elliott & Ageton, 1980; Elliott & Huizinga, 1983; Elliott, et al., 1985).

For the purposes of this study, a General Delinquency index was created by summing the number of delinquent acts committed (ranging from 0 to 39;  $\alpha = .89$ ). Similarly, a substance use index was based on the sum of substances tried (ranging from 0 to 6 ;  $\alpha = .69$ ).

The Inventory of Drug Taking Situations. Developed by Annis and Martin (1985), the Inventory of Drug Taking Situations (IDTS) is a 50-item measure which assesses adolescents' reasons for using their drug of choice. Items are divided into eight scales of drug-use situations, three of which were relevant to the current study: Social Pressure to Use (5 items,  $\alpha = .77$ ; e.g., "I used \_\_\_ when others in the same room were using these drugs/alcohol and I felt that they expected me to join in"), Unpleasant Emotions (10 items,  $\alpha = .92$ ; "I used \_\_\_ when I started to feel guilty about something"), and Conflict with Others (10 items,  $\alpha = .90$ ; "I used \_\_\_ when other people rejected me or didn't seem to like me"). For each item, respondents indicate the frequency with which they would use their drug of choice in the situation described, using a four point scale ranging from "never" to "almost always".

The subscales show strong internal consistencies (McKay, et al., 1992). In



addition, they correlate positively (mean correlation  $r = .53$ ) with frequency of use (McKay, et al., 1992). Clients who report drinking alcohol alone more frequently obtained higher scores on the Unpleasant Emotions scale (Annis, Turner, & Sklar, 1996; Turner, Annis, & Sklar, 1997). In contrast, those who drank with others obtained higher scores on the Social Pressure scale (Annis, et al., 1996; Turner, et al., 1997). Higher scores on the Unpleasant Emotions and Conflict with Others scales are also linked to more problematic substance use (Annis, et al., 1996).

The Adolescent Sexuality Scale. Developed specifically for this study, the Sexuality Scale begins by asking participants to indicate whether or not they have ever had sexual intercourse. Participants who are sexually active then complete 12 items assessing sexual risk taking behaviours (e.g., "Have you ever had sexual intercourse with someone you just met, without really getting to know them?"). Based on the work of Moore, Rosenthal and Brumen (1990; Moore & Rosenthal, 1992), items were coded for level of risk, with higher risk coded 3, moderate risk coded 2, and slight risk coded 1. For example, having had one sexual partner was coded as 1, having had two sexual partners was coded as 2, and having three or more sexual partners was coded as 3. A behavioral index of sexual risk was created, based on the weighted sum of the 12 items.

All participants were asked to complete 12 sexual attitude items, regardless of whether or not they were sexually active. Items on the attitudes subscale tapped avoidant attitudes regarding sexual risk (e.g., "The chances of me getting a sexually transmitted disease are pretty slim"), preoccupation with partner's wishes with regard to safe-sex practices ("I usually leave it up to my partner to decide whether we will use protection

when we have sex”), and responsible attitudes toward sexuality (e.g., “I think ahead, and carry a condom when I think I am going to have sex”). Respondents rated how true various statements were for them on a 3 point scale ranging from Never True (1) to Always True (3). An index of risky sexual attitudes was based on mean scores across these 12 items, with responsible attitudes reverse scored. This scale showed acceptable internal consistency ( $\alpha = .75$ ), and was positively correlated with the risky sexual behaviours index for those who were sexually active ( $r = .28$ ).

## Results

### Description of participants

Antisocial activity: Table 4 summarizes delinquency (upper part) and substance use involvement (lower part), according to gender. Only delinquent activity reported by at least one third of participants is shown. Fewer participants had committed more serious offenses (e.g., theft over \$50: 15.3%, gang fighting: 14%, selling marijuana: 14.4%). Total delinquency scores were significantly positively skewed, and subjected to a square root transformation for analyses. For ease of comprehension, original means are reported (although significance tests are based on transformed data).

Significant gender differences in antisocial activity were found. Boys were more delinquent than girls ( $M = 9.6$ ,  $SD = 6.6$  for boys;  $M = 8.1$ ,  $SD = 6.4$  for girls), whereas girls had tried more drugs than boys ( $M = 1.8$ ,  $SD = 1.3$  for boys;  $M = 2.3$ ,  $SD = 1.4$  for girls). Despite the overall gender difference in antisocial activity, more girls had committed certain behaviours than boys (e.g., failed to return extra change, been drunk in public, stolen from family; see Table 4). Although in general boys were more aggressive

than girls, girls were twice as likely to be aggressive at home than boys (19.2% vs 9%,  $\chi^2(1) = 13.09, p < .001$ ). Although boys and girls were equally likely to have tried alcohol, girls were more likely to have tried tobacco, marijuana, hallucinogens and amphetamines. Nonetheless, for those who had used a particular substance, there were no gender differences in frequency of use (not shown).

With respect to sexual activity, girls and boys were equally likely to be sexually active (29.7% for boys, 35.7% for girls,  $\chi^2(1) = 2.51, ns$ ). Furthermore, no gender differences were found with respect to risky sexual behaviours. However, girls held more responsible attitudes regarding safe sexual practices ( $M = 1.39, SD = .30$  for girls, and  $M = 1.55, SD = .33$  for boys with higher scores indicating more risk,  $t(624) = -6.46, p < .001$ ).

Table 4

Per Cent Delinquency and Substance Use Involvement, According to Sex.

	Girls	Boys	Total
Delinquency Involvement			
Disorderly conduct	56.0	61.1	58.6
Bought liquor as a minor	59.1	57.7	58.4
Failed to return extra change	59.1 <sup>a</sup>	50.3 <sup>b</sup>	54.7
Hit friends or strangers	44.4 <sup>a</sup>	64.5 <sup>b</sup>	54.5
Drunk in public	59.1 <sup>a</sup>	50.3 <sup>b</sup>	53.2
Theft under \$5	49.5	56.0	52.8
Stopped for questioning	34.1 <sup>a</sup>	46.6 <sup>b</sup>	40.3
Avoided paying for things	41.2	36.9	39.0
Stole from family	42.7 <sup>a</sup>	33.1 <sup>b</sup>	37.9
Possession of stolen goods	29.7 <sup>a</sup>	40.7 <sup>b</sup>	35.2
Destroyed public property	21.7 <sup>a</sup>	44.0 <sup>b</sup>	32.9
Destroyed property at school	27.0 <sup>a</sup>	37.1 <sup>b</sup>	32.1
Theft between \$5 and \$50	28.2	32.0	30.1
Substance use			
Alcohol	89.5	86.5	88.0
Tobacco	63.6 <sup>a</sup>	45.8 <sup>b</sup>	54.8
Marijuana	49.5 <sup>a</sup>	34.5 <sup>b</sup>	42.0
Hallucinogens	17.0 <sup>a</sup>	9.5 <sup>b</sup>	13.3
Amphetamines	9.6 <sup>a</sup>	4.6 <sup>b</sup>	7.1
Barbiturates	5.0	2.5	3.7

Note. Means with different subscripts in a given row differ significantly at the  $p < .05$  level.

Antisocial activity was also examined as a function of parental status in order to compare adolescents in one-parent families versus those in two-parent families. Results from a one-way MANOVA indicate that teens in one-parent families were involved in more antisocial behaviour than those in two-parent families,  $F(2,633) = 4.24, p < .05$ : they were significantly more delinquent,  $F(1,633) = 6.26, p < .05$ , and had tried more drugs,  $F(1,633) = 7.25, p < .01$ . In addition, they were more likely to report having been arrested in the past year,  $\chi^2(1, N = 633) = 6.78, p < .01$  (see Table 5).

Despite the mean difference in experimentation with drugs, teens in both parental status groups did not differ on various indices of severity (e.g., number of drinks at a given time, times drunk or high in the past year, times drunk or high at school, see Table 5). Nonetheless, findings suggest that, although adolescents may only use alcohol on average 6 times a year, when they do drink, they tend to drink to get drunk (e.g., average drinks at a time = 6.15,  $SD = 7.35$ ). It should also be noted that the majority of teens in this sample who used alcohol did so illegally (under age).

Teens from one-parent families were not more likely to be sexually active,  $\chi^2(1, N = 618) = 2.22, ns$ , nor did they differ in risky sexual attitudes,  $t(611) = -.43, ns$ . Finally, of those who were sexually active ( $n = 197, 31\%$ ), no differences were found on various measures of sexual risk taking behaviour (e.g., engaging in casual sex, number of sexual partners, not using birth control) or in age at loss of virginity (see Table 5).

Table 5

Descriptive Information Regarding Teen Involvement in Antisocial Activity, According to Single vs. Two Parent Family Status.

Antisocial Behaviour	Single Parent	Two Parents
Delinquency	10.34 (6.23) <sup>1 a</sup>	8.47 (6.45) <sup>b</sup>
Arrested	21% <sup>a</sup>	11% <sup>b</sup>
Substance Use	2.45 (1.45) <sup>a</sup>	2.02 (1.35) <sup>b</sup>
# of drinks at a time	6.15 (7.35)	5.36 (6.85)
Times drunk (past year)	6.62 (4.39)	5.70 (4.67)
Times drunk at school	.98 (2.52)	.84 (2.42)
Times high (past year)	4.87 (4.97)	3.40 (4.61)
Times high at school	2.31 (3.95)	1.51 (3.36)
Sexually active	39%	31%
# of sexual partners	2.71 (2.04)	2.95 (7.79)
Casual sex	34.4%	32.7%
Not using birth control	45.2%	44.3%

Note. <sup>1</sup> Means, with standard deviations in parentheses. Values in a given row with different subscripts differ significantly at the  $p < .05$  level.

Attachment style and parenting. As indicated in Table 6, on average, teens reported high attachment security in their relationships with mother and father. Mean levels of dismissing attachment style were in the moderate range, and preoccupied and fearful attachment styles received the lowest ratings across target figures. These results are consistent with previous research with categorical variables in which secure attachment is most common, followed by avoidant, and anxious styles (e.g., Mickelson, Kessler, & Shaver, 1997). Intercorrelations between attachment with mother and with father ranged from a low of  $r = .37$  for secure ratings to a high of  $r = .47$  for dismissing ratings. Significant skew was found for all attachment variables except for dismissing. Log transformations for preoccupied and fearful attachment, and square root transformations for secure attachment (reflected because of negative skew) were successful in reducing non-normality. Transformed variables were used in subsequent analyses.

In order to check for differences in attachment style according to parental status or gender, two 2 (Sex) by 2 (Parental Status) MANOVAs were conducted (one for each parent). The only significant multivariate effect was of Parental Status for attachment to father,  $F(4,620) = 2.74$ ,  $p < .05$ . Examination of univariate effects revealed that adolescents living in one-parent families were more fearful with their fathers than those in two-parent families ( $M = 3.28$ ,  $SD = 2.26$  and  $M = 2.61$ ,  $SD = 1.83$  respectively,  $F(1,620) = 5.61$ ,  $p < .05$ ).

Another 2 (Sex) by 2 (Parental Status) MANOVA was conducted for parenting variables. Prior to this analysis, three variables were transformed using square-root

transformations to reduce skew: hostile punishment, and coercive interactions with both parents. Significant main effects of Sex,  $F(4, 598) = 7.81, p < .001$ , and Parent,  $F(4, 598) = 5.25, p < .001$  were found. Univariate tests indicated that girls were more likely to be monitored than boys ( $M = 2.01, SD = .44$  and  $M = 1.69, SD = .51$  respectively,  $F(1, 598) = 26.53, p < .001$ ), and that teens in one-parent families were less likely to be monitored than those in two-parent families ( $M = 1.72, SD = .49$  and  $M = 1.98, SD = .47$  respectively,  $F(1, 598) = 17.47, p < .001$ ).



Table 6

Mean Ratings of Attachment Styles (Standard Deviations) with Mother and Father

	Target figure	
	Mother	Father
Secure	5.20 (1.85)	4.33 (2.04)
Dismissing	3.33 (1.89)	3.81 (1.95)
Fearful	2.23 (1.63)	2.71 (1.91)
Preoccupied	2.29 (1.63)	2.37 (1.55)

### Attachment and adjustment

In order to evaluate the link between attachment style, coping, and antisocial activity, partial correlations (controlling for sex and social desirability) were examined. Participants' reports of their parents' socioeconomic status were also considered as potential control variables, however they were not significantly related to any of the relationship, coping, or antisocial variables. Analyses were limited to two-parent families primarily because attachment to both mother and father were considered of interest and because of the differences in attachment style and antisocial outcomes (according to parental status) noted above. In addition, there were too few single parent families to examine separately ( $n = 65$  mom only,  $n = 23$  dad only).

Attachment and antisocial activity. The hypothesis that secure attachment would be negatively related to involvement in antisocial activity was supported. Teens who were securely attached with their father were less likely to be delinquent and less likely to experiment with drugs. Those who were more secure with their mothers were also less likely to experiment with drugs, and held less risky attitudes about sex (see Table 7).

That insecure attachment styles would be related to involvement in antisocial activity was partially supported. Both forms of avoidant attachment were associated with antisocial activity, however no evidence was found for a link between preoccupied attachment and these behaviours (see Table 7). As anticipated, dismissing attachment with both mother and father was positively related to delinquent behaviour, substance use, and risky sexual attitudes. Fearful attachment with mother was also associated with more delinquency and more substance use. A similar trend was found for fearful attachment

with father, and between fearful attachment and risky sexual attitudes, although effects did not reach significance. Contrary to prediction, no significant associations between attachment and risky sexual *behaviours* were found.

Table 7

Partial Correlations Between Attachment Style and Antisocial Activity, Controlling for Sex and Social Desirability.

Attachment Style	Delinquency (n = 514)	Substance use (n = 514)	Risky Sexual Attitudes (n = 495)	Risky Sexual Behaviour (n = 166)
SEC-M	-.08	-.13*	-.13*	-.13
SEC-F	-.17**	-.19**	-.11	-.09
DIS-M	.17**	.14*	.13*	.15
DIS-F	.18**	.13*	.12*	.14
PRE-M	.07	-.02	.01	.00
PRE-F	.05	.01	-.11	-.04
FEAR-M	.13*	.13*	.10	.12
FEAR-F	.10	.10	.09	.06

Note. SEC = secure, DIS = dismissing, PRE = preoccupied, FEAR = fearful, M = with mother, F = with father. \*  $p < .05$ , \*\*  $p < .01$  with Bonferroni correction. Sample size varies due to missing data. Correlations with risky sexual behaviour only apply to teens who are sexually active.

A second question concerning the link between attachment style and antisocial behaviour was whether different insecure styles would be associated with different reasons for using drugs. Results were strongest when attachment to father was considered (see Table 8). As anticipated, adolescents who were higher in dismissing and fearful attachment with their fathers (the two avoidant styles) were likely to use drugs in response to negative emotions and conflicts with others. This was in contrast to teens who reported more secure attachment with their fathers. As predicted, teens who were higher in fearful attachment with their fathers were also likely to use drugs in response to peer pressure although this was not the case for teens with higher preoccupied ratings.

Table 8

Partial Correlations between Attachment Style and Reasons for Drug Use, Controlling for Sex and Social Desirability.

Attachment Style	Reasons for Drug Use		
	Negative Emotions	Conflict with Others	Social Pressure
SEC-M	-.12	-.11	-.05
SEC-F	-.21**	-.21**	-.10
DIS-M	.10	.10	.09
DIS-F	.17**	.18**	.07
PRE-M	.07	.11	.01
PRE-F	.00	.03	.06
FEAR-M	.12	.15*	.03
FEAR-F	.16*	.21**	.13 <sup>a</sup>

Note. n = 370. SEC = secure, DIS = dismissing, PRE = preoccupied, FEAR = fearful, M

= with mother, F = with father. <sup>a</sup> p < .10 \* p < .05, \*\* p < .01 with Bonferroni correction.

Attachment and coping style. As anticipated, secure attachment was positively associated with constructive coping, and negatively related to less healthy ways of coping (see Table 9). Adolescents who were more secure with their mother used more constructive coping and less emotion avoidance in response to stress. Those who were more secure with their father used less self-criticism, and were less likely to withdraw emotionally or behaviorally.

In general, both forms of avoidant attachment were also associated in expected ways with various coping strategies. Dismissing attachment with mother and with father was related to greater use of emotion avoidance in response to stress. However, contrary to prediction, this style was not significantly associated with angry confrontational coping. As anticipated, fearful attachment was related to greater use of self-criticism, and more behavioral avoidance.

Once again, predictions regarding preoccupied attachment style were not supported. Although preoccupied attachment within both relationships was positively correlated with self-criticism, the strength of association was not significant. However, being preoccupied with mother was linked to greater use of emotion avoidance in response to stress.

Table 9

Partial Correlations Between Attachment and Coping Styles, Controlling for Sex and Social Desirability.

	Constructive Coping	Self- criticism	Emotion Avoidance	Withdrawal/ Rumination	Angry Confrontation
SEC-M	.17**	.02	-.16**	-.02	.00
SEC-F	.05	-.15**	-.19**	-.17**	-.04
DIS-M	-.10	-.04	.13*	-.03	.06
DIS-F	-.07	.08	.15**	.10	.07
PRE-M	.01	.11	.16**	.04	.04
PRE-F	.02	.10	.09	.08	.01
FEAR-M	-.01	.15**	.10	.11	.11
FEAR-F	-.02	.15**	.07	.18**	.04

Note.  $n = 514$ . SEC = secure, DIS = dismissing, PRE = preoccupied, FEAR = fearful, M = mother, F = father. \*  $p < .05$ , \*\*  $p < .01$  using Bonferroni correction.



Coping and antisocial activity. Links between coping style and antisocial activity were not as strong as expected (see Table 10). Only angry confrontational coping was related to both delinquent behaviour and substance use. Although self-criticism and behavioral avoidance were positively related to experimentation with more drugs, effects failed to reach significance. Finally, none of the coping styles were associated with either risky sexual attitudes or behaviours. Nonetheless, a non-significant trend suggests that adolescents who use more constructive coping skills may be less likely to engage in risky sexual behaviour.

Given that none of the attachment styles were significantly related to the one coping style that was associated with antisocial behaviour, angry confrontation could not be considered a potential mediator of the attachment - antisocial behaviour link. As a result, testing of a mediational model (through coping) was not relevant.

Table 10

Partial Correlations Between Coping Style and Antisocial Activity, Controlling for Sex and Social Desirability.

Coping Style	Delinquency	Substance use	Risky Sexual Attitudes	Risky Sexual Behaviour
	(n = 514)	(n = 514)	(n = 495)	(n = 166)
Constructive	-.04	.01	-.03	-.18 <sup>a</sup>
Self-criticism	.05	.11	.09	.01
Avoidance	.00	-.04	.03	.04
Withdrawal	.06	.11	.05	.01
Confrontation	.20**	.20**	.05	.08

Note. Sample size varies due to missing data. <sup>a</sup>  $p < .10$ , \*\*  $p < .01$ , using Bonferroni correction.

### Coercion theory

In order to evaluate the link between ineffective parenting and antisocial outcomes, partial correlations (controlling for sex and social desirability) were initially examined, followed by path analyses which tested the possibility of indirect effects from parenting to antisocial outcomes through association with deviant peers. Once again, child report of parental SES was not significantly related to parenting or outcome variables. Partial correlations and path analysis provide different types of information. Partial correlations indicate the degree of association between each parenting variable and each particular adjustment variable, in this case with the effects of sex and social desirability held constant. Path coefficients, on the other hand, indicate the unique contribution of a particular exogenous variable, controlling for the effects of all other exogenous variables on a given dependent (or endogenous) variable. Once again, for reasons outlined above, analyses were limited to two-parent families.

Indices of peer involvement in antisocial activity were created by summing the antisocial behaviour scores of each participant's five best friends. Sexuality data were examined separately due to large differences in sample size (since only 31% of participants were sexually active). Therefore, one index of antisocial peer activity was the sum of delinquency and substance use scores, and another index was the sum of risky sexual behaviour scores, for each participant's peer group. Both indices were positively skewed, and transformed with square-root transformation prior to analyses.

As predicted by coercion theory, hostile punishment and coercive interactions were positively related to all forms of antisocial activity (see Table 11). Also as expected,

higher parental monitoring was associated with less involvement in antisocial behaviour. Coercion theory also postulates a link between ineffective parenting and association with deviant peers. However, in this sample, only parental monitoring was related to association with delinquent peers or friends who engaged in sexually risky behaviours: teens who reported more parental monitoring had friends who were less involved in antisocial activity. Partial correlations between antisocial behaviour of the peer group and parental use of hostile punishment or coercive interactions were not significant.

Table 11

Partial Correlations Between Parenting and Antisocial Activity, Controlling for Sex and Social Desirability.

Parenting variable	Delinquency	Substance use	Sexual Attitudes	Risky Sexual Behaviour	Delinquent Peer Group	Sexually Risky Peer Group
	(n = 505)	(n = 505)	(n = 495)	(n = 165)	(n = 505)	(n=323)
Hostile Punishment	.29**	.26**	.15**	.26**	.10	.07
Mom Coercive	.18**	.20**	.16**	.16	.05	.04
Dad Coercive	.19**	.17**	.13*	.12	.01	.04
Monitoring	-.32**	-.24**	-.21**	-.29**	-.13*	-.16*

Note. Sample size varies due to missing data. \* p < .05, \*\* p < .01 with Bonferroni correction.

Structural equation modeling, using the EQS program (Bentler, 1995), was employed to test the coercion theory model presented in Figure 1. The model was evaluated twice - once with respect to delinquency and substance use (both were dependent variables, with the paths between the two constrained to be equal), and once with respect to risky sexual behaviour (for those who were sexually active; see Appendix C for correlation matrices and standard deviations). Based on the work of Patterson and colleagues, in the initial model, paths were specified from parenting variables to involvement with antisocial peers. Association with antisocial peers was in turn expected to predict delinquency and substance use or risky sexual behaviour. However, this model showed poor fit to the data,  $\chi^2(9, n = 505) = 108.45, p < .001, NFI = .87, NNFI = .62, CFI = .88$ <sup>1</sup> for the delinquency/substance use model, and  $\chi^2(4, n = 124) = 17.03, p < .01, NFI = .83, NNFI = .43, CFI = .85$  for the risky sexual behaviour model.

The revised model for delinquency and substance use is presented in Figure 3.

This model shows only one significant path between parenting variables and association with antisocial peers: high parental monitoring is associated with a less antisocial peer

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Theoretically, a significant  $\chi^2$  statistic indicates that the model deviates from the null model (i.e., with all possible paths specified). However, this statistic is notoriously sensitive to sample size and, with large samples, is often significant simply because of sample size. As a result, other indices are also examined to evaluate model fit. NFI and NNFI refer to the Bentler-Bonett Normed Fit Index (Bentler & Bonett, 1980) and Non-Normed Fit Index (Bentler, 1990) respectively. These indices represent the proportion of improvement of the tested model relative to the null model. The NNFI controls for model complexity. CFI refers to Bentler's (1990) Comparative Fit Index which is interpreted the same way as the other fit indices, but is less affected by sample size. These indices range theoretically from 0 to 1. Values above .90 indicate acceptable model fit. Finally, if the  $\chi^2/df$  ratio is equal to or less than three, this is considered favorable (Kline, 1998).

group. This model shows direct paths from hostile punishment to delinquency and substance use, between monitoring and delinquency, and between coercive interactions with mother and substance use. Fit indices show acceptable fit for the revised model:  $\chi^2(8, n = 505) = 13.49, p = .10, \chi^2/df \text{ ratio} = 1.68, \text{NFI} = .98, \text{NNFI} = .98, \text{CFI} = .99$ . This model accounted for 45.7% of the variance in delinquency and 29.4% of the variance in substance use. Next, using a multi-sample path analysis, the delinquency/substance use model was evaluated for girls ( $n = 253$ ) and boys ( $n = 252$ ) to determine whether model fit differed according to sex. This analysis constrains all paths to be equal across samples. The chi square statistic for this multi-sample analysis was non-significant,  $\chi^2(12) = 15.02, p = .24$ , indicating that model fit was comparable across sex.

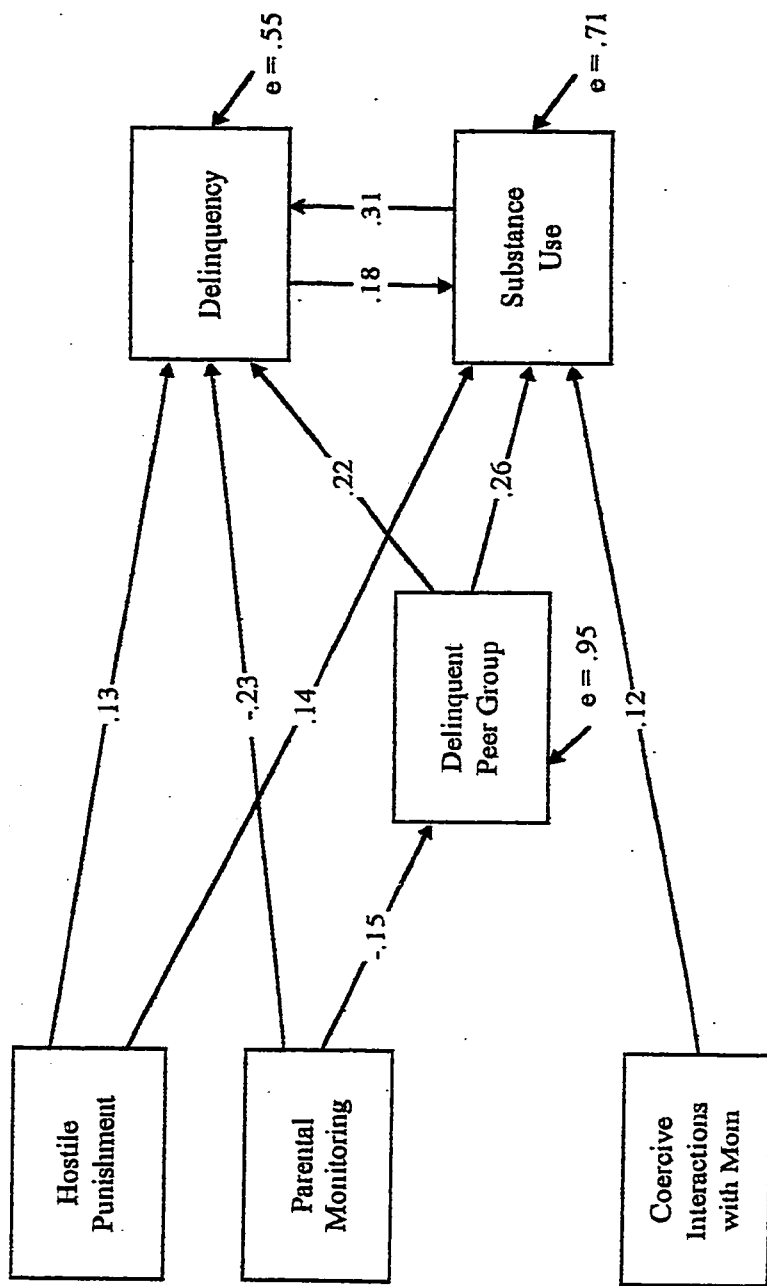
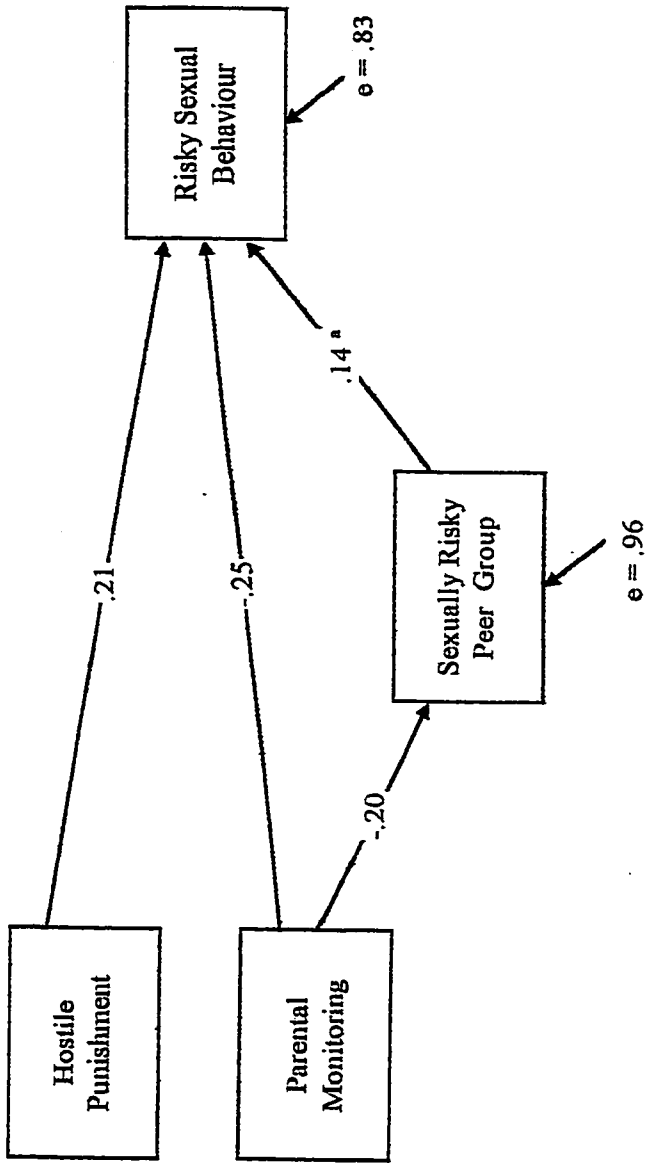


Figure 3. Path model predicting delinquency and substance use, based on coercion theory.

Note. Standardized path coefficients. Social desirability effects are not shown. Significant paths were found from social desirability to delinquent peer group (-.14) and to delinquency (-.23). All paths significant at  $p < .05$



Figure 4 illustrates results for the revised sexual risk model. In this model, effects from social desirability and coercive interactions to risky sexual behaviour were not significant. Results indicate direct and indirect effects of parental monitoring on risky behaviour. Teens who report more parental monitoring engage in less risky behaviour. Furthermore, they are less likely to associate with friends who engage in risky behaviour. Less association with "risky" friends is in turn linked to less individual sexual risk behaviour. Another parenting variable, hostile punishment, was positively related to sexual risk taking. Model fit for this simplified model was acceptable,  $\chi^2 (1, n = 124) = 1.39, p = .24, \chi^2/df \text{ ratio} = 1.39, \text{NFI} = .96, \text{NNFI} = .92, \text{CFI} = .99$ , although the model was not very complex. The model accounted for 16.7% of the variance in sexual risk taking. Once again, a multi-group analysis was conducted to examine the possibility of sex differences. Results suggest that the model applied equally well for boys ( $n = 51$ ) and girls ( $n = 73$ ),  $\chi^2 (6) = 8.10, p = .23$ .



**Figure 4.** Path model predicting risky sexual behaviour, based on coercion theory.

**Note.** Standardized path coefficients. All paths significant at  $p < .05$ , except <sup>a</sup>  $p < .10$ .

### Test of the combined model

First, in order to reduce the number of variables used in the analysis, two latent variables - insecure attachment with mom and with dad - were evaluated. In the confirmatory measurement model, presented in Figure 5, each latent variable was composed of secure (reverse coded), dismissing, and fearful attachment styles (for each target figure separately; see Appendix C for correlation matrix and standard deviations). Correlated measurement errors were expected across target figures (e.g., error for secure attachment with mom would be correlated with error for secure attachment with dad). This model showed acceptable fit to the data,  $\chi^2 (5, n = 502) = 4.85, p = .43, \chi^2/df \text{ ratio} = .97, \text{NFI} = .99, \text{NNFI} = 1.00, \text{CFI} = 1.00$ , indicating that the security variables could be combined to form correlated, but distinct, indices of insecure attachment with each parent.

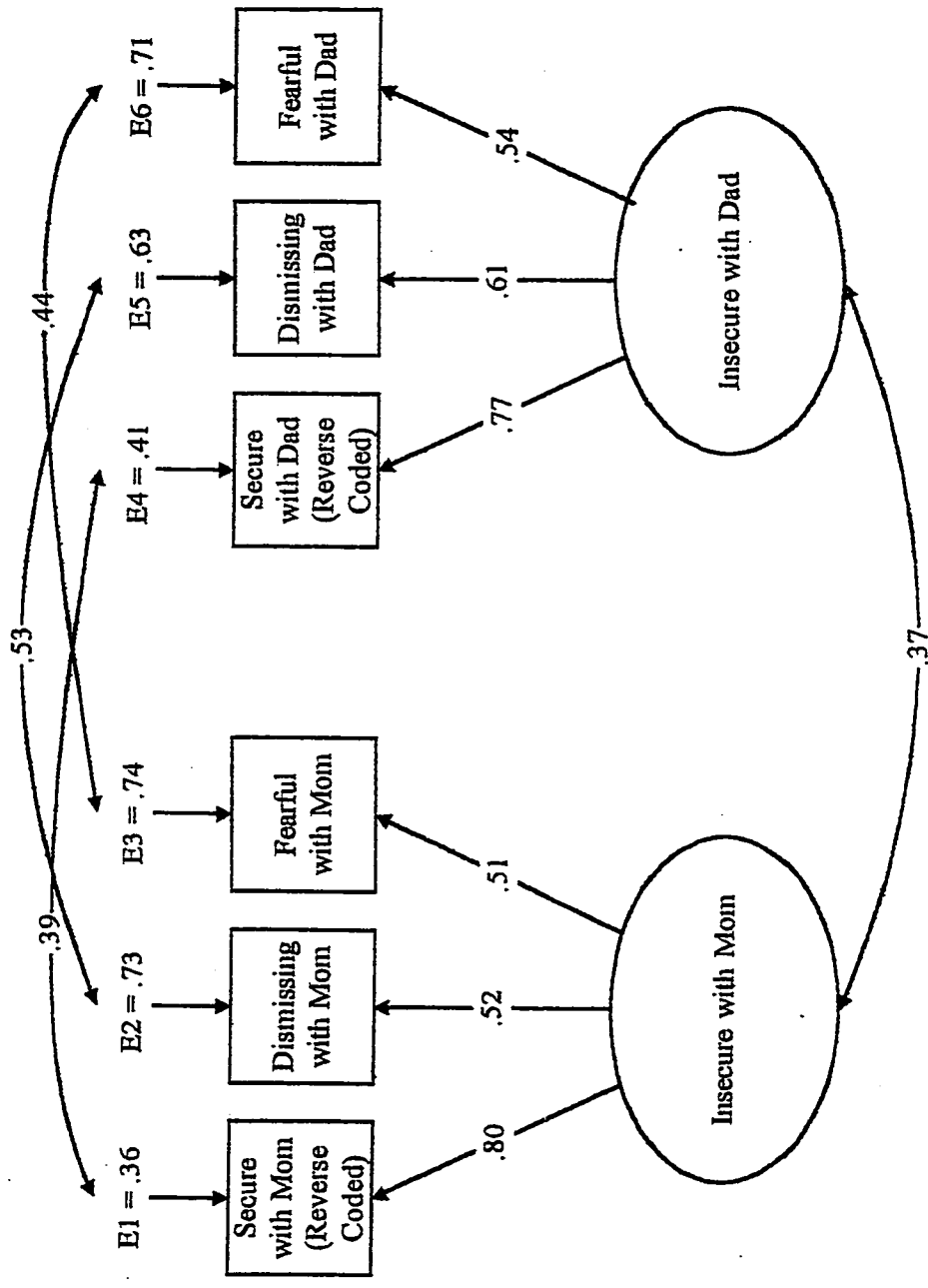


Figure 5. Latent model of insecure attachment with mother and father.  
 Note. Standardized path coefficients. All paths significant at  $p < .05$

Next, structural equation modeling was used to test the combined attachment/coercion model (see Appendix C for correlation matrix and standard deviations). In this model, the factors obtained above were not re-estimated (in order to reduce the number of paths). Instead, the security scales were combined to create new variables to be used in the model. Correlated measurement error was also expected between hostile punishment and coercive interactions. The final model, which fit the data well,  $\chi^2 (26, n = 502) = 41.85, p = .03, \chi^2 /df \text{ ratio} = 1.58, NFI = .97, NNFI = .97, CFI = .99$ , is presented in Figure 6. This model accounted for 50% of the variance in delinquency and 32% of the variance in substance use. Results indicate that insecure attachment with mother and father are related to delinquency and substance use indirectly, through parenting variables. Specifically, insecure attachment with mother and father are positively related to use of hostile punishment, and negatively related to parental monitoring. Hostile punishment is in turn related to more delinquency and more substance use, whereas parental monitoring is associated with less delinquency. Parental monitoring is also linked to less antisocial behaviour in one's peer group, suggesting that monitoring also has an indirect positive effect on antisocial behaviour, through the reduction of association with deviant peers. Insecure attachment with each parent is also associated with more coercive interactions with each respective parent. Coercive interactions with father are in turn positively related to angry confrontational coping, which is linked to more antisocial behaviour. In this model, the weak link between coercive interactions with mother and substance use (found in the coercion model) was not significant.

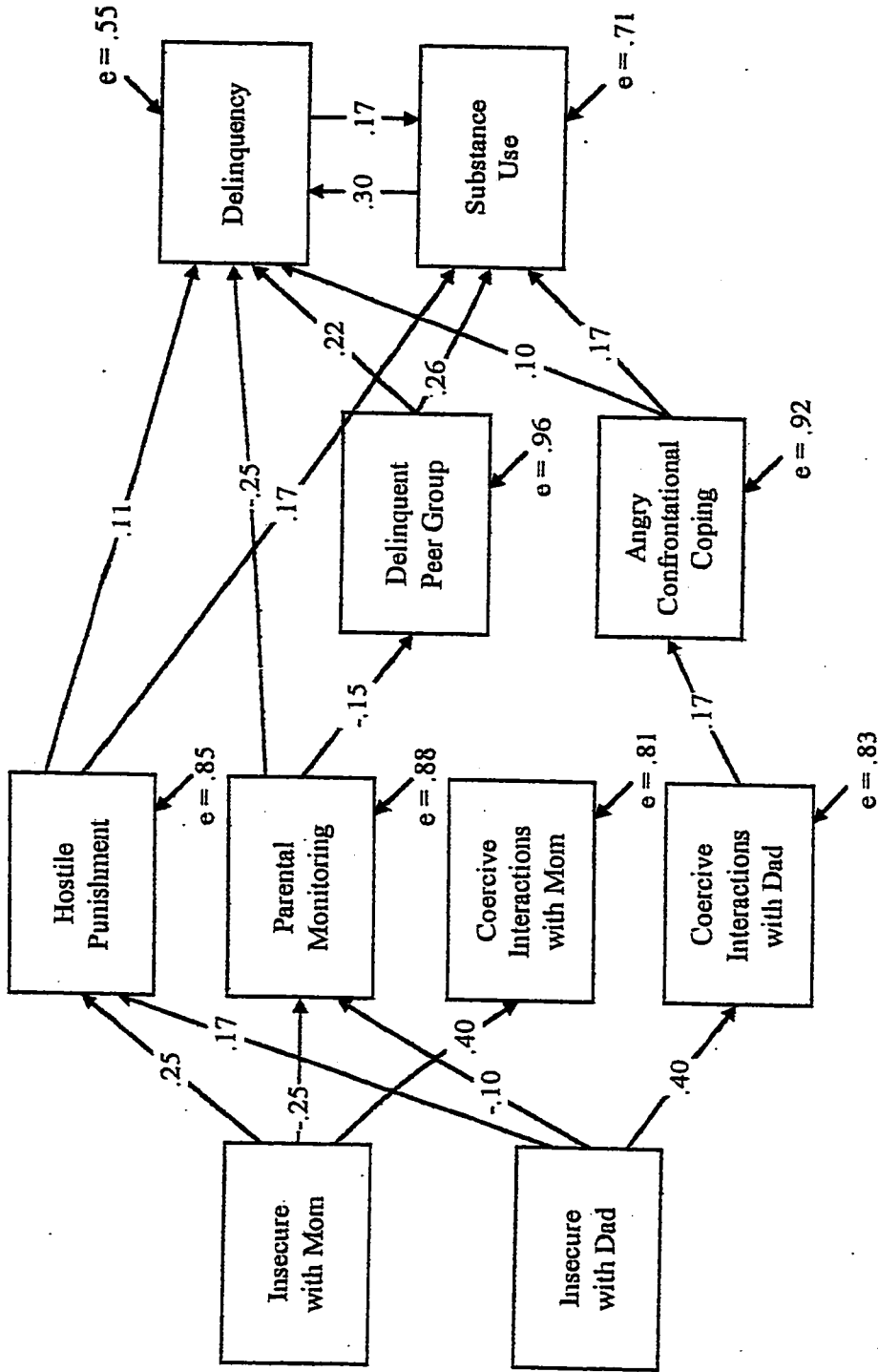


Figure 6. Combined model, based on attachment and coercion theories, predicting delinquency and substance use.

Note. Standardized path coefficients. Social desirability effects are not shown. Significant paths were found from social desirability to hostile punishment (-.12), monitoring (.15), coercive interactions with mother (-.19), coercive interactions with father (-.09), delinquent peer group (-.14), angry confrontation (-.20) and to delinquency (-.13). All paths significant at  $p < .05$ .

In order to determine whether the combined model offered an improved understanding of antisocial behaviour than the coercion theory model, the model AICs (Akaike's Information Criterion; Akaike, 1987) were compared. The AIC is similar to the  $\chi^2$  statistic but considers model complexity. Comparing AICs is more appropriate than examining the  $\chi^2$  difference between models when models are nonhierarchical. The model with the lowest AIC value is preferred. In this case, although the combined model was more complex than the coercion model, it also had the lowest AIC value (-10.82 vs. -2.51). Hence, the combined model is the preferred model.

Given the large number of paths in this model, and the sample size, a multi-group analysis comparing model fit for boys and girls was not possible. Nonetheless, the lack of gender differences in the attachment model and the coercion model suggest that gender differences would not likely be present in this combined model. For similar reasons, the combined model could not be evaluated with respect to risky sexual behaviour.

### Discussion

This study examined adolescent involvement in antisocial behaviour from two theoretical standpoints: Bowlby's attachment theory and Patterson's coercion theory. This section begins by examining the representativeness of the sample. Results regarding attachment theory are then discussed, followed by results regarding coercion theory. Next, the combined model is considered. The section continues with a commentary regarding the limitations of the current study. Finally, general conclusions are presented.

#### Representativeness of the sample

In terms of involvement in antisocial activities, the teenagers in this sample were

similar in many ways to youths in other provinces and Canada as a whole. With respect to delinquency, results are comparable to previous research which shows that most teens have committed some form of delinquent act (see Moffitt, 1993) and that teens from one-parent families are likely to be more delinquent (Stevenson, Tufts, Hendrick, & Kowalski, 1999). Arrest rates reported by teens in this sample are higher than the national average of approximately 5% (Stevenson, et al., 1998). This may be because participants misinterpreted the meaning of "arrested". When they asked for clarification during data collection, they were told that the question referred to being apprehended and brought to the police station. Given that only approximately two thirds of youths apprehended by police are charged or recommended to be charged (Carrington, 1998), the number reported in this sample may actually be representative. That is, the 11% of teens who reported they were "arrested" may be those who were "apprehended". This percentage is more comparable to the 15% figure based on Carrington's (1998) findings. In future studies, participants should be provided with a clearer definition of the terms. It should also be noted that this question was not an original item on the Elliott, et al. (1985) questionnaire. Finally, of the teens who reported being arrested, the most common offense reported was theft - which is consistent with Canadian Youth Court Statistics (Stevenson, et al., 1998).

With respect to substance use, the average number of drugs used by teens in the current study was similar to rates reported by grade 11 high school students in Ontario (Adlaf & Ivis, 1997). Rates for use of specific drugs found in this study were also parallel to those found by Adlaf and Ivis, with the exception of alcohol and tobacco use, which



were higher in this sample (alcohol use: 88% vs. 80%; tobacco use: 54.8% vs. 43.4%). Higher percentages of teens trying alcohol or tobacco in Quebec than in Ontario is consistent with the fact that rates of using these substances by adults in Quebec are higher than in Ontario (Kellner, 1997, Poulin, 1997). Furthermore, the legal age for purchasing alcohol in Quebec is lower than in Ontario. Adlaf and Ivis also found that girls were more likely to have used amphetamines, as in this study, although no other gender differences were reported.

The number of teens who were sexually active in this sample (31%) is lower than that found in the National Population Health Survey of a representative sample of adolescents (43.5%, Galambos & Tilton-Weaver, 1998). This may be because most participants in this study were 16 and 17-years-old and the national figures are based on 15 to 19-year-olds. Perhaps many of the adolescents in this study will become sexually active in the next year.

With respect to attachment style, results from this study are comparable to previous research using categorical data (e.g., Mickelson, et al., 1997). Specifically, highest ratings were found for secure attachment, followed by dismissing attachment and ratings for the fearful and preoccupied styles were lowest. Gender differences in parental monitoring are also consistent with previous research that finds girls are more monitored than boys (e.g., Chilcoat, Breslau, & Anthony, 1996). Finally, less parental monitoring in single-parent families relative to two-parent families is also a common finding (e.g., Chilcoat, et al., 1996).

When compared to data obtained from the Canadian Census (of 1996 and 1981),

this sample was also remarkably representative of the Canadian population in terms of ethnic background and socioeconomic status. Taken together, these findings suggest that this sample is, in many respects, representative of Canadian youth, thereby adding to the potential generalizability of the results. Nevertheless, the sample was drawn from Catholic high schools, and contains more intact families than found in the general population.

#### Attachment theory

As anticipated, attachment style was associated with antisocial activity. Teens who were more securely attached with their mothers and fathers were less likely to be delinquent, had tried fewer drugs, and held less risky attitudes regarding sexual behaviour. Being more secure with father, in particular, appeared to play a protective role with respect to delinquent behaviour and problematic substance use. Adolescents who were more secure with their fathers had engaged in less delinquency and were less likely to report using drugs as a way of dealing with unpleasant emotions and interpersonal conflict.

In contrast, teens who were higher in dismissing attachment with both parents were involved in more antisocial behaviour: they were more delinquent, had tried more drugs, and had riskier attitudes regarding sexuality. A similar pattern was found for adolescents higher in fearful attachment (although results only achieved statistical significance when attachment to mother was considered). It may be that these teens, who find it difficult to rely on their parents, attempt to assert their independence by acting out in antisocial ways. This is compatible with Moffitt's (1993) view that many teens engage in antisocial behaviour as a way of achieving "mature" status. These results are also

consistent with the hypothesis that avoidant attachment styles would be more strongly related to antisocial outcomes, given the shared characteristic of negative views of others.

Both fearful and dismissing styles were also related to using drugs in response to unpleasant emotions and conflict with others, with stronger effects for attachment with father versus mother. These findings suggest that avoidant attachment styles may be associated with more serious substance use, since similar reasons for use are reported by problematic drug users (Annis, et al., 1996; Turner, et al., 1997) although this possibility remains to be examined in future research. As expected, being more fearful with father was also linked to using drugs in response to social pressure. In a sample of young adults (mean age of 19 years), Brennan and colleagues (1991) found that fearful attachment was more common for participants whose parents were problem drinkers. It may be that the adolescents in the current study who rated themselves higher in fearful attachment (and perhaps those who were higher on dismissing attachment), were exposed to unhealthier substance use in the home. Since problematic substance use is more common in males than females in the general adult population (Kellner, 1997), it is also likely that fathers would be more likely to model dysfunctional usage patterns than mothers.

Contrary to prediction, the preoccupied style was not related to any of the antisocial outcomes assessed in this study. This may be because teens who are preoccupied in their relationships with parents may be more motivated to behave in ways that will be viewed positively by their parents and may also spend less time with antisocial peers. Preoccupation in peer relationships, particularly with deviant peers, may have different implications for adjustment. This possibility remains to be examined in future

research. It could also be that preoccupied attachment may be more strongly related to mood disorders rather than externalizing problems. For example, numerous studies have demonstrated a link between preoccupied attachment and depression (e.g., Murphy & Bates, 1997).

Interestingly, quality of attachment was not significantly related to risky sexual behaviour. This may be due in part to the relative sexual inexperience of the adolescents in this sample: only 31% were sexually active and of these, most had only recently had their first sexual encounter. The link between attachment and sexual risk-taking should be examined in future studies with older adolescents and/or participants with more sexual experience.

Attachment style was also differentially associated with adolescents' ways of coping with stress. As expected, secure attachment with mother was related to more constructive coping (e.g., problem-solving, positive reappraisal, social support seeking) and less emotion avoidance. Once again the possibility of a protective role of secure attachment with father was apparent. Although not more likely to use constructive coping, teens who felt closer and more able to rely on their fathers used less emotion avoidance and withdrawal, and were less likely to engage in self-criticism. Thus being able to depend on mother appears to promote positive coping skills, whereas being able to depend on father seems to reduce the likelihood of using less healthy coping strategies. This may be because, in contrast to their relationships with their fathers, teens' relationships with their mothers are closer and more focused on current events (Youniss & Smollar, 1985). As a result, mothers may be more helpful than fathers in teaching

constructive problem-solving skills to be used in the “here and now”. Nonetheless, feeling secure with their fathers may help teens develop more effective emotion regulation skills, thereby decreasing the likelihood of using less healthy coping strategies.

The hypothesis that dismissing attachment would be positively related to emotion avoidance was supported. Thus it appears as though teens higher in this attachment style, who feel unable to depend on their parents, cope with stress by deactivating the attachment system and refusing to think about the stressful situation. Fearful attachment was more strongly related to behavioral withdrawal, self-criticism and feelings of helplessness than to emotion avoidance. Consistent with their negative self-perceptions, teens high in fearful attachment seem to blame themselves for the stressful situations they experience and feel they are unable to cope effectively. They also appear to cope with their discomfort by withdrawing from social contexts, perhaps because they feel unable to rely on others. Finally, a non-significant trend was found between fearful attachment with mother and the use of angry confrontation, suggesting the possibility that fearful teens may become aggressive in response to stress.

An unexpected finding showed that being high in preoccupied attachment was associated with greater use of emotion avoidance. According to attachment theory, these teens often experience high levels of emotion. In response to stress, it is likely that their attachment system is “hyperactivated”, leading to hypervigilance with respect to indications of distress, and heightened levels of anxiety. Although it is difficult to assess in the current data set, it may be that the emotion avoidance associated with dismissing attachment is qualitatively different from the emotion avoidance associated with

preoccupied attachment. Although teens high in dismissing style may use emotion avoidance as a coping strategy, their emotions are probably less intense to begin with. In contrast, teens high in preoccupied style may simply have more intense emotions to cope with, thus making emotion avoidance particularly important for maintaining control.

Future research considering subjective levels of distress may shed light on this question.

Coping styles were also examined in relation to antisocial behaviour. Contrary to prediction, only one coping style was significantly associated with antisocial outcomes.

Teens who used more angry confrontation were also more delinquent and had tried more drugs. This coping style appears to reflect a lack of respect for others combined with an aggressive interpersonal style. It may also be an indication of poor impulse control.

Although it may be that the coping styles examined in this study are in effect unrelated to antisocial behaviour, alternative explanations are possible. For one, this study used a community-based sample of adolescents attending high school, in which antisocial problems and stressors were likely to be less severe than in more high risk groups.

Investigations with clinical samples may find such links. It could also be that the link between coping style and antisocial behaviour is moderated by one's behavioral repertoire.

For example, using emotion avoidance may only be related to antisocial outcomes for teens who have been exposed to aggressive or substance using models (in their peer group or in the home). Teens with more prosocial alternatives, who also use emotion avoidance, may simply involve themselves in other activities (e.g., sports). Other potential mediators, such as cognitive biases or negative expectations about others, should also be examined in future research. Dodge's work on social-information processing (e.g., Dodge, 1980;

Dodge & Frame, 1982; Dodge & Newman, 1981) may be of particularly relevance: avoidant teens may be more likely to have hostile attribution biases, which have been linked to aggression. A fourth possibility could be that the effects of coping on antisocial outcomes may only appear after more prolonged use of the particular coping style. Such effects would only be evident in longitudinal investigations.

A trend ( $p < .10$ ) in the smaller sample of sexually active participants also suggested that constructive coping may reduce sexual risk taking. This possibility should be examined in future work with larger samples of sexually active adolescents.

These results, based on attachment theory, suggest that adolescents' views of their own competence in relationships, and the expectations they develop about others (i.e., trustworthy and dependable vs. uncaring and unreliable) through their experiences in relationships, may come to shape the way they cope with stressful situations and whether they act out in antisocial ways. Further examination of such links using longitudinal designs and different forms of measurement may help further understand the complex phenomenon of adolescent antisocial activity. These findings also suggest that attachment style may vary across attachment figures. Future work should continue to examine the role of attachment to different individuals in order to further understand differential contributions of relationships. During the adolescent years, attachment style with peers (including romantic partners) and other important adult figures (teachers, coaches, counsellors) may make different contributions to adjustment. In addition, examining discrepancies in attachment style across target figures may be important. For example, Fonagy and colleagues (1998) have suggested that the challenge posed by resolving

discrepancies in representations of self and other in relationships may lead to behavioral problems.

### Coercion theory

Consistent with previous investigations, the coercion theory model provided a good understanding of adolescent antisocial behaviour. As in previous research, parental monitoring was associated with less antisocial activity (e.g., Dishion, et al., 1991). Teens who were monitored more frequently by their parents associated with less deviant peer groups, were less delinquent, had experimented with fewer drugs, held less risky sexual attitudes and had engaged in less sexual risk taking behaviour. Given the concurrent nature of the study, it is difficult to assess whether antisocial behaviour decreased in response to parental monitoring or whether parental monitoring changed as a result of adolescent misbehaviour. It is likely that both possibilities are true. Nonetheless, these results suggest that, even during the adolescent years, when teens spend more time with their peers and strive to achieve independence, parents still have a role to play in their social development. By setting limits and being aware of their adolescent children's activities and social contacts, parents may decrease the likelihood of antisocial behaviour. Parental monitoring may also reflect more security in the parent-child relationship. That is, parents who feel closer to their children may be more likely to monitor them and teens who feel able to depend on their parents may be more likely to tell their parents about their friends and their activities.

In contrast, adolescents who reported being victim to hostile punishment in their homes were also more delinquent and had tried more drugs. In addition, they held riskier



sexual attitudes and were more involved in risky sexual activity. Teens who argued more frequently with their mothers also experimented with more drugs. It is likely that, in their family environment, these teens have been exposed to more negative ways of interacting with others, increasing their likelihood of acquiring similar patterns through social learning processes. For example, parents who use hostile punishment do not model effective impulse control or emotion regulation. In addition, exposure to a general lack of respect for others conveyed through coercive interactions, may result in increased lack of regard for others both within the family context and elsewhere. Together these processes may enhance the likelihood of antisocial outcomes during the teen years. Yet it may also be that parents of difficult teens react to their child's misbehaviour by using hostile punishment.

#### The combined model

Combining Bowlby's attachment theory with Patterson's coercion theory permitted a more complete understanding of potential processes underlying the development of antisocial activity during adolescence. Although the combined model was more complex than the coercion model, comparison of the models using Akaike's Information Criterion (1987) suggested that the combined model was preferred. These results underscore the importance of considering both affective and social learning processes for understanding adolescent antisocial behaviour.

Findings from the combined model suggest that the affective quality of parent-child relationships can be linked indirectly to antisocial behaviour through day-to-day parenting behaviours. Consistent with attachment theory, insecure attachment relationships were

related to a more contentious home environment, characterized by hostile punishment, coercive interactions, and less parental monitoring.

Teens who were more insecure with their fathers argued more frequently with them and were also likely to use more angry confrontation in response to stress. This way of coping may reflect a combination of disregard for authority and lack of respect for others characteristic of the avoidant attachment styles and learned ways of interacting with others. Angry confrontation was also related to delinquency and substance use, highlighting the potential role of dysfunctional coping in adolescent antisocial activity. Although insecure attachment with mother was also related to more frequent arguments with her, coercive interactions with mother were not associated with coping style or antisocial outcomes. Perhaps such interactions with mothers do not reflect the same test of authority as they do with fathers.

Contrary to expectation, hostile punishment and parental monitoring were not significantly related to use of angry confrontation (the only coping style associated with antisocial outcomes). This may be because hostile punishment does not necessarily involve a counter-reaction on the part of the adolescent. In contrast, adolescents who are involved in coercive interactions with their fathers seem to be already using angry confrontation patterns in the home. Given that parental monitoring appears to be an indication of security in parent-child relationships, it may be related to other more adaptive ways of coping, such as constructive problem-solving.

### Limitations

One major limitation of this study is the fact that data was collected at one point in

time, thereby limiting conclusions about the directionality of effects. This is particularly true with respect to the link between attachment and parenting. In the combined model presented here, attachment style was seen as antecedent to daily interactions. However, it is likely that a reciprocal relationship exists between the affective quality of the parent-child bond and the more behavioral aspects of parent-child interactions (e.g., punishment, monitoring). Observational research of parents and adolescents may help further understand the way in which these two facets of their relationship interact. With the current data, it is also difficult to say whether attachment quality and parenting vary in response to adolescent misconduct or whether they are precursors to antisocial activity. While theoretically it can be argued that relationship factors precede coping abilities and teen behaviour, this question can only truly be answered with prospective, longitudinal research which considers processes over time.

Another important limitation of this study is the sole reliance on adolescent self-reports. Although efforts were made to collect parental reports of attachment style, marital relationship quality (including conflict resolution style), ways of coping, monitoring, coercive interactions with their child, and use of hostile punishment, the response rate was so low ( $n = 42$  mother-father pairs, 26 mother only, and 6 father only, 12%) that analyses using this data were not feasible. Nonetheless, for the sample for which such data was available, adolescents' reports of monitoring and coercive interactions were significantly correlated with parental reports. (Discrepancies were found between adolescent and parent reports of hostile punishment, although this may be due to a social desirability bias on the part of the parents.) Parent participation was solicited

through their adolescent children, and it is possible that many parents never received the letter inviting them to participate. The use of multiple informants and of multi-method assessment of the variables examined in this study would be recommended in future research.

This study was limited to a sample of adolescents attending high school. Despite the representativeness of the sample, it is likely that this is relatively healthy sample. Although continued work with high school students is necessary (especially given the level of antisocial activity that is typical of this population), research examining the link between attachment and antisocial activity should also be conducted with more deviant populations (e.g., clinic samples, officially delinquent samples, etc.). Furthermore, given the small number of single-parent families, analyses were limited to the larger sample of two-parent families. It is difficult to say whether similar patterns of findings would be evident in single-parent households. Future research with single-parent families and/or families in transition, may reveal different processes or highlight particularly important factors in parent-child relationships which could trigger antisocial activity.

### Conclusions

These results suggest that attachment theory offers a useful framework for understanding antisocial behaviour and coping strategies during adolescence. In particular, avoidant attachment styles with both parents are linked to more risk taking behaviours and secure attachment with father appears to act as a protective factor. Despite the fact that attachment styles could be differentially related to coping strategies, many of the ways adolescents coped with stressful situations were not associated with

their antisocial activity. The exception, angry confrontation, was not related to attachment style and therefore could not be viewed as a potential mediator of the attachment - antisocial behaviour link. It may be that links between coping style and antisocial outcomes would be more evident in clinical samples. Future research should also consider other potential mediating factors.

As predicted by coercion theory, parenting practices were also related to adolescent antisocial behaviour. Parental monitoring, in particular, appeared to be a possible deterrent for all forms of antisocial behaviour examined, including association with deviant peer groups (although given the concurrent nature of the study, it is possible that monitoring occurred in response to child misbehaviour). The negative interaction patterns characteristic of a contentious family environment were also associated with acting out behaviour, perhaps because teens have acquired disrespect for others and coercive ways of interacting through social learning processes.

Finally, combining attachment theory and coercion theory perspectives helped understand potential processes leading to antisocial outcomes. The affective quality of the parent-child bond was reflected in daily parent-child interactions. Parental monitoring appeared to reflect, in part, a secure parent-child relationship whereas hostile punishment and coercive interactions were associated with insecure attachment. Findings from the combined model suggest that the link between insecure attachment and delinquency and substance use is mediated by use of more hostile punishment and less parental monitoring. The association between insecure attachment with father and antisocial outcomes was also mediated by more frequent coercive interactions and teens' use of more angry

confrontation. This combined model highlights the possible joint contribution of affective and social learning processes for adolescent antisocial outcomes, which remain to be examined further in prospective longitudinal research.

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## Appendix A





**CENTRE FOR RESEARCH IN HUMAN DEVELOPMENT**

tel: (514) 848-2240 fax: (514) 848-2815

Dear Student:

We are writing to ask you to participate in a study about relationships, coping, emotions, and behavior. We would like to know what this time of your life is *really* like for you. Your participation will involve completing questionnaires about your relationships, the ways you cope with stress, and how you deal with rules, alcohol, drugs, and sex. We will ask you about your relationship with your parents, your friends, and your perceptions about your parents' relationships. We will also ask about your involvement in a variety of different activities, including rule breaking behaviour, alcohol and drug use, as well as your attitudes about sexual behaviour. Finally, we will ask you about your mood, and about how you feel about yourself in general.

We think you will find the project interesting, and your participation would greatly help us understand the kinds of experiences people your age go through. The study will take place during class, and be completed in two sessions of approximately 50 minutes each. We would like to remind you that all information you provide will be completely confidential. That means NO ONE will see the information you give us, except the members of the research project team.

If you are interested, we will also be pleased to send you a report of the study once completed. And of course, you are free to discontinue at any time, although we think you'll enjoy participating in the study.

Please complete the enclosed consent form and give it to your teacher. We want to hear from you whether or not you wish to participate. Everyone returning the form (whether the answer is Yes or No) will have their name entered in a draw.

**YOU COULD WIN ONE OF THE FOLLOWING:**

- 1) a Cineplex Odeon movie passes for two,**
- 2) 4 passes for two to Laser Quest,**
- 3) a \$50 gift certificate for HMV Music Stores,**
- 4) a Sony Disc Man!!**

**or A GRAND PRIZE OF**

If you have any questions about the study, please call Kirsten Voss at 848-7560. We look forward to hearing from you.

Sincerely,

Kirsten Voss, M.A.,  
Graduate Student  
(848-7560)

Anna-Beth Doyle, Ph.D.  
Professor of Psychology  
(848-7538)

Dorothy Markiewicz, Ph.D.  
Associate Professor of Applied  
Social Science and of Psychology  
(848-2215)



**CENTRE FOR RESEARCH IN HUMAN DEVELOPMENT**

tel: (514) 848-2240 fax: (514) 848-2815

October 1997

**CONSENT FORM TO PARTICIPATE IN RESEARCH (Form A)**

Check where applicable:

\_\_\_\_\_ I agree to participate in the study conducted by Kirsten Voss, Dr. Dorothy Markiewicz, and Dr. Anna-Beth Doyle of the Centre for Research in Human Development. I have been informed that the study is about relationships, coping, emotions, and behaviour.

\_\_\_\_\_ I am not sure if I want to participate and I want to be called to discuss the project.

Please indicate your name and phone number:

\_\_\_\_\_

\_\_\_\_\_ I do not agree to participate in this study and do not wish to be called. Please indicate your name (so we can put your name in the draw):

\_\_\_\_\_

IF YOU AGREE TO PARTICIPATE, please complete the following:

I have been informed that the purpose of the research is to study the link between relationship quality, coping style, emotions, and behaviour. Participation will be at my school, and will involve two sessions of approximately 50 minutes, during which I will be asked to complete questionnaires about my relationship with my friends, my parents, my perception of my parents' relationships, the ways I cope with stress, my mood and feelings about myself, and involvement in rule-breaking behaviour, use of alcohol and drugs, and attitudes regarding sexual behaviour. I understand that **ALL INFORMATION WILL BE CONFIDENTIAL** to the research team, and identified only by number. I understand that I may withdraw my consent and may discontinue participation at any time.

**I HAVE READ THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND AGREE TO PARTICIPATE IN THIS STUDY.**

Name (please print): \_\_\_\_\_

Street Address: \_\_\_\_\_

City and Postal Code: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

School: \_\_\_\_\_ Grade: \_\_\_\_\_

Teachers' name/class: \_\_\_\_\_

Please return this form to your teacher.

## **Appendix B: Measures**

## Appendix B

This appendix contains copies of the measures used in data collection. They are presented in the following order:

### PHASE 1

1. General Information
2. Relationships at School - Peer nomination of friends and non-friends
2. The Relationship Questionnaire (Bartholomew & Horowitz, 1991)
  - versions for father and mother
3. The Ways of Coping Questionnaire (Folkman & Lazarus, 1988)
4. The Family Issues Questionnaire
5. The Social Desirability Scale (Strahan & Gerbasi, 1972; page entitled “Attitudes Questionnaire”)
6. General Information for Parents - Adolescent Report

### PHASE 2

1. The Self-Report Delinquency Scale (Elliott, et al., 1985)
2. The Inventory of Drug-Taking Situations (Annis & Martin, 1985)
3. The Adolescent Sexuality Scale
4. A comments and suggestions page

**GENERAL INFORMATION FORM**

**The information provided in this form will help us describe the range of participants in our study.**

1. Age: \_\_\_\_\_
2. Date of birth: \_\_\_\_\_
3. Sex: \_\_\_\_\_
4. Grade: \_\_\_\_\_
5. School: \_\_\_\_\_
6. What is your mother tongue (first language)? \_\_\_\_\_
7. What languages do you speak at home? \_\_\_\_\_
8. Who lives in your house with you?  
Mom \_\_\_\_\_ Dad \_\_\_\_\_  
Stepmom \_\_\_\_\_ Stepdad \_\_\_\_\_  
Sisters (specify ages) \_\_\_\_\_ Brothers (specify ages) \_\_\_\_\_  
Other adults (please specify) \_\_\_\_\_
9. My mom is (check one):  
\_\_\_\_\_ Single      \_\_\_\_\_ Married      \_\_\_\_\_ Divorced      \_\_\_\_\_ Widowed
10. My dad is (check one)  
\_\_\_\_\_ Single      \_\_\_\_\_ Married      \_\_\_\_\_ Divorced      \_\_\_\_\_ Widowed
10. My ethnic/cultural background is: \_\_\_\_\_  
(e.g., Italian, Hispanic, African, ...)

## RELATIONSHIPS AT SCHOOL

Please name your **best same-sex friends** in grades 10 and 11 at your school (*first & last names*). **BEGIN WITH YOUR VERY BEST FRIEND**.

You can name as many or as few friends as you like (you don't have to fill all the lines).

1. \_\_\_\_\_
  2. \_\_\_\_\_
  3. \_\_\_\_\_
  4. \_\_\_\_\_
  5. \_\_\_\_\_
- 

Please name same-sex students in grades 10 and 11 at your school that you don't like to spend time with.  
(You don't have to fill all the lines)

1. \_\_\_\_\_
  2. \_\_\_\_\_
  3. \_\_\_\_\_
  4. \_\_\_\_\_
  5. \_\_\_\_\_
- 

If you have one or more best friends of the **opposite sex** at your school, name them here. **DO NOT** include a romantic partner (someone you are dating).  
(You don't have to fill all the lines)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_





## **RELATIONSHIP WITH MOTHER**

If you don't have a mom or stepmom, just leave this blank and go to the next questionnaire.

Please tell us who you are thinking of when you fill out this questionnaire (check one):

\_\_\_\_\_ Mom                      OR                      \_\_\_\_\_ Stepmom

Think about your relationship with your mother. Now read each paragraph below and indicate to what extent **each** paragraph describes your relationship with your mother. **Circle the number** that is true for you.

1. It is easy for me to become emotionally close to my mother. I am comfortable depending on my mother and having my mother depend on me. I don't worry about being alone or having my mother not accept me.

Not at all

Very Much

1.....2.....3.....4.....5.....6.....7

2. I am comfortable not having a close emotional relationship with my mother. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on my mother or have my mother depend on me.

Not at all

Very Much

1.....2.....3.....4.....5.....6.....7

3. I want to be completely emotionally intimate with my mother, but I often find that my mother is reluctant to get as close as I would like. I am uncomfortable not having a close relationship with my mother, but I sometimes worry that she doesn't value me as much as I value her.

Not at all

Very Much

1.....2.....3.....4.....5.....6.....7

4. I am uncomfortable getting close to my mother. I want to be emotionally close to my mother, but I find it difficult to trust her completely, or to depend on her. I worry that I will be hurt if I allow myself to become too close to my mother.

Not at all

Very Much

1.....2.....3.....4.....5.....6.....7

## WAYS OF COPING

Take a few moments and think about the most stressful situation that you have experienced in the past few weeks. By "stressful" we mean a situation that was difficult or troubling for you, either because you felt distressed about what had happened, or because you had to use considerable effort to deal with the situation. It might have been a discussion or confrontation with someone close to you, a problem with a teacher at school or with a co-worker, a separation from someone you care about.

Briefly describe the incident you are thinking about:

---



---



---



---

We would like to know how you **typically** deal with stressful situations when they occur. Use the following scale to indicate the frequency with which you use the strategies listed below:

0	1	2	3	
Does not apply Not used	Used Somewhat	Used quite a bit	Used a great deal	
1. I just concentrate on what I have to do next - the next step.	0	1	2	3
2. I do something that I don't think will work, but at least I do something.	0	1	2	3
3. I try to get the person responsible to change his or her mind.	0	1	2	3
4. I talk to someone to find out more about the situation.	0	1	2	3
5. I criticize or lecture myself.	0	1	2	3
6. I try not to burn my bridges, but leave things open somewhat.	0	1	2	3
7. I hope for a miracle.	0	1	2	3
8. I go along with fate; sometimes I just have bad luck.	0	1	2	3
9. I think "Why can't I get going?"	0	1	2	3
10. I go on as if nothing happened.	0	1	2	3

**Remember to use this scale:**

	0	1	2	3
	Does not apply Not used	Used Somewhat	Used quite a bit	Used a great deal
11. I try to keep my feelings to myself.	0	1	2	3
12. I look for the silver lining, so to speak; I try to look on the bright side of things.	0	1	2	3
13. I sleep more than usual.	0	1	2	3
14. I express anger to the person(s) who caused the problem.	0	1	2	3
15. I accept sympathy and understanding from someone.	0	1	2	3
16. I think "Why do I always react this way?"	0	1	2	3
17. I am inspired to do something creative about the problem.	0	1	2	3
18. I try to forget the whole thing.	0	1	2	3
19. I get professional help.	0	1	2	3
20. I go away by myself and think about why I feel this way.	0	1	2	3
21. I change or grow as a person in a good way.	0	1	2	3
22. I apologize or do something to make up.	0	1	2	3
23. I make a plan of action and follow it.	0	1	2	3
24. I let my feelings out somehow.	0	1	2	3
25. I realize I bring the problems on myself.	0	1	2	3
26. I write down what I am thinking and analyze it.	0	1	2	3
27. I come out of the experience better than when I went in.	0	1	2	3
28. I talk to someone who can do something concrete about the problem.	0	1	2	3
29. I try to make myself feel better by eating, drinking, smoking, using drugs or medication, etc.	0	1	2	3
30. I take a big chance or do something very risky to solve the problem..	0	1	2	3

**Remember to use this scale:**

0	1	2	3
Does not apply Not used	Used Somewhat	Used quite a bit	Used a great deal

31. I try to not act too hastily or follow my first hunch.	0	1	2	3
32. I find new faith.	0	1	2	3
33. I rediscover what is important in life.	0	1	2	3
34. I change something so things will turn out all right.	0	1	2	3
35. I avoid being with people in general.	0	1	2	3
36. I don't let it get to me; I refuse to think too much about it.	0	1	2	3
37. I ask a relative or friend I respect for advice.	0	1	2	3
38. I keep others from knowing how bad things are.	0	1	2	3
39. I go someplace alone to think about my feelings.	0	1	2	3
40. I make light of the situation; I refuse to get too serious about it.	0	1	2	3
41. I go over and over the details of what happened.	0	1	2	3
42. I talk to someone about how I am feeling.	0	1	2	3
43. I stand my ground and fight for what I want.	0	1	2	3
44. I take it out on other people.	0	1	2	3
45. I draw on my past experiences; I have been in similar situations before.	0	1	2	3
46. I think "I won't be able to concentrate if I keep thinking this way."	0	1	2	3
47. I know what has to be done, so I double my efforts to make things work.	0	1	2	3
48. I refuse to believe that it happened.	0	1	2	3
49. I make a promise to myself that things will be different next time.	0	1	2	3

**Remember to use this scale:**

0	1	2	3
Does not apply Not used	Used Somewhat	Used quite a bit	Used a great deal

50. I come up with a couple of different solutions to the problem.	0	1	2	3
51. I try to keep my feelings from interfering with other things too much.	0	1	2	3
52. I change something about myself.	0	1	2	3
53. I wish that the situation would go away or somehow be over with.	0	1	2	3
54. I sit at home and try to understand the situation.	0	1	2	3
55. I have fantasies or wishes about how things might turn out.	0	1	2	3
56. I pray.	0	1	2	3
57. I go over in my mind what I will say or do.	0	1	2	3
58. I think about how a person I would admire would handle the situation and use that as a model.	0	1	2	3

## FAMILY ISSUES

The following questions ask about the rules some families have at home, and about the consequences for breaking those rules. Please read each question carefully and circle the number which best describes your experience. Tell us about the parents you live with.

1. How important is it to your parents to know where you are?

0 .....	1 .....	2 .....	3
Not Important	Somewhat Important	Very Important	Extremely Important

2. In the course of a day, how often do your parents actually know where you are?

0 .....	1 .....	2 .....	3
Never	Sometimes	Often	Always

3. How important is it to your parents to know who your friends are?

0 .....	1 .....	2 .....	3
Not Important	Somewhat Important	Very Important	Extremely Important

4. How often would your parents know who you are with when you are away from home?

0 .....	1 .....	2 .....	3
Never	Sometimes	Often	Always

5. How often do your parents follow through with a punishment after you're told to stop doing something but you don't stop?

0 .....	1 .....	2 .....	3
Never	Sometimes	Often	Always

6. How often do you get away with things?

0 .....	1 .....	2 .....	3
Never	Sometimes	Often	Always

7. When you are punished, how often does the punishment work?

0 .....	1 .....	2 .....	3
Never	Sometimes	Often	Always

8.. Once your parents decide on a punishment, how often can you get out of it?

0 ..... 1..... 2 ..... 3  
Never                      Sometimes                      Often                      Always

9. When you do something wrong, how often do your parents ignore it?

0 ..... 1..... 2 ..... 3  
Never                      Sometimes                      Often                      Always

10. When you do something that your parents like or approve of, how often do they ignore it or not say anything about it?

0 ..... 1..... 2 ..... 3  
Never                      Sometimes                      Often                      Always

11. Do your parents punish you by slapping or hitting you?

0 ..... 1..... 2 ..... 3  
Never                      Sometimes                      Several Times                      Often

12. Do your parents punish you by not letting you do things you would like to do?

0 ..... 1..... 2 ..... 3  
Never                      Sometimes                      Several Times                      Often

13. Do your parents punish you by arguing?

0 ..... 1..... 2 ..... 3  
Never                      Sometimes                      Several Times                      Often

14. Do your parents punish you by saying you cause them distress?

0 ..... 1..... 2 ..... 3  
Never                      Sometimes                      Several Times                      Often

15. Do your parents punish you by calling you names?

0 ..... 1..... 2 ..... 3  
Never                      Sometimes                      Several Times                      Often

16. Is there a rule at home about the time to come home in the evenings?

\_\_\_\_\_ YES                      or                      \_\_\_\_\_ NO



17. Do your parents supervise *week night* curfew?

0 ..... 1 ..... 2 ..... 3  
Never                      Sometimes                      Often                      Always

18. Do your parents supervise *weekend* curfew?

0 ..... 1 ..... 2 ..... 3  
Never                      Sometimes                      Often                      Always

19. Is there a rule at home about how much time you can spend in front of the TV?

\_\_\_\_\_ YES                      or                      \_\_\_\_\_ NO

20. Is there a rule at home about having to do your homework?

\_\_\_\_\_ YES                      or                      \_\_\_\_\_ NO

21. Is there a rule at home that you cannot spend time with certain people?

\_\_\_\_\_ YES                      or                      \_\_\_\_\_ NO

22. Is there a rule at home that requires you to have dinner with the family?

\_\_\_\_\_ YES                      or                      \_\_\_\_\_ NO

23. How often do you tell your parents when you will be home?

0 ..... 1 ..... 2 ..... 3  
Never                      Sometimes                      Often                      Always

24. How often do you leave a note about where you are going?

0 ..... 1 ..... 2 ..... 3  
Never                      Sometimes                      Often                      Always

25. How often do you check in after school?

0 ..... 1 ..... 2 ..... 3  
Never                      Sometimes                      Often                      Always

26. How often is there an adult at home one hour after school?

0 ..... 1 ..... 2 ..... 3  
Never                      Sometimes                      Often                      Always

27. How often do you know how to reach your parents if they're out?

0 ..... 1..... 2 ..... 3  
Never                      Sometimes                      Often                      Always

28. How often do you talk to your parents about daily plans?

0 ..... 1..... 2 ..... 3  
Never                      Sometimes                      Often                      Always

**For the following questions, please indicate how true each statement is for you. Use the following scale.**

1	2	3	4	5
Never	Seldom	Sometimes	Often	Always
True	True	True	True	True

29. My mom and I have big arguments about little things.

1.....2.....3.....4.....5

30. My mom and I get angry with each other at least once a day.

1.....2.....3.....4.....5

31. My mom and I get angry with each other at least three times a week.

1.....2.....3.....4.....5

32. When my mom and I talk, it is frustrating.

1.....2.....3.....4.....5

33. My mom and I rarely argue.

1.....2.....3.....4.....5

34. My dad and I have big arguments about little things.

1.....2.....3.....4.....5

Remember to use this scale:

Never True	Seldom True	Sometimes True	Often True	Always True
1	2	3	4	5

35. My dad and I get angry with each other at least once a day.

1.....2.....3.....4.....5

36. My dad and I get angry with each other at least three times a week.

1.....2.....3.....4.....5

37. When my dad and I talk, it is frustrating.

1.....2.....3.....4.....5

38. My dad and I rarely argue.

1.....2.....3.....4.....5

39. We fight a lot in our family.

1.....2.....3.....4.....5

## ATTITUDES QUESTIONNAIRE

For the following questions, please circle "T" for True and "F" for False	True	False
1. I'm always willing to admit it when I make a mistake.	T	F
2. I have never been annoyed when people expressed ideas very different from my own.	T	F
3. I have never deliberately said something that hurt someone's feelings.	T	F
4. I like to gossip at times.	T	F
5. There have been occasions when I took advantage of someone.	T	F
6. I sometimes try to get even rather than to forgive and forget.	T	F
7. At times I have really insisted on having things my own way.	T	F

We would like to know a little more about your parents. Please complete the following as best you can.

**MOM INFORMATION:**

**Please fill this out about the person who lives with you (check one):**

\_\_\_\_\_ Mom                      OR                      \_\_\_\_\_ Stepmom

1. What level of education does your mother/stepmother have (highest grade completed)?

Elementary School \_\_\_\_\_ High School \_\_\_\_\_

CEGEP/Technical school: \_\_\_\_\_

University: Bachelor's \_\_\_\_\_  
Master's \_\_\_\_\_  
Doctorate \_\_\_\_\_

2. Mom/Stepmom's ethnic/cultural background: \_\_\_\_\_  
(e.g., Italian, Hispanic, African, ...)

3. Is your mom/stepmom working now at a paid job?: \_\_\_\_\_ YES or \_\_\_\_\_ NO

**If your mother is not currently working at a paid job, go to question # 8.**

4. Does she work: \_\_\_\_\_ Full-time (35+ hours a week) or \_\_\_\_\_ Part-time?

5. What is your mother's/stepmother's usual job? \_\_\_\_\_

6. What are the main activities of this job? \_\_\_\_\_

7. What industry is this in (e.g. what does the employer sell or make)?  
\_\_\_\_\_

8. **If your mother is not currently working at a paid job, would you say she was looking for work, keeping house, or unable to work (check one only)?**

\_\_\_\_\_ Looking for work      \_\_\_\_\_ Keeping house      \_\_\_\_\_ Unable to work

**DAD INFORMATION:**

**Please fill this out about the person who lives with you (check one):**

\_\_\_\_\_ Dad                      OR                      \_\_\_\_\_ Stepdad

1. What level of education does your father/stepfather have (highest grade completed)?

Elementary School \_\_\_\_\_ High School \_\_\_\_\_

CEGEP/Technical School \_\_\_\_\_

University: Bachelor's \_\_\_\_\_  
                  Master's \_\_\_\_\_  
                  Doctorate \_\_\_\_\_

2. Dad/Stepdad's ethnic/cultural background: \_\_\_\_\_  
(e.g., Italian, Hispanic, African, ...)

3. Is your dad/stepdad working now at a paid job?: \_\_\_\_\_ YES or \_\_\_\_\_ NO

**If your dad is not currently working at a paid job, go to # 8.**

4. Does he work: \_\_\_\_\_ Full time (35+ hours a week) or \_\_\_\_\_ Part time?

5. What is your father's/stepfather's usual job? \_\_\_\_\_

6. What are the main activities of this job? \_\_\_\_\_

7. What industry is this in (e.g. what does the employer sell or make)?  
\_\_\_\_\_

8. **If your dad is not currently working at a paid job, would you say he was looking for work, keeping house, or unable to work (check one only)?**

\_\_\_\_\_ Looking for work      \_\_\_\_\_ Keeping house      \_\_\_\_\_ Unable to work

This section asks about different behaviours that teenagers are sometimes involved in. Your answers are very important to us: we want to know what really happens for people your age so please answer all questions **honestly**. Remember, **ALL YOUR ANSWERS ARE CONFIDENTIAL**.

For each question,

- First indicate whether or not you have ever done what is described (check YES or NO).
- Then, if you answer YES, indicate how many times in the last year you have done each behaviour.  
(If you have done something more than 10 times, just write 10+. If in the last year you have never done what is described, even though you have done it before, just write 0.)

**Have you ever...? (If Yes, please indicate how many times in the last year.)**

1. Purposely damaged or destroyed property (includes vandalism/graffiti) belonging to your parents or other family members?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

2. Purposely damaged or destroyed property (includes vandalism/graffiti) belonging to your school or employer?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

3. Purposely damaged or destroyed other property (includes vandalism/graffiti) that did not belong to you, not counting family, school, or work property?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

4. Stolen or tried to steal a motor vehicle such as a car or motorcycle?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

5. Stolen or tried to steal something worth more than \$50.00?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

6. Knowingly bought, sold or held stolen goods or tried to do any of these things?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

7. Purposely set fire to a building, car, or other property or tried to do so?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

8. Carried a hidden weapon other than a plain pocket knife?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

9. Stolen or tried to steal things worth \$5.00 or less?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

10. Attacked someone with the idea of seriously hurting that person?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

11. Been involved in gang fights?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

12. Used checks illegally or used phony money to pay for something (includes intentional overdrafts)?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

13. Sold marijuana or hashish (weed, pot, grass, hash)?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------



14. Hitchhiked where it was illegal to do so?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

15. Stolen money or other things from your parents or other members of your family?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

16. Stolen money, goods, or property from school or from the place where you work?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

17. Hit or threatened to hit one of your parents?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

18. Hit or threatened to hit your teacher, your supervisor or another employee?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

19. Hit or threatened to hit anyone else (e.g., friends, strangers)?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

20. Been loud, rowdy, or unruly in a public place (disorderly conduct)?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

21. Sold hard drugs such as cocaine, LSD (acid), heroin (or others)?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

22. Tried to cheat someone by selling them something that was worthless or not what you said it was?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

23. Taken a vehicle for a ride or drive without the owner's permission?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

24. Bought liquor as a minor?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

25. Used force or "strong arm" methods to get money or things from people?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

26. Avoided paying for such things as movies, bus or metro rides, and food?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

27. Been drunk in a public place?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

28. Stolen or tried to steal things worth between \$5.00 and \$50.00?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

29. Broken into or tried to break into a building (including an abandoned building) or vehicle to steal something or just to look around?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

30. Begged for money or things from strangers?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

31. Failed to return extra change that a cashier gave you by mistake?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

32. Used or tried to use credit cards without the owner's permission?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

33. Made obscene telephone calls (such as calling someone and saying dirty things)?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

34. Snatched someone's purse or wallet or picked someone's pocket?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

35. Used money or funds entrusted to your care for some purpose other than that intended (embezzled money)?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

36. Ganged up with friends, and used force or intimidation to get money or things from people (taxing)?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

37. Been stopped by the police for questioning?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

38. Been arrested?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

If "Yes", what were you charged with?

---

39. Been expelled from school?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

Read each of the following questions and indicate the age you first did what is described.  
If you never did what is described, just write N/A and move on to the next question.

**How old were you when you first...**

Purposely damaged or destroyed property that did not belong to you? . . . . . \_\_\_\_\_

Stole something worth \$5.00 or less? . . . . . \_\_\_\_\_

Stole something worth between \$5.00 and \$50.00? . . . . . \_\_\_\_\_

Stole something worth more than \$50.00? . . . . . \_\_\_\_\_

Purposely set fire to a building, car, or other property? . . . . . \_\_\_\_\_

Attacked someone with the idea of seriously hurting them? . . . . . \_\_\_\_\_

Got involved in a gang fight? . . . . . \_\_\_\_\_

Broke into a vehicle or building to steal something? . . . . . \_\_\_\_\_

Used force or strong arm methods to get money or things from strangers? . . . . . \_\_\_\_\_

Sold drugs such as marijuana, hashish, heroin, cocaine, LSD? . . . . . \_\_\_\_\_

The next questions ask about your use of alcohol, drugs, and other substances. As you did before, first indicate whether or not you have ever done what is asked. Next, indicate how many times you have done the behaviour in the last year.

**Have you ever...? (If Yes, please indicate how many times in the *last year*.)**

1. Used alcoholic beverages (beer, wine, liquor)?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

2. Used marijuana, or hashish (mari, weed, grass, pot, hash)?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

3. Used hallucinogens (LSD, acid, mescaline, peyote, magic mushrooms)?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

4. Used amphetamines (uppers, speed, pep pills, bennies, dexies, diet pills) that were not prescribed by a doctor?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

5. Used barbiturates (downers, reds, yellows, blues, rainbows, goof balls, sleeping pills) that were not prescribed by a doctor?

YES _____	Number of times in the last year _____	NO _____
-----------	----------------------------------------	----------

6. During the past year, have you used tobacco?

Yes \_\_\_\_\_ No \_\_\_\_\_

7. When using tobacco, how much do you usually use?

\_\_\_\_\_ cigarettes a day                      OR                      \_\_\_\_\_ cigarettes per month

8. Have you ever used any other drugs? If so, please specify the drug, and the number of times last year.

Name of drug	Number of times in the last year

9. How old were you when you first tried (if you have never tried these substances, move on to the next page)

Alcohol? \_\_\_\_\_

Marijuana? \_\_\_\_\_

Other drugs? \_\_\_\_\_

10. If you drink alcohol, how many drinks do you typically have at one given time?  
(one drink = 1 beer OR 1 glass of wine OR 1 ounce of liquor)

\_\_\_\_\_ drinks

## INVENTORY OF DRUG TAKING SITUATIONS

Listed below are a number of situations or events in which some people use alcohol or drugs. Read each item carefully, and answer in terms of your own use over the **PAST YEAR**. Circle the number which corresponds to your choice.

Please indicate whether or not you have used drugs or alcohol over the past year

YES, I have \_\_\_\_\_ NO, I have not \_\_\_\_\_

If you have not used drugs or alcohol in the past year, skip to the next questionnaire.

Use the following scale to indicate your answer:

0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Frequently, 4 = Almost Always

I used \_\_\_\_\_  
(tell us which substance you are thinking about; e.g. alcohol, marijuana...)

1. When I was depressed about things in general.	0	1	2	3	4
2. When I felt shaky, sick, or nauseous.	0	1	2	3	4
3. When I was happy.	0	1	2	3	4
4. When I felt there was nowhere left to turn.	0	1	2	3	4
5. When I wanted to see whether I could use these drugs/alcohol in moderation.	0	1	2	3	4
6. When I was in a place where I had used or bought these drugs/alcohol before.	0	1	2	3	4
7. When I felt uneasy in the presence of someone.	0	1	2	3	4
8. When I was invited to someone's home and felt awkward about refusing when they offered me these drugs/alcohol.	0	1	2	3	4
9. When I met some old friends and we wanted to have a good time.	0	1	2	3	4
10. When I was unable to express my feelings to someone.	0	1	2	3	4
11. When I felt I had let myself down.	0	1	2	3	4

Remember the question is: I used \_\_\_\_\_

The scale is: 0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Frequently, 4 = Almost Always

12. When I had trouble sleeping.	0	1	2	3	4
13. When I felt confident and relaxed.	0	1	2	3	4
14. When I was bored.	0	1	2	3	4
15. When I wanted to prove to myself that these drugs/alcohol were not a problem for me.	0	1	2	3	4
16. When I unexpectedly found some of these drugs/alcohol or happened to see something that reminded me of these drugs/alcohol.	0	1	2	3	4
17. When other people rejected me or didn't seem to like me.	0	1	2	3	4
18. When I was out with friends and they kept suggesting we go somewhere and use these drugs/alcohol.	0	1	2	3	4
19. When I was with an intimate partner, and we wanted to feel even closer	0	1	2	3	4
20. When other people treated me unfairly or interfered with my plans.	0	1	2	3	4
21. When I was lonely.	0	1	2	3	4
22. When I wanted to stay awake, be more alert, or be more energetic.	0	1	2	3	4
23. When I felt excited about something.	0	1	2	3	4
24. When I felt anxious or tense about something.	0	1	2	3	4
25. When I wanted to find out whether I could use these drugs/alcohol occasionally without getting hooked.	0	1	2	3	4
26. When I had been drinking and thought about using these drugs/alcohol.	0	1	2	3	4
27. When I felt that my family was putting a lot of pressure on me or that I couldn't measure up to their expectations.	0	1	2	3	4



Remember the question is: I used \_\_\_\_\_

The scale is: 0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Frequently, 4 = Almost Always

28. When others in the same room were using these drugs/alcohol and I felt that they expected me to join in.	0	1	2	3	4
29. When I was with friends and wanted to increase my enjoyment.	0	1	2	3	4
30. When I was not getting along well with others at school or at work.	0	1	2	3	4
31. When I started to feel guilty about something.	0	1	2	3	4
32. When I wanted to lose weight.	0	1	2	3	4
33. When I was feeling content with my life.	0	1	2	3	4
34. When I felt overwhelmed and wanted to escape.	0	1	2	3	4
35. When I wanted to test out whether I could be with drug/alcohol-using friends without using these drugs/alcohol.	0	1	2	3	4
36. When I heard someone talking about their past experiences with these drugs/alcohol.	0	1	2	3	4
37. When there were fights at home.	0	1	2	3	4
38. When I was pressured to use these drugs/alcohol and felt that I couldn't refuse.	0	1	2	3	4
39. When I wanted to celebrate with a friend.	0	1	2	3	4
40. When someone was dissatisfied with my work or I felt pressure at school or on the job.	0	1	2	3	4
41. When I was angry at the way things had turned out.	0	1	2	3	4
42. When I had a headache or was in physical pain.	0	1	2	3	4
43. When I remembered something good had happened.	0	1	2	3	4

Remember the question is: I used \_\_\_\_\_

The scale is: 0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Frequently, 4 = Almost Always

44. When I felt confused about what I should do.	0	1	2	3	4
45. When I wanted to test out whether I could be in places where these drugs/alcohol were being used without using any.	0	1	2	3	4
46. When I began to think about how good a rush or a high had felt.	0	1	2	3	4
47. When I felt that I needed courage to face up to someone.	0	1	2	3	4
48. When I was with a group of people and everyone was using these drugs/alcohol.	0	1	2	3	4
49. When I was having a good time and wanted to increase my sexual enjoyment.	0	1	2	3	4
50. When I felt that someone was trying to control me and I wanted to feel more independent.	0	1	2	3	4

## ADOLESCENT SEXUALITY SCALE

The following questions ask about your sexual behaviour and attitudes.  
Remember **ALL YOUR ANSWERS ARE CONFIDENTIAL.**

1. Are you currently in a steady romantic relationship?

YES \_\_\_\_\_ NO \_\_\_\_\_

2. If so, how long have you been in this relationship? \_\_\_\_\_

3. Have you ever had sexual intercourse?

YES \_\_\_\_\_ NO \_\_\_\_\_

**If YES, please answer the following questions. If NO, continue with number 13 on page 16.**

4. How old were you when you first had sexual intercourse?

\_\_\_\_\_ years old

5. Are you currently sexually active?

YES \_\_\_\_\_ NO \_\_\_\_\_

6. How many times in the last 6 months have you had sexual intercourse?

Number of times: \_\_\_\_\_

7. How many sexual partners have you had in your lifetime?

Number of partners: \_\_\_\_\_

8. Have you ever had sexual intercourse with someone you just met, without really getting to know them?

YES \_\_\_\_\_ NO \_\_\_\_\_

9. Do you use birth control?

YES \_\_\_\_\_ NO \_\_\_\_\_

If yes, what do you use? \_\_\_\_\_

10. When you think about having sex with a new partner, how often do you ask about:

- a) previous sexual partners?
- b) intravenous drug use?
- c) homosexual or bisexual experiences?

Never	Sometimes	Always
1	2	3
1	2	3
1	2	3

11. When you are planning to have sex with a new partner, how often do you discuss:

- a) condom use?
- b) whether he/she has been tested for AIDS?
- c) previous history of sexually transmitted diseases?

Never	Sometimes	Always
1	2	3
1	2	3
1	2	3

12a). When you have sexual intercourse with a **new or casual partner**, how often do you use a condom?

12b). When you have sexual intercourse with a **regular partner**, how often do you use a condom?

Never	Sometimes	Always
1	2	3
1	2	3

**For the following questions, please indicate how often the statement is true for you. If you have never had sexual intercourse, just answer what you think you would do in the situations described.**

<b>Circle the number which corresponds to your choice.</b>	<b>Never True</b>	<b>Sometimes True</b>	<b>Always True</b>
13. I usually leave it up to my partner to decide whether we will use protection when we have sex.	1	2	3
14. I think ahead, and carry a condom when I think I am going to have sex.	1	2	3
15. If someone really loves you, you don't need to protect yourself: they will tell you if they are infected.	1	2	3
16. If my partner doesn't want to use protection, I will have sex anyway.	1	2	3
17. A person who won't use protection is not worth sleeping with.	1	2	3
18. It is important to protect yourself against sexually transmitted diseases even if you have been in a steady relationship for several months.	1	2	3
19. I am more concerned about how my partner feels than about using protection.	1	2	3
20. The chances of me getting a sexually transmitted disease are pretty slim.	1	2	3
21. I don't need to worry about protection; I know my partner is faithful.	1	2	3
22. It is unlikely that the person I have sex with would have a sexually transmitted disease.	1	2	3
23. I'm a pretty good judge of character, so I can tell if someone can be trusted.	1	2	3
24. If I am going to have sex, I insist that a condom be used.	1	2	3

## **Comments and Suggestions**

The questions we have asked you over the last few weeks (about family, friends, rules, drugs, alcohol, and sex) may remind you of concerns you have about these issues. There are a variety of people at your school who are available if you wish to discuss any of these issues. They include Dr. Gardner (the school psychologist), Mrs. Shari Eisenberg (the school social worker), Mr. Fung-A-Ling and Mrs. Darbyson (guidance counsellors), and Peer Helpers (other students you can talk to).

Please indicate below if you would like to talk with someone about your concerns. (If you say yes, Dr. Gardner will arrange it for you.)

- Yes, I would like to talk to Dr. Gardner.
- Yes, I would like to talk to a peer counsellor.
- No, I don't need to talk.

**If you have any comments or concerns about the Relationships and Behaviour project, please let us know by mentioning them below, or by speaking to one of us at the end of the session. We appreciate your feedback!**

Please turn your paper over when you are finished.

**THANKS FOR YOUR HELP!**

## Appendix C: Correlation matrices for path models

Table 1

Correlation matrix for the coercion model predicting to delinquency and substance use.

Variable	1	2	3	4	5	6	7	8
1. Social desirability	1.00							
2. Delinquent Peer Group	-.16	1.00						
3. Hostile Punishment	-.15	.12	1.00					
4. Monitoring	.17	-.17	-.18	1.00				
5. Coercive with mom	-.22	.07	.53	-.17	1.00			
6. Coercive with dad	-.10	.02	.46	-.14	.37	1.00		
7. Delinquency	-.29	.40	.30	-.38	.20	.20	1.00	
8. Substance use	-.19	.35	.28	-.21	.24	.20	.59	1.00

Note. n = 575. Standard deviations: Social desirability: 1.64, Delinquent Peer Group: 1.88, Hostile Punishment: .42,

Monitoring: .48, Coercive with mom: .33, Coercive with dad: .35, Delinquency: 1.04, Substance use: 1.36.



Table 2

Correlation matrix for the coercion model predicting to risky sexual behaviour.

Variable	1	2	3	4	5	6	7
1. Social desirability	1.00						
2. Hostile punishment	-.06	1.00					
3. Monitoring	.17	-.19	1.00				
4. Coercive with mom	-.19	.53	-.13	1.00			
5. Coercive with dad	-.16	.42	-.12	.26	1.00		
6. Sexually risky peer group	-.04	.14	-.20	.03	-.01	1.00	
7. Sexual risk index	.01	.28	-.32	.15	.14	.22	1.00

Note. n = 124. Standard deviations: Social desirability: 1.47, Hostile punishment: .42, Monitoring: .49, Coercive

with mom: .35, Coercive with dad: .37, Sexually risky peer group: 15.79, Sexual risk index: 4.77.

Table 3

Correlation matrix for the latent model of insecure attachment with mother and father.

Variable	1	2	3	4	5	6
1. Secure with mom	1.00					
2. Secure with dad	.37	1.00				
3. Dismissing with mom	.42	.10	1.00			
4. Dismissing with dad	.20	.45	.47	1.00		
5. Fearful with mom	.40	.17	.28	.18	1.00	
6. Fearful with dad	.15	.43	.07	.33	.43	1.00

Note. n = 502. Standard deviations: Secure with mom: .53, Secure with dad: .55, Dismissing with

mom: 1.88, Dismissing with dad: 1.94, Fearful with mom: .28, Fearful with dad: .30.

Table 4

Correlation matrix for the combined model.

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Social desirability	1.00										
2. Insecure with mom	-.08	1.00									
3. Insecure with dad	-.03	.40	1.00								
4. Hostile punishment	-.14	.32	.30	1.00							
5. Monitoring	.17	-.30	-.20	-.18	1.00						
6. Coercive with mom	-.22	.41	.22	.53	-.17	1.00					
7. Coercive with dad	-.10	.14	.42	.46	-.14	.37	1.00				
8. Delinquent peer group	-.16	.06	.08	.11	-.17	.07	.02	1.00			
9. Angry confrontation	-.22	.06	.05	.20	.04	.17	.19	.05	1.00		
10. Delinquency	-.29	.19	.20	.30	-.38	.20	.20	.40	.22	1.00	
11. Substance use	-.18	.16	.18	.28	-.21	.24	.20	.35	.25	.59	1.00

Note. n = 502. Standard deviations: Social desirability: 1.64, Insecure with mom: .75, Insecure with dad: .76, Hostile punishment: .42,

Monitoring: .48, Coercive with mom: .33, Coercive with dad: .35, Delinquent peer group: 1.89, Angry confrontation: .53, Delinquency: 1.04,

Substance use: 1.36.