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CHILD MALTREATMENT AND NEGATIVE AFFECT STATES: IMPACT ON COGNITION AND DATING VIOLENCE BEHAVIOURS

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CHILD MALTREATMENT AND NEGATIVE AFFECT STATES: IMPACT ON
COGNITION AND DATING VIOLENCE BEHAVIOURS

(Spine Title: Child Maltreatment and Negative Affect States)

(Thesis format: Monograph)

by

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Graduate Program in Education

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Education

The School of Graduate and Postdoctoral Studies
The University of Western Ontario
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THE UNIVERSITY OF WESTERN ONTARIO
SCHOOL OF GRADUATE AND POSTDOCTORAL STUDIES

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Child Maltreatment and Negative Affect States: Impact on Cognition and Dating Violence Behaviours

is accepted in partial fulfilment of the
requirements for the degree of
Master of Education

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ABSTRACT

Maltreated youth are at an increased risk for involvement in aggressive and potentially violent interpersonal relationships, in part due to their limited behavioural and emotion management skills. This study of maltreated adolescents ($N = 238$; 59.7% female; $M_{age} = 16.41$, $SD_{age} = 1.02$) involved with child protective services (CPS) examined whether: (a) youth have clinical levels of negative affect; (b) the association between adolescent negative affect and adolescent impaired thinking is significant; and (c) there is a link between negative affect, impaired thinking, and engagement in adolescent dating violence. Results showed that maltreated youth reported higher levels of negative affect on the overall psychological symptoms, as well as symptom-specific areas (e.g., trauma, anger), as compared to normative samples. Using an overall negative affect index, few significant associations were found. Negative affect was significantly associated with emotional, physical and sexual abuse ($r > .20$, $p < .01$), dating violence victimization ($r > .25$, $p < .01$), dating violence perpetration ($r > .25$, $p < .05$) for both males and females. Significant associations between a measure of verbal fluency and maltreatment were limited and varied by gender.

Keywords: negative affect, childhood maltreatment, verbal fluency, dating violence

ACKNOWLEDGEMENTS

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There has been an increase in developmental research exploring the essential

components of a child's successful development. It is acknowledged that most

development occurs in the context of relationships – from early caregivers, to peers and

teachers in school, to dating partners in adolescence. The family is considered the

fundamental relational context that influences the nature of the emotional experiences

across development (e.g., Morris, Silk, Steinberg, Myers, & Robinson, 2007). Given the

relative importance of family to an individual's socio-emotional development, it has been

advanced that maltreatment is a fundamental relationship insult, as well as an indicator of

relationship dysfunction (Cicchetti, Lynch, Shonk, & Manly, 1992). Adolescence is a key

socialization time point as it marks transition in schooling (to high school), personal

development (driving, working), and peer development (intimate peerships, partnerships,

and group affiliations organized around identity). For the first time, the developmental

task is to independently forge and navigate intimate relationships, which may include the

youth's emergent sexuality. Of particular concern are maltreated youth who are at-risk

for developing emotion regulation problems. For maltreated youth, where caregiver-child

relationships reflected power abuse, there is the potential for an abuse of power dynamics

within a dating relationship (e.g., victim and victimizer role, as opposed to egalitarian,

negotiated roles). Harm to the victim could be the result of aggression that is

psychological (e.g., name-calling, threats), physical (e.g., kicking, hitting, punching), or

sexual (e.g., non-consensual sex, unwanted touching; Wekerle, & Wolfe, 1999). It has

been found, thus far, in adolescent dating relationships that violence tends to be mutually

reciprocating between partners, rather than a dominant, male batterer as seen in women's

shelters, suggesting relational vulnerability may be expressed in both the victim and perpetrator roles (Wekerle, & Wolfe, 1999).

Emotion regulation is a term which captures the individual's capacity in effectively utilizing emotional information to support the regulation of behavioural responses to the social environment. Thompson (1994) defines emotion regulation as "internal and external processes involved in initiating, maintaining, and modulating the occurrence, intensity, and expression of emotions" (p. 26) in three ways: (1) observational learning of conflict resolution (e.g., problem solving); (2) parenting practices in how emotions are responded to (e.g., how parents react to the child when he/she is upset) and the socialization of emotion; and (3) the emotional climate of the family (e.g., whether the predominant emotion evident in the home environment is positive or negative). When parents are violent towards their child or each other, the salience of emotions may be heightened as key information to attend to and process in the environment, and may come to define strongly the child's understanding of relating to others and expectations for close relationships. Considering the implication of experiencing or witnessing family violence to emotion regulation development, it would be expected that the maltreated child would be challenged to interact with others consistently in non-violent ways, since violence has been modeled as a means of solving problems (Wekerle et al., 2009) and emotional expression is limited with an over-emphasis on negative affect (e.g., fear, anxiety, anger, rage; Shaffer, Yates, & Egeland, 2009). Since emotionality may not be in conscious awareness (Teisl, & Cicchetti, 2008), and emotion regulation involves internal processes, implicit means of assessing emotion regulation may be fruitful in studying the behavioural patterns among maltreated youth.

To date, research has not considered implicit means of assessing emotionality and the connection between emotionality and adolescent relationship functioning among maltreated youth.

Childhood maltreatment traditionally spans four broad categories: physical, sexual, emotional abuse and neglect (which includes physical and emotional components). When maltreatment comes to the attention of child protective services (CPS), the abuse and/or neglect has a caregiver element, either as the perpetrator or as a failure to protect the child. The Canadian Incidence Study of reported child abuse and neglect (CIS; Trocmé et al., 2003) reported the following prevalence rates for maltreatment: neglect (30%), exposure to domestic violence (28%), physical abuse (24%), emotional abuse (15%) and sexual abuse (3%). While these are primary categorizations of maltreatment, among CPS cases, often children have been the victims of more than one type of maltreatment. The CIS found that 19% of substantiated reports involved more than one type of maltreatment (Trocmé et al., 2003).

When considering the unstable, aversive, and chaotic climate in which a maltreated child often lives, with higher unsafe housing, poverty, caregiver mental health issues (e.g., Leschied, Chiodo, Whitehead, & Hurley, 2005; Wekerle, Wall, Leung, & Trocmé, 2007), in addition to the direct experience of maltreatment, the likelihood of emotional and behavioural problems across development is elevated (e.g., Gilbert et al., 2009). For an adolescent in the CPS system, maltreatment though is historical. As such, there are other mechanisms by which maltreatment experiences may continue to exert a negative impact on development. One key area is in terms of how it impacts the emotional life of the child and how, in turn, that may impact the relationship quality and

features of close relationships, such as dating in adolescence. This research will consider the socio-emotional connection among maltreated adolescents by exploring the childhood maltreatment – adolescent dating association in terms of the youths' proximal emotional regulation that taps implicitly their salient affective orientation, whether it is dominantly negative or positive. First, the theoretical components and empirical support underlying emotion dysregulation will be introduced; then, the connections between maltreatment and emotion dysregulation, and maltreatment, adolescent dating violence, and emotion regulation will be considered. Theories that inform on the issue of emotion dysregulation and its impact on behavioural functioning are: (1) differential emotions theory and (2) dynamic skill theory which can be fruitfully co-considered and applied to a salient adolescent relationship context – dating – and specifically, may be utilized in understanding adolescent dating violence.

Emotion Dysregulation

According to a developmental psychopathology perspective, emotion dysregulation is a possible mechanism underlying behaviour problems (Shields, Cicchetti, & Ryan, 1994; Thompson, Flood, & Lundquist, 1995; Shields, & Cicchetti, 1998). Due to the fact that a child's mastery of developmental tasks (including balancing emotions) is thought to impact their ability to handle later developmental challenges, any shortcomings in achieving emotional equilibrium during the early years of life could make the child vulnerable to failure at later stages in development regarding their ability to control their behaviours (Cicchetti, & Toth, 1995; Shields, & Cicchetti, 1998).

As infants, maltreated children show early signs of fear and patterns of anger (Gaensbauer, 1980). Preschool aged children also show more negative, reactive and

irritable emotions than their non-maltreated peers (Erickson, Egeland, & Pianta, 1989). They also have difficulty displaying contextually appropriate affect (e.g., responding to the current situation in an appropriate manner; Shields et al., 1994; Main, & George, 1985). There also seem to be underlying deficits in emotional understanding, communication and recognition skills (Coster, Gersten, Beeghly, & Cicchetti, 1989; Beeghly, & Cicchetti, 1994; Casey, 1993; Casey, & Schlosser, 1994; Cook, Greenberg, & Kusche, 1994). For example, if maltreated toddlers and preschoolers fail to develop appropriate and adaptive emotion regulation skills, then the consequences for later intimate relationships need to be considered as the child moves forward in development with impaired emotionality.

Research has shown that maltreated children have elevated or sub-clinical problems with managing negative affect (Eisenberg et al., 2001; Cicchetti, Ackerman, & Izard, 1995). Maltreated children have been found to have a range of problems in managing negative affect, including depression, anxiety and anger (Cicchetti, & Lynch, 1993; Cicchetti, & Toth, 1995; DeBellis, 2001; Howes, & Eldredge, 1985; Wekerle, & Wolfe, 1999), as well as having higher rates of posttraumatic stress symptomatology, which can include such symptoms as dissociation, emotional numbing, and hyper-arousal (DeBellis, 2001). Personality researchers have considered negative affectivity a broad construct, comprised of such traits as aggression and dissociation (Casey, 1993; Carlson, Felleman, & Masters, 1983). Marchand, Wirth, and Simon (2005) studied children and adolescents ($N = 66$) aged 4-17 who had previously been diagnosed with a type of bipolar disorder. Within their sample, 73% of the patients had experienced at least one type of abuse, thereby suggesting that maltreatment impacts the maintenance of a steady mood.

Even when controlling for family history and current mood and symptoms, children who were exposed to emotional and physical maltreatment were more likely to be diagnosed with bipolar spectrum disorder (Neeren, Alloy, & Abramson, 2008).

An essential component of development is learning how to regulate emotional responses within the social context; normative socialization has as its goal, adaptive behavioural responding (Kopp, 1992; Morris, et al., 2007; Eisenberg, Spinrad, & Morris, 2002). In addition, emotion regulation consists of processes, both inherent and learned, that are responsible for observing, evaluating and adapting emotion reactions, in terms of directing attention to the environment and selecting or sustaining attention preferentially in accordance with one's emotional learning history, which would include information formed within a maltreating environment (Thompson, 1994). As children develop they begin to rely less on their parents (the probable source of the maltreatment) and begin to use other sources, such as peers, to aid in emotion regulation development (Thompson, 1994). Differential emotions theory (DET) suggests that both positive and negative affect influence a child's development (Schultz, Izard, & Bear, 2004).[1] Feeling loved, praised and recognized for accomplishments, wonder at discovery and other positive emotions are associated with higher levels of prosocial behaviours, whereas negative emotions may inhibit empathic and prosocial responding (Izard, 1991). Emotions theory also suggests that positive emotions facilitate aspects of cognitive and social-cognitive development, foster creativity (Izard, 1991), and information processing speed (e.g., children in happier moods process information more quickly than their peers; Carlson et al., 1983). Izard (1991) advances that continued exposure to a particular emotion may influence a child's

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[1] Schultz et al., (2004) use the terms emotion, affect and mood interchangeably

affective-cognitive structures. For example, if a child is primed to react negatively to events, through relative over-exposure to negative affect, the child is likely to expect that others will also react negatively. When the child is unable to determine the emotions expressed by his/her peers, as with an ambiguous emotional presentation, the child may attribute negative emotions to their peers statements and actions (e.g., negative bias; Schultz et al., 2004). Given that maltreated children are repeatedly exposed to negative emotions, DET would suggest that the child's affective-cognitive structures would be altered in such a way that their primary emotion for guiding behavioural responses would be a negative one. If this is the case, then it could be hypothesized that maltreated children will (a) have a higher negative affect load; and (b) display mood-congruent bias in behavioural responses (e.g., a tendency to react/respond in a way that is consistent with the individual's current mood). These hypotheses would be most effectively tested under a "demand" situation and in an implicit manner. Research to date has not examined the emotional valence of standard cognitive implicit tasks as applied to maltreated youth. This research will consider the relationship among maltreatment, negative affect implicitly measured, and relationship behaviour, specifically adolescent dating violence.

While negative affect has a clear connection with the maltreatment experience, positive emotions are less well examined. DET suggests that positive emotions facilitate adaptive development. Specifically positive emotions help children acquire emotional competence (e.g., happier children tend to engage others in friendly interactions). Children who experience high degrees of positive emotions also place themselves in situations where they will learn about expression, emotion cues, and behaviour (Schultz et al., 2004). Positive emotions also facilitate certain types of information processing.

Therefore in certain situations, children who experience greater range or more intense positive affect may learn more or better from their environments than would maltreated children (Schultz et al., 2004). Maltreated children typically do not experience uniformly negative affect from a caregiver, but rather a predominance of negative or more intense negative affect. The extent to which positive affect is part of the maltreating family is unclear, and it is likely to reflect a broader range than negative affect. In exploring the emotion regulation issues for maltreated youths, it is important to consider both negative and positive affect and how these may impact relationship behaviours, such as dating violence.

Maltreatment and Adolescent Dating Violence: Linkage via Emotion Dysregulation

Adolescent dating violence is a relatively recent research domain. Dating violence refers to psychological, physical, and/or sexual violence experienced by adolescents within the context of a dating relationship (Vezina, & Hebert, 2007; Wolfe, Wekerle, Reitzel-Jaffe, & Lefebvre, 1998; Wolfe, Scott, Wekerle, & Pittman, 2001). Dating violence perpetration and victimization prevalence rates are higher in maltreated populations than those who have not experienced prior maltreatment (Wekerle et al., 2001). Prevalence rates of dating violence in maltreated adolescent populations range from 9% to 33% (Wekerle, & Wolfe, 1999; Wolfe et al., 1998; Sears, Byers, Whelan, & Saint-Pierre, 2006). The prevalence rate differences between maltreated and non-maltreated adolescents raise serious concerns about the maladaptive consequences that maltreatment has on adolescent interpersonal development. Adolescents who are at high risk for failing to develop effective emotion regulation strategies may also be those who

are at high risk for involvement in violent dating relationships. One group of at-risk youth is those who have experienced maltreatment while growing up.

Dynamic skill theory allows for the understanding of the intersection between emotional and cognitive development in predicting behaviour (Ayoub et al., 2006). According to this theory, development involves an individual's construction of behavioural skills (e.g., an individual's activities and the context in which these activities occur). A skill therefore includes both the person and the environment in which the action takes place (Fischer, & Ayoub, 1994). Shipman and Zeman (2001) suggest that maltreated children demonstrate a negativity bias in their emotional development due to the fact that maltreated children display negative emotions sooner than peers (approximately 3-4 months of age for maltreated children and 7-9 months for non-maltreated; Sroufe, 1997) and tend to attribute negative intent to others as well. Cognitive skills are influenced greatly by emotions (Fischer, Knight, & Van Parys, 1993); individuals organize their world according to the emotions experienced. For example, young children (approximately 2-3 years old) split the world into good or bad, nice or mean. As these children develop, the separation between good and bad becomes smaller, and the two disparate views come to be integrated to form a single, more complete understanding of the emotional world and people in it (e.g., at approximately 6-7 years old). As the child develops he/she acquires new cognitive skills and with this a greater understanding of how good or bad, nice or mean can further be integrated (Ayoub et al., 2006). In normative development, integration of positive and negative aspects of the developing child's external experiences compliments their internal reality. However, in the case of maladaptive developmental contexts, like maltreatment, the internal and

external experiences may not come to be well synchronized and integrated, as that may not be adaptive for survival in the chronic maltreating family relational context.

As applied to maltreatment, children may feel that they have to keep events (e.g., maltreatment episode) and associated negative emotions (e.g., terror, shame, rage) separated, to avoid being overwhelmed by anxiety (Ayoub et al., 2006). When the maltreating environment is of high intensity or chronic, one might expect a high degree of reality-based anticipatory anxiety, which would challenge daily functioning. A child has to go to school, interact with neighbours, and adapt to environmental changes. It is an adaptive strategy that would allow a maltreated child to limit the amount of emotional and cognitive information to be processed, by separating emotion from behaviour, or selecting one category of emotion (e.g., negative affect) to primarily be attended to. As well, limiting the child's feelings of being overwhelmed and helpless may be achieved by reducing the emotion processing tasks, which would also likely increase the child's functionality in their day-to-day environments. With maltreatment, this fragmenting process may become "over-learned" and habitual. Thus, it may be more likely to be overgeneralized to other situations in the child's life, as with social interactions in other (non-maltreating) environments (Ayoub et al., 2006). Further, entry into adolescence marks an increase in development of self-functioning, including self-regulation and integration of emotion, cognitions, and behaviour.

Self-regulation is defined as learning to balance affective, behavioural and cognitive displays through internal control (Cicchetti et al., 1995). The ability to self-regulate can have a profound impact on an adolescent's level of functioning. Shields and Cicchetti (1998) suggest that factors such as distractibility and poor attention modulation

may foster the emotion dysregulation seen in maltreated children's emotional behaviour. The development of attentional skills enables a child to focus on tasks and peer situations and to persist at challenges, whereas impaired self-regulation has been associated with conduct and behaviour problems (Masten, & Coatsworth, 1998). Therefore, attention skills developed in maltreatment environments could produce a tendency for the child to be constantly surveying his/her environment (e.g., hypervigilance), which is adaptive for the child in terms of early detection of social threat cues. If the child is focusing too much attention to the social situation, he/she may be more prone to act aggressively because they are reading many potential sources of danger from their environment and may miss processing affectively and cognitively non-threaten related information, including positive affect. Research has shown that maltreated children (6-12 years old) tend to be hypervigilant to aggressive stimuli in their environments and are more likely to attribute hostile intent to ambiguous social situations (Shields, & Cicchetti, 1998; Dodge, Pettit, & Bates, 1990). These findings suggest that maltreated youth may feel an exaggerated need to protect and defend themselves from perceived social threats (Weiss, Dodge, Bates, & Pettit, 1992; Dodge et al., 1990; Rieder, & Cicchetti, 1989). Such challenges are expected to surface in relational issues, such as increased aggression, depression and lower ratings of self-esteem and peer confidence in adolescence (Shaffer et al., 2009).

A constant state of awareness of the potential threats within the environment may be a contributor to a negative affective load for the maltreated adolescent. These experiences, as explained through developmental traumatology theory, could lead the child to a chronic state of vulnerability (DeBellis, 2001). Symptoms of post-traumatic-stress disorder (PTSD; symptoms of which have been found in maltreated adolescent

populations – Wekerle et al., 2009) may potentially underlie harm to others (e.g., dating violence perpetration) and/or harm to self (dating violence victimization; Wekerle et al., 2009). These symptoms, which can include hyperarousal, hypervigilance, re-experiencing, avoidance and numbing may also disrupt cognitive functioning promoting self-care, including self-protection (Anda et al., 2006). The implication for adolescent dating relationships is that adolescents with PTSD symptoms are at risk for developing an inability to cope with and protect themselves from harm in interpersonal conflict. Anger may also be a factor that would impact an adolescent suffering from PTSD symptoms in a dating situation (Wolfe et al., 2001). Cole-Detke and Kobak (1998) studied the effects of disorganized behaviour on interpersonal difficulties and found that experiences of abuse leave victims susceptible to lapses in organized behaviour patterns. These lapses include violence, frightening behaviour, depression, anxiety, and a tendency to distance oneself from interpersonal relationships. The tendency towards behavioural disorganization is thought to be most prominent in situations of high stress, where there would be lapses in self-regulation.

Control Factors: Child Cognitive Development, Childhood Maltreatment Severity, and Child Protective Services System Experiences

Considering cognitive development alone, maltreatment has been suggested as a risk factor for lower and delayed cognitive skill development (Alessandri, 1991). However researchers argue that maltreatment, in and of itself, may not be responsible for the delays, as maltreatment tends to be coupled with a multitude of other risk factors, such as poor nutrition, few learning opportunities in the home, low levels of verbal interaction and selective inattention that they learn to give to positive events (Ayoub et

al., 2006; Clemmons, Walsh, DiLillo, & Messman-Moore, 2007; Rossman, & Rosenberg, 1998). Maltreatment factors that research has found to be related to greater impairment include multiple forms of maltreatment, intrafamilial perpetration, frequency, duration, and the severity of the abuse itself (Clemmons et al., 2007).

Robert Agnew's (1992) general strain theory explains delinquency as a response to negative emotions enhanced by negative experiences and relationships (Hollist, Hughes, & Schaible, 2009). Even though general strain theory takes into consideration the early childhood experiences, as emphasized by developmental perspectives, it focuses primarily on proximal events as the primary cause of delinquency (Ireland, Smith, & Thornberry, 2002). Despite strong evidence linking maltreatment to delinquency, critics argue that studies of the relationship between maltreatment and delinquency have been skewed by an inability to utilize appropriate controls (Schwartz, Rendon, & Hsieh, 1994; Hollist et al., 2009). Controls such as family structure, individual attributes of the child (e.g., level of impulsivity) and characteristics of the family unit (e.g., parental income, levels of parental monitoring and supervision) are only some of the factors that need to be considered to fully understand the relationship between maltreatment and delinquency. Hollist et al. (2009) found that maltreatment continued to significantly influence delinquent behaviours even after controlling for negative emotions and both family and individual characteristics, thereby suggesting that negative affect, such as anger, anxiety and depression, are not the only mechanism through which adolescent maltreatment contributes to delinquent behaviours. Even more surprising was that the direct effects of negative affect were equal to, if not more consequential to delinquency than the direct

effect of maltreatment, suggesting that negative emotions stemming from strains other than maltreatment warrant further investigation (Hollist et al., 2009).

Some researchers suggest that the connection between maltreatment and cognitive deficits exists due to environmental factors, such as poverty, parental psychopathology, and parental unemployment (Cicchetti, & Lynch, 1993), which, individually, are associated with lower levels of cognitive development (Vig, 1996). Researchers suggest that a reason for unclear distinctions between maltreated and non-maltreated children on cognitive skills is due in part to insufficient group matching based on background factors. With CPS youth, there are the added dimensions of variation in system "turbulence" in terms of the number of years involved, the number of caseworkers, caregivers, residences and school changes that need to be considered to isolate the impact of the maltreatment experience. For example, the psychological distress of maltreatment can be buffered if the youth perceives him/herself to be in a safe place (Wekerle et al., 2008). Further, the cognitive and affective dimensions need to be considered to more fully understand impacts on social functioning.

It has been suggested that the degree to which maltreatment effects cognitive development depends on several severity factors of the maltreatment experiences. Factors which are linked to poorer outcomes include early age of maltreatment onset (e.g., infancy to early school age), multiple episodes of maltreatment (e.g., chronic maltreatment versus single episodes), specific characteristics of the maltreatment (e.g., the use of violence or threats), and the relationship to the perpetrator (e.g., parent versus stranger; Ayoub et al., 2006). Some cognitive differences have emerged by types of maltreatment. For example, emotionally and physically maltreated children performed

lower than non-maltreated on tasks of integrating nice and mean stories (Ayoub et al., 2006). Neglected children also performed lower than nonmaltreated children. The research base is limited to date in evaluating the cognitive-affective implications of particular types of maltreatment. Physically abused children have shown high levels of anger and aggression when faced with potentially threatening situations (e.g., interpersonal conflict; Hennessy, Rabideau, Cicchetti, & Cummings, 1994). Emotional maltreatment has been associated with low self-esteem, feelings of depression and anxiety (Ney, Fung, & Wickett, 1994; Shaffer et al., 2009). Depending on the type of maltreatment experiences, children may experience different outcomes. Research on emotional abuse has shown that children who are exposed early in their childhood are influenced in their ability to function successfully. Egeland, Sroufe, and Erikson (1983) observed toddlers who had been emotionally abused and found that the toddlers showed increased anger, and poor impulse control, whereas toddlers who experienced emotional neglect showed low self-esteem, dependence on teachers and noncompliance. Results also showed that maltreated children had higher rates of depression than nonmaltreated comparisons. These results highlight how vulnerable all children are to the negative effects of the maltreatment experience.

Many researchers have agreed that emotional abuse experienced in early childhood contributes to increased anger and aggressiveness as well as to lower self-esteem in later developing years (Herrenkohl, Herrenkohl, Egolf, & Wu, 1991; Johnson et al., 2001; Shaffer et al., 2009). Due to a lack of adaptive behavioural responses available to the maltreated child, he/she may learn that violence is an acceptable means of emotional expression and managing conflict (Shields, & Cicchetti, 1998). Combined with

a lack of empathy for others, these children may have difficulties inhibiting their aggressive responses to others (Howes, & Eldredge, 1985; Zahn-Waxler, Cole, Welsh, & Fox, 1995). Also, these aggressive children are more likely to show poor frustration tolerance, affective intensity and angry reactivity (Eisenberg, Fabes, Nyman, Bernzweig, & Pinuelas, 1994; Shields, & Cicchetti, 1998; Lemerise, & Dodge, 1993). With limited behavioural and emotion management skills, maltreated youth are at a greater risk for involvement in aggressive and potentially violent interpersonal relationships.

Beyond the impact of the abuse itself, other maladaptive strategies are found within maltreated children. In particular, youth who experience maltreatment may also experience an accelerated push toward dating (Wekerle, & Wolfe, 1999). This is suggested in a study by Wekerle and Wolfe (1996), which surveyed a sample ($N = 76$) of adolescents receiving child protective services due to prior maltreatment. The authors found that 90% of this sample had begun dating in early adolescence, and that over half of the girls had experienced some form of physical or sexual violence. Perhaps entering into romantic relationships at such a young age (between the ages of 14 and 16) and without proper preparation (e.g., learned adaptive relational strategies), places maltreated youth in a developmentally dangerous position.

To date, research has not considered the cognitive-emotional underpinnings of adolescent dating violence among maltreated youths such that (a) individual differences in cognitive functioning are taken into account and (b) there is an implicit measurement of emotion dysregulation within a demanding cognitive task. This research will apply a novel emotion coding to a standard cognitive task, the Controlled Oral Word Association Task (COWAT), a type of verbal fluency test.

Verbal Fluency

It is well established that verbal strength, such as a broad vocabulary, is an index of overall cognitive functioning (Loonstra, Tarlow, & Sellers, 2001). One element of verbal ability is the extent to which a person can access words to describe their feelings, thoughts, and experiences. Verbal expression of emotions and verbal problem solving are fundamental elements in relationship functioning. The verbal fluency task requires sufficient knowledge of words, the connotation of words, the connection among words, and the ability to appropriately speak and articulate the words such that the subtler informational cues are evident to the interactant. The COWAT is a standard neuropsychological assessment of an individual's verbal fluency, or ability to generate words at a rapid pace. This test taps the word knowledge store as well as the word–to-category matching and word retrieval abilities. Verbal fluency testing is often used to compare cognitively impaired individuals with normal controls (Loonstra et al., 2001). The extent to which maltreatment affects an individual's performance on verbal fluency tests may highlight one element of the impact of maltreatment in regards to a child's communicative abilities. Normative samples of adolescents ($N = 62$) produce an average oral production rate of 42.17 ($SD = 6.82$) words for males and 41.46 ($SD = 6.71$) for females (on the initial letter word task, with letters "F", "A", and "S"; Yeudall, Fromm, Reddon, & Stefanyk, 1986). Retest reliability for the F, A, S task is satisfactory, ranging from .67 to .88 (Baron, 2004). Maltreated children show lower verbal functioning than their non-exposed peers (Ybarra, Wilkens, & Lieberman, 2007), even after controlling for SES (Huth-Bocks, Levendosky, & Semel, 2001). These results can be seen in children as young as 3 to 5 years old (Huth-Bocks et al., 2001). If these youth were exposed to

maltreatment early in their lives, then they are at risk for significant delays in their ability to communicate and express their emotions (Beeghly, & Cicchetti, 1994). Coupled with delays in emotion regulation, adolescents who experience difficulties expressing emotion can face many challenges in successfully navigating through an intimate relationship (Eigsti, & Cicchetti, 2004).

This study aims to provide an exploratory investigation of the socio-emotional-cognitive links in a group of CPS adolescents. Prior research on the Maltreatment and Adolescent Pathways (MAP) dataset indicates that the youth involved produce lower rates of verbal responses and higher rates of ineligible responses (Cook et al., 2009). Specifically, this study examines whether the experience of severe maltreatment influences the youth cognitively, affectively and behaviourally. The aim is to assess whether or not these youth experience levels of negative affect (e.g., depression, anxiety, PTSD symptomatology) reflective of a high negative affective load, as compared to established cut-offs. If high levels of negative affect exist within these adolescents, this study will explore the impact of distress on the youths' on-line cognitive functioning in terms of task performance. Specifically maltreated youths' ability to perform on a verbal fluency task and how this is associated with their involvement in violent dating relationships will be considered. Given the distractibility or overload potential of negative emotions among maltreated youth to impact cognitive functioning and, hence, behaviour, this study will look at the emotional valence of words on the verbal fluency task as one means to assess whether there is an affective bias (e.g., high negative affective connotation of words versus high positive connotation of words). This study will consider whether youth who have elevations on negative affect also show a negative

affect bias in word production on the verbal fluency task. Further, this study will examine the extent to which negative affect and negative affect word biases are associated with dating violence behaviours. If the conditions set by Baron and Kenny (1986) are met for meditational analysis, then this study will consider whether verbal fluency production rates serve as a mediator of dating violence behaviours[2].

Proposed Theoretical Model

Maltreatment is expected to be positively correlated with emotional dysregulation over time (e.g., those with higher levels of maltreatment will also report higher levels of negative affect; see Figure 1 for a theoretical diagram). According to DET maltreatment is also expected to be positively correlated to dating violence and cognitive skill deficiencies. Dynamic skill theory accounts for the expectation that cognitive delays and clinical levels of distress will result in a positive correlation with dating violence.
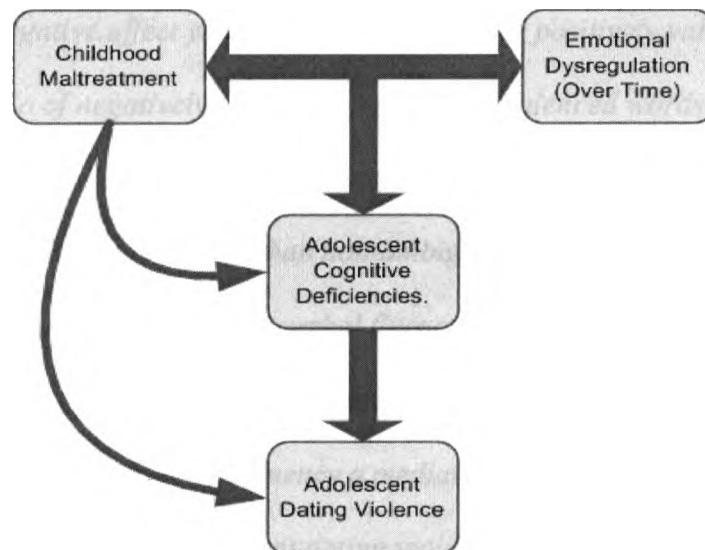
Fig. 1: Diagram of Proposed Theoretical Model

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[2] According to Baron and Kenny (1986), mediation is most optimally tested when various pre-conditions exist. These are:
  I. The predictor must be significantly associated with the hypothesized mediator.
  II. The predictor must be significantly associated with the dependent measure.
  III. The mediator must be significantly associated with the dependent variable.

The research questions are:

(1)   *Do CPS involved adolescents show greater levels of negative affect than established norms? Specifically do maltreated youth have higher negative affect levels compared to the established norms?*

(2)   *Does an association exist between experiences of severe maltreatment and clinical levels of negative affect?*

(3)   *Do maltreated youth who have high levels of negative affect show poor cognitive performance on the verbal fluency task, as compared to norms? Specifically, do high negative affect youth have higher illegitimate responses (suggesting that inhibition and/or vigilance problems exist)? When we consider the affective coding of the verbal fluency, do we find evidence of greater mood-congruent bias in cognition (e.g., more negatively valenced words among the high negative affect youths? Does this hold for positively valenced words, and the ratio of negatively valenced to positively valenced words?)? Is there evidence of mood-impairing processing, in higher rates of (a) ineligible words and (b) ambiguous codes than non-ambiguous codes?*

(4)   *Does higher negative affective verbal fluency explain, in part, negative relational behaviours, such as dating violence victimization or perpetration? That is, is negative affective verbal fluency a mediator in the relationship among child maltreatment and adolescent dating violence?*

It is expected that youths with higher maltreatment severity will show higher level of depression, anxiety and anger as compared to normative samples. In those adolescents who show high levels of negative affect we can expect to find that these youth will also

show poor cognitive performance on the verbal fluency task. These adolescents will show evidence of mood-congruent bias, such that those youths who show high levels of clinical distress will produce more negative emotion words than positive emotion words. High negative affect youth will also report higher levels of dating violence behaviours.

Method

The Maltreatment and Adolescent Pathways (MAP) Project Overview

The data for this study was taken from the Maltreatment and Adolescent

Pathways (MAP) project, an on-going longitudinal study that tracks randomly selected

mid-adolescents from the active caseloads within CPS in a large urban Canadian centre

across two years. A third-year follow-up assessment that focuses on the transition to

adulthood is funded for part of the sample. The MAP CPS partners provide a 95%

catchment of the CPS traffic in this city. The MAP tests youth initially, and every 6

months, continuing if the youth become no longer involved with the CPS. MAP youth are

first approached about a research opportunity by their caseworker using a standard script.

If interested, the worker faxes a recruit form with youth contact information (confidential,

in secured office). The MAP research team staff then contacts the youth, explains the

study (standard script), and books for consent signing and initial data collection. Youth

sign their own consent to participate if 16 years or older; youth under age 16 have their

legal guardians sign consent. Youth and their guardians (as appropriate) receive copies of

their signed consents, which highlights limits to confidentiality, and provides contact

information for the Principal Investigator (C. Wekerle) and the ethics office (for a copy

of consent forms, see Appendix A). The MAP has been approved by The University of

Western Ontario research ethics board (REB) who administered the study from 2004-

2009, The Centre for Addiction and Mental Health (CAMH) where MAP Research

offices are held, as well as other REBs of co-investigators and collaborators, and from

participating CPS agencies (for UWO REB letter, see Appendix B; note the MAP study

is currently hosted by McMaster University, 2009-present, and consents in current use have the McMaster information).

Anyone involved with the MAP study, including testers and researchers, sign a confidentiality agreement with each individual CPS. All MAP data is anonymized and the MAP database is hosted in a secure on-line site within a provincial CPS association. An advisory board comprised of front-line workers, supervisors, quality assurance managers, and researchers within the three participating CPS agencies and the MAP team guides the MAP project. This board reviews all questionnaires and tasks, the progress of the MAP study, and knowledge translation (KT) activities. Participating CPS' receive honoraria for referring specific numbers of eligible youth (e.g., not consenting) in their agency to the study. The MAP consent form was developed in collaboration with CPS agency lawyers and the MAP advisory board, as were mandatory testing and clinical follow-up protocols. MAP CPS liaisons are grant co-investigators or collaborators and included in all KT activities. The MAP provides a KT website to post MAP peer-reviewed conference presentations and articles, among other resources.

Participants

MAP overall study. The participants in the MAP study have been randomly selected from active CPS case files within a specified catchment area. Youth were determined to be ineligible for the study if they could not be located, were discharged from CPS care (e.g., case was open less than 6 months), had severe developmental delays or crisis psychological health issues (as determined by the youth caseworker) or were out of the age range at the point of contact with the research staff (Wekerle et al., 2009). The MAP study obtained a 70% recruitment rate.

At the point of initial testing, 538 adolescents, 52.9% female, were recruited for participation. At initial assessment, the mean age of MAP youth was 15.82 years ($SD = 1.28$), with no significant differences between genders. Living arrangements ranged from foster (37%) to group homes (27%), to biological parent (22%) and other accommodations (14%). The ethnicity of the youth was also recorded: 29% self-identified as Caucasian, 24% Black; 2% Aboriginal; and 12% "Other" (e.g., Asian, Hispanic etc.). Also, among these youth, 33% identified as being of mixed race, as biracial or multi-racial.

Present study MAP sample. For the purposes of the present study, a sample was selected that pertained to the time points of the measures of interest[3]: childhood maltreatment (6-month testing); verbal fluency performance (6-month testing); adolescent negative affect (6-months); and adolescent dating violence (6-month testing). The initial to 6-month retention rate was about 80%. Youth who were not retained were either non-locatable or chose to exit the study ($n = 116$).

The sample was further restricted such that responses were available on 75% or more of the items within an individual questionnaire. This resulted in 184 youth being excluded for missing data on questionnaires of interest or more than 25% of item responses within a questionnaire missing. The final n size for the present study is 238 (59.7% female), with a mean age of 16.41 ($SD = 1.02$) with no gender differences ($t = -.58$, *ns*). Most youth were in high school (83.3%), living with foster parents or in group homes (56.1%), and had begun dating (77.5%). The ethnicity breakdown follows the

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[3] The current sample was also checked against another maltreatment measure that addresses concurrent maltreatment for the adolescent. Based on the entire 6-month sample, less than 1% reported current maltreatment by an adult. Based on this low number, data was not eliminated on this basis.

same pattern as the initial time point: 27.6% self-identified as Caucasian, 23.1% Black; 1.5% Aboriginal; and 13.5% "Other" (e.g., Asian, Hispanic etc.) and 34.2% identified as being of mixed race, as biracial or multi-racial.

Measures

The MAP study administers a range of questionnaires and data procedures. For the purposes of the present study, the areas of interest are: childhood maltreatment; adolescent negative affect; cognitive skill deficiencies; and dating violence.

Childhood maltreatment: Childhood Trauma Questionnaire (CTQ; Bernstein et al., 2003). The Revised CTQ (CTQ-R) was used to measure the type of maltreatment the youth may have experienced during childhood (e.g., using the consistent stem "While growing up," mostly behaviourally-anchored items followed, such as "I got hit or beaten so badly that it was noticed by someone like a teacher, neighbour, or doctor"; see Appendix C). Items were answered on a 5-point scale ranging from *never true* to *very often true*. Statistical analysis of the questionnaire showed moderate levels of two-week test-retest reliability (physical $\alpha = .64$; sexual $\alpha = .52$; emotional $\alpha = .70$; and neglect $\alpha = .67$) and internal validity (physical $\alpha = .92$; sexual $\alpha = .88$; emotional $\alpha = .85$; and neglect $\alpha = .66$; Bernstein et al., 2003). Scale scores (physical abuse; sexual abuse; emotional abuse; physical neglect; and emotional neglect) and a total score were derived from the 6-month dataset. To tap the increased likelihood of CPS youth having more than one form of maltreatment, the CTQ-R total score will be used in the present study. To assess the contribution of each type of maltreatment, the CTQ-R scales were also used. The CTQ is a commercially available questionnaire and is the most utilized self-report of

maltreatment history in the literature. It was designed for a reading level of grade six (http://www.cps.nova.edu/~cpphelp/CTQ.html).

The CTQ-R can be approached as a continuous score for each of its scales, as well as a categorical variable using questionnaire author cut-offs, for mild, moderate, and severe levels of maltreatment. In this study, we aimed to consider more severe levels of maltreatment, given the context of the current sample of all youth being CPS involved. Thus, we considered the moderate-severe categorizations as severe. While other factors in the literature could be used to operationalize severity, these proved to be requiring greater preliminary work, ideally with another sample to determine their validity. For example, while earlier maltreatment (prior to school entry) is considered severe, given the physical vulnerability and greater dependency at this stage of development, other developmental periods may mark high severity for specific types of maltreatment based on psychological "weight" (e.g., sexual abuse in adolescence when romantic relationships is a stage-salient task). Accordingly, we operationalize maltreatment according solely to cut-off levels set for the CTQ-R questionnaire.

Maltreatment index of severity. CPS engagement is a proxy for the presence of child maltreatment, although it is acknowledged as capturing families from lower socioeconomic strata (Kim, & Cicchetti, 2003). Frequencies of MAP youth who were considered to be in the severe range of maltreatment experiences are as follows: 39.1% for emotional abuse, 42.0% for physical abuse, 19.4% for sexual abuse, 29.8% for emotional neglect and 80.7% for physical neglect. There were no significant differences in frequency levels of severity across CPS status (e.g., crown ward, society ward, community family/temporary care, voluntary care or no longer in care). In terms of key

item responses, 58.4% of the MAP sample reported being called names by family members, 51.3% were physically punished through the use of hard objects (e.g., a belt or cord), 21.4% were molested, 90.8% felt as though they were not loved and 88.2% felt as though no one would protect or care for them.

Adolescent negative affect: Trauma symptoms. The Trauma Symptom Checklist for Children (TSCC) is a self-report measure of distress and other related psychological symptomatology among children ages 8-16 (Briere, 1996; see Appendix D). The TSCC contains 54 items that produce six clinical scales (sexual concerns, dissociation, posttraumatic stress, anger, depression and anxiety), two subscales for the dissociation scale (overt dissociation and fantasy), and two subscales for sexual concerns (sexual preoccupation and sexual distress; Briere, 1996). The children are asked to indicate how often each statement is true (*never, sometimes, lots of times, almost all of the time*) of their thoughts, feelings or behaviours (e.g., "Feeling afraid something bad might happen"). The TSCC was standardized on a large non-clinical sample ($N = 3,000$) of socioeconomically and racially diverse children in the United States (Briere, 1996) and has shown adequate reliability and validity. Developmental traumatology theory highlights the importance of considering sub-clinical levels of symptoms, in addition to diagnostic levels. Each scale and subscale has a clinical cut-off and, to capture, sub-clinical levels, each scale and subscale above clinical cut-off will be summed to create a sub-clinical index (see Wekerle et al., 2009).

Distress symptoms. The Brief Symptom Inventory (BSI) measures clinically relevant psychological symptoms in adolescents and adults (Derogatis, 1993; see Appendix E). This 53-item assessment covers nine symptom dimensions: depression,

anxiety, obsession-compulsion, hostility, interpersonal sensitivity, phobic anxiety, paranoid ideation and psychoticism. There are also three levels of global distress (global severity index [GSI], positive symptom distress index [PSDI] and positive symptom total [PST]), which measure current or past levels of symptomatology, intensity of symptoms and number of reported symptoms, respectively (Derogatis, 1993). The BSI has good internal consistency reliability results ranging from .71 (psychoticism) to .85 (depression; Derogatis, 1993).

Angry affect. The State-Trait Anger Expression Inventory-2 (STAXI-2), developed by Spielberger (1999) is a 57-item inventory measuring the intensity of anger as an emotional state (state anger) and the disposition to experience angry feelings as a personality trait (trait anger; see Appendix F). The STAXI-2 contains six scales (state anger, trait anger [e.g., how often angry feelings are experienced over time], anger expression-in [e.g., how often angry feelings are suppressed], anger expression-out [e.g., how often angry feelings are expressed in physically or verbally aggressive ways], anger control-in [e.g., how often angry feelings are controlled by calming down] and anger control-out [e.g., how often the expression of angry feelings is control]) and five subscales (angry temperament [e.g., the tendency to experienced anger without provocation] and angry reaction [e.g., the frequency in which an adolescent experiences angry feelings in stressful, frustrating situations] are the two subscales used in this study). This instrument can be used for adolescents (16 to 19 years old), adults and clinical patients and requires a 6th grade reading level to complete (Spielberger, 1999). Internal consistency reliability ranges from .73 to .95 for the total scale and from .73 to .93 for the subscales (Spielberger, 1999). For our purposes the state anger scale was excluded from

the MAP study. MAP researchers were more interested in studying anger as a personality trait rather than as a situational reaction (e.g., state anger).

Verbal fluency. As a measure of communication abilities, this project used a standard neurological measure of a COWAT, the initial-letter word task, which was completed in three parts (see Appendix G). The tester explains the procedure to the participant during each letter task. While various levels of verbal fluency tests exist, from letter-word generation (e.g., letter "F" at start of word) to category-word generation (e.g., animals), the F, A, S word trial is the most common (Baron, 2004). The rationale for using the F, A, S trial as opposed to other word trials reflects that this version elicits responses from youth that have been classified as an easy level of difficulty.

To begin, the tester informed the participant of the rules using the following standard FAS script:

I am going to say a letter of the alphabet and I want you to say as quickly as you can all the words you can think of that beginning with that letter. For instance, if I say "B" you might say "bad, battle, bed ..." or other words like that. I do not want you to use words that are proper names, such as the names of people or places, so you would not say words such as "Boston, Bob, or Buick." Also, do not use the same word again with a different ending, such as "eat" and "eating." Do you have any questions? (pause) Okay, begin when I say the letter. The first letter is "F." Go ahead (Baron, 2004, p. 175-176).

The participant orally produces the words and the tester writes down the words on the questionnaire. The tester completed the task in sequence of the letters for words starting with F, then A, and finally S. Timing begins immediately following standard instructions. Testers used a standard timer to clock the 60 seconds.

Responses were scored on two different domains: legitimacy and emotional content. Legitimacy coding was an analysis of each response based on the set of production rules given to the youth at the beginning of the task. Words were coded as

illegitimate if they failed to meet the above criteria (e.g., repeated legitimate words; proper nouns – person or place such as "February", "America" or "Superman"). Responses will be coded as ambiguous if the word's meaning could be both legitimate and illegitimate depending on the context (e.g., "fall", "absolute" and "shell"). Dictionary.com was the resource used to check legitimacy status if the coder was unsure.

Emotional coding involved referencing the word's definition from Dictionary.com and assessing whether the definition was positive (e.g., "friend", "able" and "safe"), negative (e.g., "fondle", "afraid" and "sorrow"), neutral (e.g., "fly", "assume" and "sniff"), or ambiguous (e.g., "fix", "accident" and "sex"). Coding for emotionality on the COWAT has never before been attempted. Therefore a coding dictionary was created by the MAP research team based on the definitions found on Dictionary.com, so that all coders used a universal coding guide (see Appendix H). Both forms of coding were carefully entered and then checked by separate MAP researchers. Multiple coders evaluated the dataset after the MAP project manager trained them. Training included an overview of the universal coding guide and one-on-one instruction with an expert coder.

An expert in the verbal fluency task (Ph.D. in Brain, Behaviour, and Cognitive Science) served as the reliability coder for 10% of the cases, selected randomly from the 6-month data pool. Inter-rater reliability (the degree to which different coders produced similar ratings; APA, 2007) is an important consideration for this study. Inter-rater reliability rates for coding of the verbal fluency task were quite high for this sample.

Cohen's kappa[4] scores for "F" emotional word coding was .88, and "F" legitimacy word coding was .98. Cohen's kappa scores for "A" emotional word coding was .96 and "A" legitimacy word coding was .94. Cohen's kappa scores for "S" emotional word coding was .96 and "S" legitimacy word coding was .93. These scores indicate very high to almost perfect agreement between the MAP staff coding and expert coding on the verbal fluency task.

The verbal fluency task is based on norm-referenced production rates. The age of the participant was used to determine the normative production rate, which is given separately for each gender (Yeudall et al., 1986). Lower than norm response numbers suggest that the participant may lack communication skills; when differences are at the level of two standard deviations or greater, this may suggest a relative deficit.

Dating violence. To assess a youth's engagement in violent dating situations, the Conflict in Adolescent Dating Relationships Inventory – Short Form (CADRI-R) is used (see Appendix I). This questionnaire stipulates the term of a relationship by referencing a dating partner as someone dating for more than two weeks and specifically noting single dates as not eligible. The average length of their dating partnership for the CADRI-R scale was 10.18 months (*SD* = 13.59), with no gender differences. Dating partnerships range from .25 to 96 months in length. CADRI-R items sampled psychological, physical and sexual abuse within the context of a dating relationship for both perpetration and victimization aspects ("During a conflict or argument with my dating partner in the past 12 months:"…"My partner kicked, hit or punched me" and "During a conflict or argument with my dating partner in the past 12 months:"…"I threw something at my

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[4] Cohen's kappa reflects the degree of agreement between two raters corrected for the level of agreement expected by chance alone (APA, 2007).

partner"). The participants responded on a four point scale ranging from *never* to *often* with a fifth selection option being *not applicable*. CADRI-R was found to have moderately low two-week test-retest reliability rates ($r = .38$ for perpetration and $r = .44$ for victimization), however, relatively high internal validity rates were recorded (perpetration, .85 and victimization, .91; Wolfe et al., 2001 using a total score across all 80 CADRI items). A total perpetration score and a total victimization score was used for the present study to describe the total amount of dating violence. The short form of the CADRI that has been used focuses on mainly emotional (threats of sexual, physical violence), and physical assault. This 7-item CADRI-R has been shown to have good internal consistency in both community and other CPS samples (Wekerle et al., 2001; Wekerle et al., 2009). For analysis in the present study, the short CADRI, and total score was used, which can range from 0 (*never* on any item) to 21 (*often* on all 7 items). The CADRI-R is the only dating violence form developed for adolescents; while it has been used with large convenience samples of teens, there are no published norms. Based on the 7-item short CADRI, convenience samples of CPS youth have mean total scores that range from 1.05 to 2.38 (Wekerle et al., 2001), across victimization and perpetration scales.

Procedures

The present data stems from the second MAP testing at 6 months from initial testing where the verbal fluency test was measured, and where the dating violence questionnaire tapped the prior 12 months. The childhood maltreatment measure tapped lifetime maltreatment experiences.

The MAP questionnaire was completed within the youth's home (80% of youth), on a laptop provided by the MAP project tester, mostly in the participant's residence, with privacy. The verbal fluency test, as noted, was a timed, tester administrated test which was completed as a paper-and-pencil task. All MAP testers were trained and monitored by a Ph.D. psychology project manager, and are required to be at a bachelor or master's level in psychology or another related discipline. Youth could select other testing venues, most typically in the MAP offices or at their CPS office (20% of youth). For testing, a MAP project tester was present to administer and explain the questionnaire to the youth. After the completion of each session, youth were given a help sheet, which contained area resources and 24-hour help services, as well as the contact information for the principal investigator and the university ethics contact person (see Appendix J). Youth were compensated $28 for their participation at each MAP testing, which conformed to the average time determined at MAP pilot testing at the Ontario adolescent minimum wage for working (Wekerle et al., 2009).

The completed questionnaires are kept in a locked file cabinet at the CAMH in Toronto in the MAP study offices (restricted access). Consent forms and identifying information are kept separate from any data forms, where any paper-and-pencil data forms only have the self-generated MAP ID numbers (no names). For remote access, MAP researchers have the ability to access the data through an online database via login name and password. This enables the researchers to view and analyze the data away from the Toronto office.

Results

All statistical analyses were completed using the software package, SPSS version

17.0. Data complete for the questionnaires of interest [6-month testing: CTQ-R, BSI,

TSCC, STAXI-2, CADRI-R, COWAT) were used. Within any subscale, if 75% or more

of the items were responded to, imputation on the remaining items were derived using the

participant's mean response on that particular subscale. Thus, this study sample is based

on 238 youth (59.7% female). First, we consider the comparability between those MAP

youth who had complete data ($n = 238$) versus those youth who were eliminated from

analyses who had incomplete data ($n = 184$) on background factors. Second, descriptive

statistics are presented and, third, the research questions are considered in turn.

Study sample characteristics – Present sample versus available sample

The MAP youth included in the present study did not differ from those who did

not complete nor had less than 75% completed questionnaires of interest in terms of:

gender, age, CPS status and socioeconomic status. There was a significant difference

between the two groups on one of the CTQ-R scales (emotional abuse, $t = -2.17, p < .05$).

The youth with complete data reported higher instances of emotional abuse than those

who did not have complete data. As such, findings related to emotional abuse, which

does not include exposure to adult intimate partner violence, may not generalize to the

whole MAP sample, to CPS-involved adolescents in Ontario, or maltreated youth more

broadly.

Descriptive Statistics on Study Variables: Childhood Maltreatment, Trauma Symptoms,

Distress Symptoms, Negative Affect, Dating Violence and Verbal Fluency

Childhood maltreatment. The CTQ-R (total score $M = 62.71, SD = 12.88$) provides

the youths' report of lifetime maltreatment (e.g., "while growing up..."), although it does

not query exposure to domestic violence. The manual provides severity gradients (mild,

moderate, severe) for the five scales, as well as various samples' respondent means (for

mean scores on CTQ-R scales, see Table 1).

Table 1

CTQ-R Mean Scores and Item Positive Endorsement by Gender and Scale Scores

CTQ-R Items	Total Sample	Female	Male	χ^2
Emotional abuse				
People in my family called me things like "stupid", "lazy" or "ugly"	58.4	64.8	49.0	9.96
I thought that my parents wished that I had never been born	49.2	56.3	38.5	9.32
People in my family said hurtful or insulting to me	56.3	66.2	41.7	16.25**
I felt that someone in my family hated me	56.3	63.4	45.8	10.47*
I believe that I was emotionally abused	51.3	64.1	32.3	32.74***
Emotional abuse subscale total, *M* (*SD*)	11.42 (5.82)	12.69 (5.89)	9.54 (5.21)	
Physical abuse				
I got hit so hard by someone in my family that I had to see a doctor or go to a hospital	20.2	22.5	16.7	4.21
People in my family hit me so hard that it left me with bruise or marks	45.4	50.7	37.5	8.49
I was punished with a belt, a cord, or some other hard object	51.3	54.9	45.8	4.19
I believe that I was physically abused	50.0	56.3	40.6	8.78
I got hit or beaten so badly that it was noticed by someone like a teacher, neighbour, or doctor	33.6	35.9	30.2	8.15
Physical abuse subscale total, *M* (*SD*)	9.75 (5.28)	10.44 (5.62)	8.72 (4.58)	
Sexual abuse				
Someone tried to touch me in a sexual way or tried to make me touch them	21.4	28.9	10.4	19.57**

Someone threatened to hurt me or tell lies about me unless I did something sexual with them	13.9	16.9	9.4	9.66*
Someone tried to make me do sexual things of watch sexual things	16.4	21.8	8.3	15.16**
Someone molested me	18.5	23.9	10.4	19.13**
I believe that I was sexually abused	18.9	26.1	8.3	19.99**
Sexual abuse subscale total, *M (SD)*	7.22 (4.80)	8.23 (5.79)	5.72 (1.99)	
Emotional neglect				
I felt loved[a]	90.8	89.4	92.7	3.02
There was someone in my family that made me feel that I was important or special[a]	85.3	85.2	85.4	6.04
People in my family looked out for each other[a]	84.9	85.9	84.4	9.45
People in my family felt close to each other[a]	84.0	83.8	84.4	6.38
My family was a source of strength and support[a]	72.7	74.6	69.8	3.50
Emotional neglect subscale total, *M (SD)*	11.84 (3.57)	11.61 (3.44)	12.17 (3.74)	
Physical neglect				
I didn't have enough to eat	37.8	38.7	36.5	6.33
I knew that there was someone to take care of me and protect me[a]	88.2	86.6	90.6	8.07
My parents were too drunk or high to take care of the family	25.2	27.5	21.9	3.73
I had to wear dirty clothes	28.6	31.7	24.0	2.74
There was someone to take me to the doctor if I needed it[a]	85.7	88.0	82.3	3.39
Physical neglect subscale total, *M (SD)*	11.18 (2.42)	11.23 (2.30)	11.10 (2.59)	
CTQ-R total, M (SD)	62.71 (12.88)	65.31 (12.88)	58.87 (11.93)	

Note. CTQ-R scores range from 25 to 125 for the total score; and for 5 to 25 for the scale score.
[a] Positive CTQ-R items were reverse coded to reflect neglect; therefore, the percentages represent an endorsement of a "never" on these items
*$p < .05$
**$p < .01$
***$p < .001$

Considering these MAP means, as compared to the manual means, we find that MAP females scored significantly below the female adolescent psychiatric patient means on the emotional abuse ($t = -2.04$, $p < .05$), sexual abuse ($t = -2.62$, $p < .01$) and emotional neglect ($t = -7.92$, $p < .001$) scales. MAP females scored higher on the physical abuse ($t = 2.43$, $p < .05$) and physical neglect ($t = 14.11$, $p < .001$) scales than the clinical comparison sample. When compared to the CTQ clinical comparison sample, MAP male means were significantly lower on emotional abuse ($t = -2.94$, $p < .01$), and sexual abuse ($t = -4.32$, $p < .001$). MAP males reported higher means on the physical neglect ($t = 12.9$, $p < .001$) scale when compared to the clinical adolescent sample. In terms of scoring in the clinical ranges, 9.5% (sexual abuse) to 81.3% (physical neglect) of MAP males; 26.1% (sexual abuse and emotional neglect) to 80.3% (physical neglect) of MAP females score this way.

To provide an overview of the types of maltreatment experiences, we can consider the individual item level of the CTQ-R (for item endorsement patterns, see Table 1). Within each category of maltreatment, the most frequently endorsed items (collapsed across frequencies) are noted in Table 1. For example, name-calling is most frequent within emotional abuse; being punished with a hard object was most frequent within physical abuse; fondling was most frequent within sexual abuse; not feeling loved and (not) knowing someone was there to take care of the child (reverse-coded item) were among the most frequent physical neglect experiences.

As noted, epidemiological data consistently shows a greater rate of sexual abuse for females and, in some studies, greater physical abuse for males. Thus, maltreatment is considered separately by gender. An independent samples t-tests examining mean gender

differences resulted in three scales and the total score, showing significant differences across gender (emotional abuse: $t = 4.24$, $p < .001$; physical abuse: $t = 2.60$, $p < .05$; sexual abuse: $t = 4.75$, $p < .001$; and CTQ-R total: $t = 3.90$, $p < .001$). Female participants scored significantly higher on the above scales and total score, as compared to male participants. These sexual abuse results are consistent with prior research. Based on youth report, MAP females are endorsing higher severity across maltreatment subtypes. As has been found in prior studies, maltreatment types overlap particularly among CPS and clinical samples (Trocmé et al., 2003). The CTQ-R scales correlations are, therefore, presented for each gender.

Trauma Symptoms. The total sample means scores across TSCC scales and subscales are: posttraumatic stress ($M = 6.70$, $SD = 6.24$); anger ($M = 5.63$, $SD = 5.92$); dissociation ($M = 6.80$, $SD = 6.07$); overt dissociation ($M = 4.70$, $SD = 4.72$); fantasy ($M = 2.10$, $SD = 1.80$); depression ($M = 4.91$, $SD = 5.18$); sexual concerns ($M = 4.11$, $SD = 4.71$); sexual preoccupation ($M = 3.31$, $SD = 3.80$); sexual distress ($M = 1.10$, $SD = 1.97$); and anxiety ($M = 4.46$, $SD = 5.07$). Significant gender differences were found, with females scoring higher than males on mood scales [e.g., depression ($t = 2.50$, $p < .05$); and anxiety ($t = 2.38$, $p < .05$)] and males scoring higher than females on the sexual behaviour subscale [e.g., sexual preoccupation ($t = -2.42$, $p < .05$)]. This may suggest a gendered experience of trauma symptoms that may merit further investigation; future research may consider a factor analysis of TSCC items by gender in large samples. In terms of scoring in the clinical ranges, 2.1% (anger) to 24.0% (sexual distress) of males and 5.6% (depression) to 18.3% (sexual preoccupation) of females score this way.

Distress Symptoms. The three global indices for the BSI generated means scores of .71 (SD = .67) for GSI, 21.10 (SD = 14.25) for PST and 1.62 (SD = .62) for PSDI. Gender differences were found on the GSI (t = 3.04, p < .01) and PST (t = 3.30, p < .01) indices, with females scoring significantly more symptomatic than males. The GSI is the most sensitive indicator of distress within the TSCC as it combines information about the number of symptoms experienced and the level of distress, whereas the PSDI only provides information about the average level of distress and the PST reports the number of symptoms the participant reports having.

The mean scores on the BSI scales were 4.26 (SD = 5.57) for somatization; 5.80 (SD = 5.08) for obsession-compulsion; 2.67 (SD = 3.59) for interpersonal sensitivity; 4.59 (SD = 5.52) for depression; 3.55 (SD = 4.65) for anxiety; 3.83 (SD = 4.36) for hostility, 2.17 (SD = 3.89) for phobic anxiety; 3.80 (SD = 4.15) for paranoid ideation; and 2.98 (SD = 3.77) for psychoticism. Independent samples *t*-tests revealed significant gender differences on the following scales, where females scored as more symptomatic than males: somatization (t = 2.16, p < .05), interpersonal sensitivity (t = 2.21, p < .05), and phobic anxiety (t = 2.38, p < .05). In terms of scoring in the clinical range, 26.0% (interpersonal sensitivity) to 79.2% (obsession-compulsion) of MAP males and 37.3% (phobic anxiety) to72.5% (obsession-compulsion) of MAP females score this way.

Angry affect. The mean scores on five of the STAXI-2 scales are as follows: trait anger (M = 20.85, SD = 6.95), anger expression-out (M = 17.88, SD = 4.75), anger expression-in (M = 17.50, SD = 4.40), anger control-out (M = 19.26, SD = 4.79) and anger control-in (M = 19.25, SD = 4.99). Two trait anger subscales, angry temperament (M = 8.08, SD = 3.30), and angry reaction (M = 8.58, SD = 3.06), were also examined.

An independent samples t-test was performed to examine whether or not gender

differences could be found. There were no significant differences found between males

and females on any STAXI-2 scale or subscale. In terms of scoring in the clinical range,

11.5% (anger control-out) to 31.3% (angry temperament) of MAP males and 4.2% (anger

control-in) to 50.0% (angry temperament) of females score this way.

Dating violence. Items on the CADRI-R (victimization: $M = 1.92$, $SD = 3.42$;

perpetration: $M = 1.89$, $SD = 2.94$) were split into two subscales: one relating to

victimization and the other to perpetration of dating violence. Items were coded as

follows: *never* = 0, *seldom* = 1, *sometimes* = 2, and *often* = 3. As indicated by

epidemiological estimates, a minority of the youth population endorsed dating violence,

at about 10% for intentional physical assault (YRBSS, 2008). The present study, unlike

prior published reports with CPS youth (e.g., Wekerle et al., 2001), utilized a random

selection procedure. A minority of MAP youths endorse experiencing dating violence

experiences; however, it would seem to be much higher than the non-CPS involved

population of youth (when considering item endorsement patterns). To provide a picture

of the types of behaviours these CPS involved youth reported engaging in, the CADRI-R

item responses were recoded into dichotomous form, where 0 = *never true* and 1= *true*, at

any level of frequency.

Significant gender differences were found when comparing male ($M = 1.19$, $SD =$

1.89) and female ($M = 2.37$, $SD = 3.04$) means on the perpetration subscale ($t = 3.42$, $p <$

.01). Females endorsed being perpetrators of dating violence significantly more than do

males. There was not a significant difference between male ($M = 1.75$, $SD = 3.22$) and

female ($M = 2.03$, $SD = 3.55$) mean scores on the victimization subscale ($t = .61$, *ns*).

There are no norms to utilize in assessing the CADRI findings.

In Tables 2 and 3, the percentages of endorsement on dating violence subscales (victimization and perpetration respectively) are indicated, where most frequently, youth engage in verbal abuse, but also considerably high is threats and actual physical assault. This endorsement pattern was observed for both perpetration and victimization. Significant gender differences for percentages of endorsement can also be found in Tables 2 and 3. MAP females endorsed significantly more psychical violence (e.g., hitting, punching and kicking) and threats of physical violence more than MAP males.

Table 2
Percentages of Endorsement on the CADRI-R Victimization Subscale

CADRI-R Victimization Subscale Items	Total Sample	Female	Male	χ^2
My partner said things just to make me angry.	46.2	50.7	39.6	4.07
My partner threatened me in an attempt to have sex.	3.8	4.2	3.1	5.73
My partner kicked, hit, or punched me.	16.4	17.6	14.6	2.91
My partner slapped or pulled my hair.	11.3	7.7	16.7	7.49
My partner threatened to hurt me.	11.8	12.7	10.4	1.14
My partner threatened to hit or throw something at me.	13.0	12.7	13.5	.68
My partner pushed, shoved, shook, or pinned me down.	15.1	17.6	11.5	6.21

Table 3
Percentages of Endorsement on the CADRI-R Perpetration Subscale

CADRI-R Perpetration Subscale Items	Total Sample	Females	Males	χ^2
I said things just to make my partner angry.	46.6	53.5	36.5	7.67
I threatened my partner in an attempt to have sex.	2.1	2.1	2.1	.83
I kicked, hit, or punched my partner.	18.1	25.4	7.3	16.16*
I slapped or pulled my partner's hair.	11.8	14.1	8.3	2.28

I threatened to hurt my partner.	11.3	15.5	5.2	6.19
I threatened to hit or throw something at my partner.	17.2	23.2	8.3	11.39**
I pushed, shoved, shook, or pinned down my partner.	18.1	19.7	15.6	1.36

$* p < .05$

$** p < .01$

Verbal fluency. The minimum number of responses for the total verbal fluency score was 0 (e.g., across all three letter trials, indicating an absence of word production), and the maximum number of responses was 60 (indicating about one word for every three seconds). The mean number of total responses was 31.21 ($SD = 10.54$). The mean number of total legitimate words produced for the entire verbal fluency task (F, A, S trials combined) was 25.49 ($SD = 12.31$), 2.13 ($SD = 3.28$) for illegitimate word production and 3.59 ($SD = 8.75$) for ambiguous legitimacy word production. The mean number of total positive words produced across all letter trials was 3.41 ($SD = 2.56$), 2.76 ($SD = 2.47$) for negative words, 21.44 ($SD = 8.37$) for neutral words, and 3.60 ($SD = 2.77$) for ambiguous emotionality words.

As compared to normative means on the COWAT, MAP youth, both males and females produced significantly fewer words on the "F" trial (males: $t = -11.73, p < .001$; females: $t = -12.69, p < .001$), "A" trial (males: $t = -14.12, p < .001$; females: $t = -13.94, p < .001$), "S" trial (males: $t = -9.49, p < .001$; females: $t = -12.85, p < .001$), and total legitimate word productions (males: $t = -12.20, p < .001$; females: $t = -14.45, p < .001$). There are no established norms for emotional coding as this is a novel approach.

After completing an independent samples *t*-test to compare the means of female and male production across total word production, emotional and legitimacy conditions, the results indicated that there was no significant difference in the mean production rates

of legitimate, illegitimate, negative, neutral, ambiguous emotionality and total words produced across gender. However, an independent samples t-test comparing the means of female and male positive word production rate ($t = 2.22$, $p < .05$) and ambiguous legitimacy ($t = -1.93$, $p < .05$) revealed significant differences. Females produced significantly more positive words across all letter trials than males, whereas males produced more ambiguous legitimacy words than females across the trials. Given the presence of a gender difference and the exploratory approach of the emotion coding aspect on the COWAT, correlations with verbal fluency will be broken down by gender.

Research Question 1: Do CPS involved adolescents show greater levels of negative affect than established norms?

In considering the MAP youth scores, as compared to the TSCC manual, for females, anxiety ($t = -4.18$, $p < .001$), depression ($t = -5.18$, $p < .001$), anger ($t = -6.29$, $p < .001$), posttraumatic stress ($t = -4.72$, $p < .001$) and fantasy dissociation ($t = -3.40$, $p < .001$) means were significantly below the normal sample as provided in the TSCC manual (non-clinical: $N = 3,008$; 53.0% females). MAP females scored significantly higher on sexual distress ($t = 2.25$, $p < .05$) responses than the normative sample. For MAP males, their responses on the anger ($t = -2.19$, $p < .05$) and anxiety ($t = -5.83$, $p < .001$) subscales were significantly lower than the normal male sample group. MAP males scored significantly higher on sexual distress subscale ($t = 2.70$, $p < .01$) when compared to the norm sample.

As compared to the means provided in the BSI manual, the MAP youths' reported significantly higher means on all scales for both females (e.g., somatization: $t = 8.18$, $p < .001$; obsession-compulsion: $t = 10.92$, $p < .001$; interpersonal sensitivity: $t = 6.70$, $p < .001$; depression: $t = 8.74$, $p < .001$; anxiety: $t = 7.36$, $p < .001$; hostility: $t = 7.99$, $p <$

.001; phobic anxiety: $t = 5.92, p < .001$; paranoid ideation: $t = 7.97, p < .001$; and

psychoticism: $t = 7.16, p < .001$) and males (e.g., somatization: $t = 6.23, p < .001$;

obsession-compulsion: $t = 10.02, p < .001$; interpersonal sensitivity: $t = 3.20, p < .001$;

depression: $t = 6.01, p < .001$; anxiety: $t = 5.56, p < .001$; hostility: $t = 6.11, p < .001$;

phobic anxiety: $t = 2.92, p < .01$; paranoid ideation: $t = 6.05, p < .001$; and psychoticism:

$t = 5.88, p < .001$). As compared to BSI manual norms, both MAP males and females

scored significantly higher on the GSI (males: $t = 5.49, p < .001$; females: $t = 6.31, p < .001$), PST (males: $t = 3.04, p < .001$; females: $t = 4.45, p < .001$) and PSDI (males: $t = 4.34, p < .001$; females: $t = 4.89, p < .001$).

As compared to the means provided in the STAXI-2 manual for a normal

adolescent sample, MAP females scored significantly higher on the trait anger scale ($t = 4.82, p < .001$), angry temperament ($t = 6.03, p < .001$), anger expression-out ($t = 4.96, p < .001$) and anger expression-in scales ($t = 3.22, p < .01$). MAP females scored

significantly lower than the normative sample on anger control-out ($t = -9.35, p < .001$)

and anger control-in scales ($t = -11.16, p < .001$). MAP males scored higher than the

normal sample on angry temperament ($t = 2.78, p < .01$) and anger expression-out ($t = 2.27, p < .05$) scales. Like MAP females, MAP males also scored significantly lower on

the anger control-out ($t = -5.26, p < .001$) and anger control-in scales ($t = -4.11, p < .001$).

*Research Question 2: Does an association exist between experiences of severe
maltreatment and clinical levels of negative affect?*

*Creation of sub-clinical to clinical-level indices for (a) maltreatment and (b)

negative affect.* To better capture the role of maltreatment, the CTQ-R subscale totals

were re-coded into dichotomous values to capture the severity of the maltreatment

experience. As outlined in the CTQ manual, each subscale has unique cutoff scores to be

classified as having experienced 'none', 'low, 'moderate' and 'severe' forms of maltreatment. For our purposes, we combined 'none' to 'low' scores to be classified as non-clinical (e.g., '0') and 'moderate' to 'severe' scores to be clinical (e.g., '1').

To help reduce data and encapsulate distress and negative affect within our sample, a similar process was used to create the negative affect index. First all scales and subscales of the BSI, TSCC and STAXI-2 were compared to determine whether or not the questionnaires displayed significant correlations and therefore could be used to form a total negative affect index. As seen in Appendix L, most scales and subscales of the BSI, TSCC and STAXI-2 were significantly correlated, mainly at high levels (e.g., $r > .6$). Due to significant inter-correlation between the measures a negative affect index was created.

The negative affect scales and subscales were re-coded into 'clinical' and 'non-clinical' classifications based upon appropriate scale cutoffs as determined by their respective manuals. The negative affect index is a summation of all clinical classifications across the scales and subscales of the TSCC, BSI and STAXI-2.

Research Question 3: Do maltreated youth who have high levels of negative affect show poor cognitive performance on the verbal fluency task? Specifically, do high negative affect youth have higher ineligible responses? Is there evidence of mood-impairing processing, in higher rates of (i) ineligible words and (ii) ambiguous codes than non-ambiguous codes?

As seen in Table 4, there were no significant correlations found for either males or females when considering the negative affect index and the number of illegitimate words produced. There was a significant negative correlation ($r = -.24$, $p < .05$) for males between high levels of negative affect and the number of ambiguous legitimacy words produced. This suggests that as levels of negative affect increase in males, their production of ambiguous legitimacy words decreases.

To separate those youth who scored high on the negative affect index, a median split was performed to separate lower and higher scores. Only a few significant differences between the high and low negative affect groups were found. Those who reported high levels of negative affect scored below those with low negative affect on emotional abuse ($t = -4.28$, $p < .001$), physical abuse ($t = -3.63$, $p < .001$), sexual abuse ($t = -2.14$, $p < .05$), dating violence victimization ($t = -3.12$, $p < .01$), and perpetration ($t = -2.89$, $p < .01$). The high negative affect group scored higher than the low negative affect group on ambiguous legitimacy word production ($t = 2.70$, $p < .01$).

Ad Hoc Analysis

To further examine whether a relationship exists between verbal fluency production and high negative affect and dating violence behaviours, a median split analysis was done to compare COWAT variables to our variables of interest. Each COWAT variable was separated into dichotomous form, where "0" represented those who scored lower than the median, and "1" represented those who scored higher than the median. To create more distinct groups, an upper and lower quartile on the COWAT were used to define "high" and "low" groups, respectively, as well. Using an independent samples *t*-test, there was only one significant difference noted between the "high" and "low" COWAT variable groups: Individuals who scored high on negatively valenced word production reported significantly higher experiences of emotional abuse ($t = -2.03$, $p < .05$) than those who scored low on negative word production.

Table 4

Pearson Correlations between CTQ-R, Negative Affect Index, COWAT and CADRI-R Scales and Subscales for Males and Females

Subscale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. EA	-	**.79^c**	**.28^b**	**-.31^b**	**.21^a**	**.35^b**	.17	.13	-.15	.18	.12	.31^b	-.22^a	.16	.12
2. PA	**.74^c**	-	**.27^b**	**-.32^b**	**.21^a**	**.39^c**	.20	.15	-.10	.13	.16	.46^c	-.28	.12	.14
3. SA	**.36^c**	**.39^c**	-	**-.09**	**.22^a**	**.34^b**	-.02	-.02	-.14	.19	-.04	.28^a	-.10	.30^b	.31^b
4. EN	**-.56^c**	**-.52^c**	**-.21^a**	-	**.35^c**	**-.1**	.01	.05	.11	.03	.06	-.30^b	.12	-.12	-.15
5. PN	**.13**	**.05**	**-.04**	**.05**	-	**.11**	.06	.05	-.01	.05	.04	.08	-.04	.10	.06
6. NAI	**.33^c**	**.26^b**	**.24^b**	**-.07**	**.11**	-	.19	.10	-.13	.12	.12	.21	-.24^a	.33^b	.25^a
7. POS.	-.03	-.10	-.07	.10	-.01	.22	-	.50^c	.03	.39^c	.71^c	.30^b	-.48^c	.08	-.09
8. NEG.	.16	.16	.03	-.09	.12	.05	.32^c	-	-.06	.50^c	.65^c	.23^a	-.42^c	.17	.15
9. NEUT.	.02	.02	-.01	-.04	.24^b	-.03	.04	.03	-	-.07	.12	.12	.55^c	-.04	.03
10. AMB-E	.10	.10	.00	-.03	.07	-.01	.02	.33^c	.31^b	-	.69^c	.06	-.48^c	-.14	-.14
11. LEG.	.00	-.02	.02	.06	.20^a	.05	.53^c	.54^c	.53^c	.52^c	-	.24^a	-.69^c	.00	-.05
12. ILLEG.	.08	.14	-.05	-.08	-.14	-.12	-.07	-.07	.20^a	.49^c	-.01	-	-.29^a	.17	.10
13. AMB-L	.07	.04	-.04	-.11	.10	-.05	-.32^c	-.25^b	.37^c	-.24^b	-.46^c	-.11	-	-.05	.04
14. VICT.	.05	.06	-.14	.04	.09	.26^c	-.01	-.02	.01	.07	.02	-.07	.03	-	.79^c
15. PERP.	.01	.05	-.15	.04	.06	.27^c	.02	-.03	.01	.04	-.04	-.09	.13	.79^c	-

Note. Top correlations are for males; Bottom correlations are for females. Bold numbers represent CTQ-R scale and negative affect index intercorrelation. EA = emotional abuse, PA = physical abuse, SA = sexual abuse, EN = emotional neglect, PN = physical neglect, NAI = negative affect index, POS. = positive word total, NEG. = negative word total, NEUT. = neutral word total, AMB-E = ambiguous emotionality word total, LEG. = legitimate word total, ILLEG. = illegitimate word total, AMB-L = ambiguous legitimacy word total, VICT. = victimization subscale, and PERP. = perpetration.

^{a} $p < .05$
^{b} $p < .01$
^{c} $p < .001$

Discussion

This study examined the degree to which the experiences of severe maltreatment influence CPS involved youth in the areas of cognition, affect and behaviour. Specifically, this study assessed whether or not these youth experienced levels of negative affect reflective of a high negative affect load. This study also explored the impact of negative affect load on a youth's ability to perform on a verbal fluency task, and whether this was associated with a youth's involvement in violent dating relationships. To reflect the negative affect load within the verbal fluency task, this study examined the emotional valence of words to assess an affective bias. Participants completed a number of self-report measures about their maltreatment history, mental health, and intimate relationship history along with a verbal fluency task. This was an exploratory study, as associations between maltreatment history, negative affect load and emotional valence on a verbal fluency task have yet to be investigated within a sample of maltreated youth. As such, all interpretations of the results should be considered as preliminary, and all major findings require replication in future research.

Research Question 1: Do CPS involved adolescents show greater levels of negative affect than established norms?

Negative affect was shown to be much more prevalent in the sample of maltreated youth as measured by the BSI than typically found in community samples of adolescents. However, both the TSCC and STAXI-2 comparisons of means were not as supportive to the idea that MAP youth exhibit significantly high levels of negative affect. Also although evidence of PTSD symptoms have been found in maltreated adolescent populations (Wekerle et al., 2009), this study was unable to replicate the findings.

Reasons as to why the current study was unable to find consistent levels of high

negative affect across all measures used could be that each measure varied on the demographic variables used to standardize the measure and also varied in terms of the level of socioeconomic disadvantage (SED[5]; Dumas, & Wekerle, 1995). Variances in mean scores could be due to demographic variables (e.g., the samples used in each measure varied in terms of patient versus non-patient status, age means, country in which the measure was standardized and so on). Despite previous findings, perhaps there was something inherent in the sample of youth with complete data used here, than those who did not have complete data.

As previously mentioned the psychological distress of maltreatment can be buffered through a number of factors (Wekerle et al., 2008). For example, levels of SED could be considered to be a moderator between the effects of maltreatment and experiences of distress. It could prove useful in further research to create groups based on historical and current SED of CPS youth, as often foster homes provide more concrete opportunities for youth to have access to relatively higher levels of economic stats. However the operalization of SED would be difficult given that some CPS youth have moved numerous times and experienced varying degrees of SED.

DET suggests ways in which positive emotional experiences can foster development in adaptive, positive ways. In particular, positive emotions can help youth acquire emotional competence and enable these youth to place themselves in interactions with other youths who have positive interpersonal skills (Schultz et al., 2004). Also outlined by DET is the fact that as children develop they begin to rely less on their

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[5] SED is a more complex consideration of socioeconomic status, and it encompasses factors such as poverty, social class, social marginalization, and institutional discrimination (APA, 2007).

parents for emotion regulation (Thompson, 1994). Perhaps this sample of MAP youth, who we know to be involved in intimate relationships, have also developed positive peer relationships, which could act as a buffer to effects of maltreatment. Perhaps through emotion regulation and socialization processes these youth have begun to learn that high levels of negative affect are maladaptive. Through their experiences of positive emotions, peer and other social interactions, these youth could have learned to view their experiences of maltreatment in different ways, thereby allowing them the opportunity to function adaptively within positive environments, with low levels of negative affect.

Research Question 2: Does an association exist between experiences of severe maltreatment and clinical levels of negative affect?

Clinical levels of negative affect were significantly correlated with abuse scales of the CTQ-R, not neglect, for both males and females. As seen in the results, it was the abuse scales rather than the neglect scales that were related to the negative affect index, which is intuitive when viewing the abuse scales as tapping into an "active" symptom, rather than to an absence symptom, like anhedonia (e.g., the loss of enjoyment of activities that were once seen as pleasurable; Lumley, & Harkness, 2007). It might be that neglect is more related to anhedonia among CPS adolescents however this study did not have a direct measure of anhedonia. Although general strain theory suggests proximal events to be the primary cause of delinquency and other negative effects, perhaps current MAP youth responded only to "active" negative experiences (e.g., abusive behaviour) in terms of developing higher levels of negative affect.

Research Question 3: Do maltreated youth who have high levels of negative affect show poor cognitive performance on the verbal fluency task? Specifically, do high negative affect youth have higher ineligible responses? Is there evidence of mood-impairing processing, in higher rates of (i) ineligible words and (ii) ambiguous codes than non-ambiguous codes?

Results showed that: (1) childhood physical, emotional, and sexual abuse scales were positively correlated with illegitimate word production; (2) emotional abuse was negatively correlated with ambiguous legitimacy word production; (3) emotional neglect was negatively correlated with illegitimate word production for males; and (4) physical neglect scales were positively correlated with neutral word production and legitimate word production for females. As seen with previous results, for males, the experience of abuse significantly raised levels of illegitimate word productions, suggesting an inability to self-regulate and control impulsive responses, or other issues in following task rules. Due to the negative associations found for males, it could be the case that emotional maltreatment (both abuse and neglect types) is processed or perceived different in males than are other forms of maltreatment (e.g., physical and sexual abuse).

Also results on the verbal fluency task associated with neglect could be due to the absence of verbal (and non-verbal) stimuli inherent in neglectful environments, as caregiver-child verbal interactions are most restricted in the case of neglect (Beeghley, & Cicchetti, 1994). Low productions of illegitimate words for males are in line with this, however physical neglect was associated with higher productions for females. This further endorses the idea that experiences of emotional neglect impact CPS youth's verbal fluency differently than physical neglect or any type of abuse. A possible explanation for the lack of significant findings between other COWAT variables and maltreatment may be due to the fact that this neuropsychological measure was not sensitive enough to the experiences of maltreatment, in terms of tapping mood and thinking in a relationship, rather than timed task, context. Although these associations are interesting in their own right, they do not provide support for study hypotheses.

There was no support found for a mood-congruent bias in information processing within this sample. There were no significant differences in the production of negative, ambiguous emotionality or illegitimate words when compared to high levels of negative affect. Due to insignificant correlations between COWAT variables and dating violence behaviours there was not sufficient evidence to proceed with regression analysis. In this way, MAP males and females are consistent in suggesting that mood-congruent processing with respect to using the COWAT as an indicator of negative dating behaviours may not have much merit as per this specific sample, of CPS youth.

This study took a conservative approach in terms of examining mood-congruent processing by considering clinical levels, as well as including the sub-clinical levels. By comparing the top and bottom quartiles of COWAT variables in the ad hoc analysis, this study was able to further examine whether any relationships exist supporting the notion of mood-congruent processing. Due to the lack of significant findings, the COWAT may not be a strong indicator of mood-congruent processing, or it could be the case that mood-congruent processing is not the mechanism that is being tested with the COWAT.

However there is some hope for the use of the COWAT in terms of testing mood-congruent processing. The results of the ad hoc COWAT median split suggest that there may be a role for emotional maltreatment in mood-congruent processing. Future studies will need to fully explore the range of emotional maltreatment that can be experienced. The range of emotional maltreatment could include acts such as aggressive and aversive relating (e.g., being sworn at, or shamed), developmentally inappropriate punishment (e.g., spanking), bizarre forms of punishment (e.g., being forced to eat from the floor or a dog bowl) and terrorism (e.g., having fears be exploited as a source of entertainment;

Wekerle et al., 2009). Due to the vast nature of this type of maltreatment it would prove fruitful in future research to examine the depths of emotional maltreatment and its effects on adolescent cognitive-affective structures.

When considering the developmental psychopathology perspective of emotion dysregulation (Shields, Cicchetti, & Ryan, 1994), it was hypothesized that maltreated youth would be delayed in their mastery of the developmental task of achieving an emotional equilibrium early in their lives, thereby putting them at risk for failure at future stages of development in terms of emotional and behavioural control (Shields, & Cicchetti, 1998). Current results were unable to provide support to this hypothesis among adolescents in this study. Achieving an emotional balance early in life depends on a multitude of factors, not all of which could be captured, or were captured here. Variables such as the identity of the perpetrator, attachment to perpetrator, attachment style to guardian, ability to engage in peer supported activities, and presence of other caring adult figures are only a few possible variables that would influence a child's development of an emotional equilibrium, in spite of a history plagued with maltreatment.

It is also possible that Izard's (1991) concept of repeated exposure to a particular emotion as an influencing factor in youths cognitive-affective structures is inapplicable to this sample of maltreated youth, in regards to their performance on the verbal fluency task used here. As previously mentioned, the COWAT may not be sensitive enough to the subtle influences of repeated exposure of negative emotions experienced by CPS youth. As shown in the results, there were no consistent findings supporting maltreatment as a source of substantial verbal fluency delay, or catalyst for violent dating behaviours due to increased negative affect levels. DET posits that exposure to both negative and positive

emotions may influence cognitive-affective development (Schultz et al., 2004). Perhaps experiences of positive emotions need to be accounted for in some respect to fully capture the outcomes of these maltreated children.

Although dynamic skill theory would suggest that CPS youth show mood-congruent biased processing skills, the lack of significant relations found to support that hypothesis would suggest a more complex interpretation of dynamic skill theory applied to CPS youth is needed. Environments that are hostile, neglectful and abusive are extremely complex and therefore it is hard to fully encapsulate the context in which behavioural skills in maltreated children are developed. In conjunction with other mitigating factors (such as the experience of positive emotions, positive social relationships, and positive role models), it could be quite difficult to effectively understand and measure the context in which the maltreatment occurred, and the characteristics of the youth experiencing the maltreatment.

These findings suggest that high levels of negative affect in fact do not impact individuals on an immediate cognitive task, which is not set in the relationship context. Perhaps there is a "reactivity" of adolescent negative affect states that is protective (e.g., adolescent depression can have a reactive response to the social environment, wherein the teen can be depressed and unengaged, but when their friends come close, the teen perks up and presents as though he/she were not depressed; Fredrickson, 2001; Cole, Michel, & Teti, 1994). The COWAT is conducted in an interactive tester-youth format, thereby suggesting that the youth may have engaged in this protective process.

As indicated by prior research on the MAP dataset, youth involved produced lower rates of verbal responses and higher rates of ineligible responses as compared to

established norms for the verbal fluency task (Cook et al., 2009). As previously described, maltreatment has been suggested as a risk factor for lower and delayed cognitive skill development (Alessandri, 1991), and that the degree of impairment may depend on the severity of the maltreatment experienced (Ayoub et al., 2006). Present results suggest that maltreatment alone, regardless of the severity, may not be solely responsible for the delays. Rather it seems that other variables, not specifically studied here, may contribute to delayed cognitive development (Ayoub et al., 2006; Clemmons et al., 2007; Rossman, & Rosenberg, 1998). It is possible that the measures used here were unable to fully test the relationship between maltreatment and cognitive development in a way supported by previous research.

According to Bandura's (1973) social learning theory (SLT), maltreated children who have been exposed to maladaptive communicative patterns within their home environment would be delayed in the development of cognitive functions that are vital to successful completion of verbal fluency task (e.g., the ability to self-monitor, initiate and shift; Baron, 2004); however, many youth may have had compensatory experiences as the majority were in an in-care setting at the 6-month follow-up. Despite the fact that coding for emotionality could have brought forth an association between verbally fluency and dating violence in maltreated teens, the current study was unable to provide evidence to support this hypothesis. Maltreated children are at risk for potential deficits in expressive communication and internal state lexicons (e.g., Beeghly and Cicchetti, 1994), however this study was unable to determine the exact effects that maltreatment has on language development and communication. Perhaps coding for emotional valence on this specific

verbal fluency task does not tap into the impact that maltreatment and negative affect load could have on cognitive functioning.

Research Question 4: Does higher negative affective verbal fluency explain, in part, negative relational behaviours, such as dating violence victimization or perpetration?

Although the testing for a meditational role of verbal fluency in the well-established link between childhood maltreatment and dating violence was a potential analysis plan, these analyses could not be pursued due to the lack of correlation between maltreatment and verbal fluency, dating violence and verbal fluency, and maltreatment, negative affect and dating violence, which are recommended pre-requisites for mediational testing (e.g., Baron, & Kenny, 1986).

Clinical levels of negative affect were correlated with victimization and perpetration behaviours in both males and females (e.g., male's also showed correlations between sexual abuse and dating victimization and perpetration behaviours). Due to the significant correlations between victimization and perpetration and the negative affect index, the results suggest abuse-related negative affect may be an issue that needs to be dealt with directly in terms of prevention of violence re-victimization or continuing of violence relational dynamics. As a future area of exploration, the role of the negative affect index as a potential mediator of the maltreatment, dating violence relationship can be tested. Perhaps there is not a cognitive step to deal with in terms of explaining the relation between maltreatment and dating violence behaviours, but rather a negative affect step.

Although the current study found few associations between maltreatment and dating violence behaviours, Hollist et al.'s (2009) findings reiterate the need to investigate other areas from which negative affect could be growing within adolescents.

Other possible mechanisms or factors could be influencing the effects of maltreatment. Also of note is that other studies did not use a CPS sample and there may be some system issues that were not considered here (e.g., whether or not youth received counselling services).

The CADRI-R included items that assessed verbal threats as well as physical threats. This is a possible explanation for why we found few significant correlations between verbal fluency and dating violence. It could be the case that if we only selected the non-verbal items (e.g., strictly assaultive or sexually assaultive behaviours), that a consistent relationship could be found with verbal fluency. The possibility still exists that adolescents with high negative affect load will be vulnerable to developing an inability to cope and protect themselves from harmful interpersonal conflicts. Further detailed examinations of a link between dating violence and verbal fluency are needed before determining whether verbal fluency is relevant to the study of teen dating violence.

Although this study did not examine symptoms of schizophrenia, it is important to connect novel research, such as this study, to indirectly related research. Schenkel, Spaulding, DiLillo, and Silverstein (2005) compared the effects of childhood maltreatment on the development of schizophrenia in early adulthood. Researchers found that participants with histories of maltreatment were more likely to have an earlier age at first hospitalization, more previous hospitalizations, and more impaired performance on a task of visual-perceptual organization. Further analysis showed that as the number of different types of maltreatment increased so did severe impairment on neurological tests. As with the present study, Schenkel et al., (2005) found no relationships between maltreatment and measures of executive functioning (e.g., verbal processing speed or

verbal fluency). Although no relationship was found between verbal fluency and maltreatment, research exists suggesting that maltreatment affects other cognitive processes (such as verbal learning, working memory and impaired eye-tracking; Schenkel et al., 2005). These findings support the notion that maltreatment impacts the vulnerable adolescent on a neuropsychological level and that further investigations of that impact are warranted on CPS youth.

Implications for Practice

Most recent studies examining childhood mental health indicate that the prevalence of depression and anxiety disorders increase from childhood to adolescence (Axelson, & Birmaher, 2001). Given maltreated children's heightened risk of developing negative affect symptomatology, there may be a role for mental health screening among youth who are survivors of maltreatment.

An article by Pecora, Jensen, Hunter Romanelli, Jackson and Ortiz (2009) outlined the need for evidence-based practices among CPS and foster care settings. Current research indicates that children within the CPS system are at risk for developing significant developmental, behavioural and emotional problems (Clausen, Landsverk, Ganger, Chadwick, & Litrownik, 1998), however recent research is lacking sufficient detail about the types of problems that these children experience and the duration of these problems over time (McCrae, 2009). Also despite frequent utilization of mental health services by youth within the CPS system in comparison with community studies, the majority of children who were brought into the CPS system because of an abuse investigation and who had clinical mental health impairments had not received any care within twelve months after the investigation (Stahmer et al., 2005). To counter the

negative effects of childhood trauma, and the effects of being involved in the CPS

program, it is essential that programs aimed improving overall mental health are

developed and implemented.

Approximately 57% of this sample was utilizing CPS programs (in the form

living with foster parents or in groups homes). Researchers have examined the

effectiveness of combining cognitive-behavioural therapy[6] (CBT) programs with CPS

programs to reduce aggressive-oppositional behaviour in children and adolescents. Those

who participated in the CBT programs coupled with CPS programs were noted as having

decreased social and conduct problems and an increase in prosocial behaviour

(Nitkowski, Petermann, Buttner, Krause-Leipoldt, & Petermann, 2009). Perhaps through

the implementation of programs such as CBT training within CPS agencies, adolescents

can begin to counter the effects of maltreatment. Whether they are severe behavioural

problems (not seen presently), or more subtle expression of negative affect, (as seen

evidenced here by elevated levels of negative affect) CPS youth need support and

evidence based programs to begin to reverse the effects of maltreatment.

Limitations

Participants. The current results apply to CPS involved youth and cannot be

generalized outside of systems care (e.g., clinical samples of adolescents who have

experienced maltreatment who are not involved in a system). Other factors linked to the

system of child protection can potentially have an influence on the adolescent's outcome

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[6] Through the course of therapy, participants were given opportunities to analyze
conflicts, and correct distorted perceptions of social processes. Through the practice of
self-control and prosocial behaviour in social conflict situations, negative behaviours are
gradually substituted with socially acceptable behaviours (Petermann, & Petermann,
2006).

(e.g., relationship to case worker, investment of case worker, number of case workers assigned to the file, type and amount of intervention). Similarly, the current study did not assess parental education level nor did it examine the youth's involvement in school. Factors such as the number of absences from school or being held back a grade may affect the child's performance and development.

It is also important to note that the percentage of MAP female participants used in this study was higher than the MAP overall sample percentage. The higher rate of female participants could have skewed the results seen here. For example, it was only male experiences of sexual abuse that were associated with dating violence. Perhaps if the sample was more equalized the results could have differed slightly. This increase in female participants further limits our ability to generalize findings to CPS involved youth.

A general concern when using self-report measures is the accuracy of the participant's responses. Social desirability bias may make these youth more inclined to be inaccurate object observers of their real thoughts, feelings and actions. Especially with sensitive and private subject matter, adolescents may feel ashamed, guilty or vulnerable reporting honest responses (Wekerle, & Wolfe, 1999; Callahan et al., 2003; Herrenkohl et al., 2007; Vezina, & Hebert, 2007). These biases could have significantly affected the way in which responses were given by the current sample. When specifically investigating socially undesirable characteristics (e.g., negative affect) and behaviours (e.g., dating violence), youth could alter their experiences to seem more socially appropriate. Also adolescents who have been involved within the CPS system could have an understanding that reports of their expression of negative behaviours could impact

their current situation (e.g., placement, guardianship, treatment), thereby making the youth decrease their reports of negative affect and behaviours. Despite the fact that results were explained as confidential, the youth may still be tentative to provide accurate and honest responses out of fear, shame, guilt, or a need to be socially accepted.

Measures. The verbal fluency task does not tap into sentence structure, semantic or syntactical ability of the participants. This form of neuropsychological testing has yet to be applied to a CPS sample. Although previous research has shown that an association exists between maltreatment and language delays, here we can only generalize to verbal abilities as assessed by the F, A, S trials of the verbal fluency task.

Since the verbal fluency task is an indicator of brain functioning, in particular long-term memory, further neuropsychological research is required to examine associations between the two, as it is currently absent from literature. Expanding further on that idea, further work may code the verbal fluency task for strategies and categorization (e.g., word-sort), thereby allowing us to examine the executive functioning of CPS youth.

The CTQ does not tap into the effects of witnessing interparental violence (IPV). As seen in recent studies (Vickerman, & Margolin, 2007) the effects of IPV can be as severe as being the victim of abuse and neglect. Also as indicated by previous studies (Edleson, & Gassman-Pines, 2006) witnessing IPV is a current issue in maltreatment reporting in children's service agencies.

The low test-retest reliability of the CADRI is a limitation, as the questionnaire may not adequately be capturing dating violence, or it could be an indication that youth are changing partners within the 6-months between MAP testing sessions. It remains to

be determined whether more test-retest stability exists with more discrete items (e.g., physical forms of violence versus verbal threats). Further research into the reliability of reporting on the CADRI-R is required, as well as considering the changes in dating violence experiences across fairly short time frames of reporting. A longitudinal perspective allows for an understanding of a typical way of resolving conflict within a teen dating relationship, which remains to be considered in the literature beyond a follow-up of a year (e.g., Wolfe et al., 2004).

The questionnaires employed here did not assess whether or not the person that was maltreating them was an attachment figure (e.g., an adult who is sensitive and responsive in social interactions; Bowlby, 1969). Attachment theory would predict that the closer the abuser was to the child (e.g., the more invested the caregiver was), the greater the negative consequences would be for the child (Bowlby, 1969). Abuse from a primary caregiver would also initiate internal working models (e.g., guides for the individual to follow in terms of thoughts, feelings and expectations in later relationships; Bowlby, 1969) for the child that justifies abuse as the expected way of behaving within a relationship. Therefore, when maltreated children become older, attachment theory would predict that there would be an increased likelihood to select internal working model-coherent romantic partners in adolescence (Wekerle, & Wolfe, 1999). Thus, the teen dating partner may resemble the maltreating caregiver in abusiveness, and set the stage for a similarly impaired verbal communication pattern in the adolescent partnership as with the caregiver relationship.

Study design. To create the negative affect index, this study utilized this sample of MAP youth to justify the creation of the index, and used the same sample to test potential

relations to the index. This was reasonable given the exploratory nature of this study. Further research needs to consider the value of a negative affect index by conducting a psychometric study on another sample of CPS youth. Alternative strategies, such as factor analyses, may be useful to consider whether the factor structures are similar to the manuals, given that CPS youth have not been separately considered as a population, in most questionnaires. This issue applies also to ethnic groups as well.

A limitation to the creation of a negative affect index is that the index is formed by three differently standardized scales, all of which are self-report. A conservative way to approach the index is to view it as the youth's perception of negative affect. More objective assessments include clinical interviews, and other informants (e.g., caregiver, teacher, and peer). Supplemental data to corroborate youth's symptoms may have provided the support needed to find associations between negative affect and cognitive ability.

Although this study has made significant process in determining how to code for emotionality on the COWAT verbal fluency task, there is still much that needs to be done in standardizing the coding process. Words often have multiple meanings depending on the context in which they were used. Within today's growing technological culture, word meanings and associations are rapidly changing. Researchers therefore need to be aware of the current slang and culture references to better understand the potential meaning behind a response. Also when completing 6-month verbal fluency tasks, testers were not responsible for clarifying ambiguous responses to the coders of the task. To counter these effects MAP testers now are responsible for entering and coding participant's responses

to ensure greater accuracy. Also the verbal fluency 'dictionary of coding' to which all coders refer is constantly being revised.

Differences between male and female responses to their maltreatment were not accounted for here, such as how maltreatment experiences are perceived and processed (e.g., Meyerson, Long, Miranda, & Marx, 2002), with such issues as self-blame and guilt (McGee, Wolfe, & Olson, 2001) as suggested by the literature as fruitful avenues for exploring gender differences. Different significant correlations were found for males and females; therefore suggesting that the way males encode their maltreatment experience may be different from how females would do so.

Within the operationalization of child maltreatment for this study, witnessing IPV was not directly included. Edleson, Gassman-Pines, and Hill (2006) outlined the benefits and challenges of including IPV. Although the inclusion of IPV significantly raised the number of child neglect reports made, most Minnesota counties who implemented the legislation soon withdrew it due to a lack of resources within CPS to manage the rise in case loads effectively (Edleson et al., 2006). More recently Geffner, Griffin, and Lewis (2008) outlined the gaps and needs of including IPV in child maltreatment reporting. The authors concluded that IPV needs to be acknowledged as a public health problem, that child development (in particular neurodevelopment) should be addressed in all facets of child welfare (e.g., research, policy, assessment, practice, and training), and child-centered prevention and interventions within the family context need to be developed through the use of multidisciplinary teams to produce comprehensive protection for the child and family.

By only assessing a single time point, it may be the case that the picture we receive of dating violence is biased. Our assessment of childhood maltreatment refers the history of maltreatment, as opposed to the dating violence questionnaire, which questions past and potentially current forms of dating violence. The CADRI-R covers dating violence within the past 12 months. Also the other measures varied in the timeframes used to answer questions (e.g., the BSI asks participants to report symptoms they've experienced in the past week). The results may be biased depending upon a recent violent experience or a lack of recent violent experiences. By looking specifically at the 6-month time point, the whole picture of a dating violence experience is incomplete.

Conclusion

Although previous literature has found that children who have experienced maltreatment often show a range of problems in managing negative affect (Wekerle, & Wolfe, 1999), those problems were not evidenced here. These results suggest that a gender-specific approach to understanding the impact of maltreatment may prove fruitful, and it is one that has been under-attended in the literature to date. This study has opened the door for advancing research on maltreated children, in particular, adolescents who are involved in the CPS system. Further research in this area could potentially call for the creation of intervention programs aiming to reduce the pervasive effects of maltreatment and breaking the cycle of violence.

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APPENDIX A: YOUTH AND GUARDIAN CONSENT FORMS FOR PARTICIPATION IN MAP PROJECT

CONSENT TO PARTICIPATE IN A RESEARCH STUDY: Youth Form (age 16 +)

Title of Study: **Maltreatment and Adolescent Pathways (MAP): Longitudinal Study**

INVESTIGATORS

Christine Wekerle, Ph.D., Principal Investigator, Associate Professor –
Education, Psychology, Psychiatry, University of Western Ontario
Anne-Marie Wall, Ph.D., Co-Investigator, York University
Harriet MacMillian, M.D., Co-investigator, McMaster University
Nico Trocme, Ph.D., Co-investigator, McGill University
Michael Boyle, Ph.D., Co-investigator, McMaster University
Eman Leung, M.A., Co-investigator, University of Toronto
Randall Waechter, M.A., Project Manager, York University

PURPOSE
- **You are being asked to agree to participate in the MAP research study.**
- **The study evaluates teen's opinions, attitudes, feelings and behaviors. A main focus concerns teen health risk and protective behaviors.**
- **The main goal of this study is to better understand how teens are doing and what is most beneficial for supporting teen health.**

PROCEDURE
- If you agree to participate in this research study, you will be asked to take part in brief interviews and to complete a series of questionnaires. These questionnaires will be completed on five separate occasions (initial participation as well as at 6 months, one year, 18 months, and two years from the initial participation date). One year after your initial participation date, you will also be asked to complete a brief test to assess your learning abilities. Two and a half years after your initial participation date, you may also be asked to complete some computerized tasks that measure attention. We will also ask to take a sample of your saliva with a sterile Q-tip. This sample will be analyzed for signs of stress in your body. Finally, you will be asked to take part in a diagnostic interview for psychiatric conditions.
- The entire package of questions and tasks will take approximately 4 hours per session to answer with breaks given as needed.
- If not participating in the MAP study at home, you will be reimbursed for your travel to and from CAMH with public transit tokens. The Centre for Addiction and Mental Health is a partner site with the University of Western Ontario, and is located in Toronto.
- Participation in the study will involve answering questions about:
  - Friendships and dating relationships
  - How you deal with anger and conflict in relationships
  - Difficult experiences you may have had while growing up including where applicable, your views about being loved, fed, and emotionally, physically, or sexually maltreated.
  - Experiences you may have had that included the use of substances, risky sexual practices, and positive health activities (e.g., exercise)
  - Your thoughts and feelings

RISKS
- Although there are no known risks with participating in this study, completing the questionnaires may raise some questions in your mind. These questions are related to your belief systems, interpersonal relationships, and negative experiences, and may make some youth feel uncomfortable or upset.
- Should any concerns arise, you will have an opportunity to discuss them with trained mental health professionals.

BENEFITS
- Through your participation, we hope that you will gain a better understanding of how teens like you are doing and what might be needed to support the health of teens.
- You will also receive a list of helpful contacts for future reference.

COMPENSATION
- Your will be compensated for your time (at minimum wage - $7.00 / 4 hours to a total of $28.00 per assessment) in completing the questionnaire packages, in appreciation for your assistance with the study. This compensation will be given at the end of each session.

CONFIDENTIALITY
- All information will be kept confidential. You will not be required to indicate your name on any of the questionnaires you complete.
- Consent forms are signed and stored separately from the questionnaires.
- All materials (e.g., consent forms, questionnaires, saliva test results) will be kept in a locked cabinet.
- Only the investigators listed above and their research staff will have access to the information, which will otherwise be kept in a locked cabinet.
- Your name will not appear on any questionnaires or any report or presentations that may arise from the study.
- **Limits to confidentiality**: As is the case with all research, information given by youth remains confidential with some exceptions. The researchers are required to report child abuse or neglect in accordance with the law. Any disclosures of abuse or neglect by you will be followed up with the appropriate authorities, as required by law. Whether or not there is information that requires reporting, you may be referred to appropriate support systems. Serious indications of risk to the self or to others will also be followed up with the appropriate support systems and authorities.

RIGHT TO REFUSE
- Participation is voluntary, and you are under no obligation to take part in the study. Your choice to take part or not will in no way affect any service that you currently receive or may receive in the future.
- You are free to raise questions or concerns throughout the study and are free to withdraw from the research at any time, without explanation.
- You have the right to refuse to answer any individual questions that are part of the research or any specific task or component of the research study.

QUESTIONS

Should you have any questions or concerns about this study, or if any issues arise because of your participation, please feel free to contact the investigator:

Dr. Christine Wekerle, Principal Investigator
Faculty of Education
University of Western Ontario
1137 Western Road
London, Ontario, Canada N6G1G7

If you have any questions about the conduct of this study or your rights as a research subject you may contact the Director, Office of Research Ethics, The University of Western Ontario, 519-661-3036 or email at: ethics@uwo.ca.

I have read the Letter of Information, have had the nature of the study explained to me and I agree to participate. All questions have been answered to my satisfaction.

_____

Print participant name

_____   _____

Signature of youth   Date

_____   _____

Signature of person obtaining informed consent   Date

You will be provided with a copy of this letter once it has been signed.

CONSENT TO PARTICIPATE IN A RESEARCH STUDY: Parent / guardian form

Title of Study: **Maltreatment and Adolescent Pathways (MAP): Longitudinal Study**

INVESTIGATORS
> **Christine Wekerle, Ph.D., Principal Investigator, Associate Professor –**
> > **Education, Psychology, Psychiatry, University of Western Ontario**
> > Anne-Marie Wall, Ph.D., Co-Investigator, York University
> **Harriet MacMillian, M.D., Co-investigator, McMaster University**
> **Nico Trocme, Ph.D., Co-investigator, McGill University**
> **Michael Boyle, Ph.D., Co-investigator, McMaster University**
> **Eman Leung, M.A., Co-investigator, University of Toronto**
> **Randall Waechter, M.A., Project Manager, York University**

PURPOSE
- **You are being asked to give your consent for your son/daughter/ward's participation in the MAP research study.**
- **The study is designed to evaluate youth's opinions, attitudes, feelings and behaviors. A main focus concerns teen health risk and protective behaviors (psychological problems and strengths, substance use, risky sexual practices, aggression and positive interpersonal functioning in adolescent relationships, extracurricular activities/exercise etc.).**
- **The main goal of this study is to better understand how teens are doing and what is most beneficial for supporting youth health and to evaluate our ability to do this kind of research.**

PROCEDURE
- If you agree to participate in this research study, your son or daughter will be asked to participate in brief interviews and to complete a series of questionnaires on five separate occasions (initial participation as well as at 6 months, one year, 18 months, and two years from the initial participation date). One year after the initial participation date, your son or daughter will also be asked to complete a brief test to assess his/her learning abilities. Two and a half years after initial participation, your son/daughter may also be asked to complete some computerized tasks that measure attention. We will also ask to take a sample of your son/daughters saliva with a sterile Q-tip. This sample will be analyzed for signs of stress as he/she completes the questionnaire package and tasks. Finally, your son or daughter will be asked to take part in a diagnostic interview for psychiatric conditions.
- The entire package of questions will take approximately 4 hours per session to answer with breaks given as needed.
- If not participating in the MAP study at home, your son or daughter will be reimbursed for their travel to and from the Centre for Addiction and Mental Health (our affiliate site in Toronto with the University of Western Ontario) with public transit tokens.
- Participation in the study will involve your son or daughter answering questions about:
  - Friendships and dating relationships
  - How they deal with anger and conflict in relationships
  - Difficult experiences they may have had while growing up including, where applicable, their views about being loved, adequately fed, and emotionally, physically, or sexually maltreated.
  - Experiences they may have had as teens including use of substances, risky sexual practices, and positive health behaviors (e.g., exercise)
  - Their thoughts and feelings

RISKS
- Although there are no known risks with participating in this study, completing the questionnaires may potentially raise some questions about belief systems, interpersonal relationships, and negative experiences, and may make some youth feel uncomfortable or upset.
- Should any concerns arise, your son or daughter will have an opportunity to discuss them with trained mental health professionals.

BENEFITS
- Through your son or daughter's participation, we hope that they will gain a better understanding of how youth are functioning and what might be needed to support their health.
- As well, all youth will receive a list of helpful contacts for their future reference.

COMPENSATION
- Your son or daughter will be compensated for their time (at minimum wage - $7.00 / 4 hours to a total of $28.00 per assessment) in completing the questionnaire packages, in appreciation for his or her assistance with the study. This compensation will be given at the end of each session.

CONFIDENTIALITY
- All information will be kept confidential. You or your child will not be required to indicate their names on any of the questionnaires they complete.
- Consent forms are signed and stored separately from the questionnaires.
- All materials (e.g., consent forms, questionnaires, saliva test results) will be kept in a locked cabinet.
- Only the investigators listed above and their research staff will have access to the information, which will otherwise be kept in a locked cabinet.
- Your son or daughter's name will not appear on any questionnaires or any report or presentations that may arise from the study.
- **Limits to confidentiality**: As is the case with all research, information given by the youth remains confidential with some exceptions. The researchers are required to report child abuse or neglect in accordance with the law. Any disclosures of abuse or neglect by your son or daughter will be followed up with the appropriate authorities, as required by law. Whether or not there is information that requires reporting, your son / daughter may be referred to appropriate support systems. Serious indications of risk to the self or to others will also be followed up with the appropriate support systems and authorities.

RIGHT TO REFUSE
- Participation is voluntary, and you are under no obligation to agree to have your son or daughter in the study, and your choice will in no way affect any services that you or your child currently receives or may receive in the future.
- You are free to raise questions or concerns throughout the study and are free to withdraw your son or daughter from the research program at any time, without explanation.
- Your son / daughter has the right to refuse to answer any individual questions that are part of the research evaluation or any specific task or component of the research study.

QUESTIONS
Should you have any questions or concerns about this study, or if any issues arise because of your son or daughter's participation, please feel free to contact the investigator:

Dr. Christine Wekerle, Principal Investigator
Faculty of Education
University of Western Ontario
1137 Western Road
London, Ontario, Canada N6G1G7

If you have any questions about the conduct of this study or your rights as a research subject you may contact the Director, Office of Research Ethics, The University of Western Ontario, 519-661-3036 or email at: ethics@uwo.ca.

I have read the Letter of Information, have had the nature of the study explained to me and I agree to participate. All questions have been answered to my satisfaction.

_____

Print participant name

_____   _____

Signature of parent / guardian   Date

_____   _____

Signature of assenting youth   Date

_____   _____

Signature of person obtaining informed consent   Date

You will be provided with a copy of this letter once it has been signed.

APPENDIX B: UNIVERSITY OF WESTERN ONTARIO RESEARCH ETHICS BOARD APPROVAL

Office of Research Ethics

The University of Western Ontario
Room 00045 Dental Sciences Building, London, ON, Canada N6A 5C1
Telephone: (519) 661-3036 Fax: (519) 850-2466 Email: ethics@uwo.ca
Website: www.uwo.ca/research/ethics

Western

Use of Human Subjects - Ethics Approval Notice

Principal Investigator: Dr. C. Wekerle
Review Number: 11382S   **Revision Number:**
Protocol Title: Maltreatment and Adolescent Pathways Longitudinal Study
Department and Institution: Psychology, University of Western Ontario
Sponsor: CANADIAN INSTITUTE OF HEALTH RESEARCH
Ethics Approval Date: May 18, 2005   **Expiry Date:** March 31, 2010
Documents Reviewed and Approved: UWO Protocol, Letters of Information & Consent
Documents Received for Information:

This is to notify you that The University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects (REB) which is organized and operates according to the Tri-Council Policy Statementand the applicable laws and regulations of Ontario has granted expedited approval to the above named research study on the approval date noted above.

This approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the REB's periodic requests for surveillance and monitoring information. If you require an updated approval notice prior to that time you must request it using the UWO Updated Approval Request Form.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the REB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of monitor, telephone number). Expedited review of minor change(s) in ongoing studies will be considered. Subjects must receive a copy of the signed information/consent documentation.

Investigators must promptly also report to the REB:

a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;

b) all adverse and unexpected experiences or events that are both serious and unexpected;

c) new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to this office for approval.

Members of the REB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the REB.

Chair of REB: Dr. Jerry Paquette
Deputy Chair: Susan Hoddinott

Ethics Officer to Contact for Further Information			
☒ Karen Kueneman	☐ Janice Sutherland	☐ Susan Underhill	☐ Jennifer McEwen

This is an official document. Please retain the original in your files.   Faxed: Y/N   1 9 2005
Date:

UWO REB Ethics Approval   11382S   Page 1 of 1
2005-03-01(NM-EXP)

Western
Education

Graduate Programs & Research Office
Faculty of Education
The University of Western Ontario
1137 Western Road
London, Ontario, Canada
N6G 1G7

September 22, 2009

Re: Maltreatment and Adolescent Pathways (MAP) Project database utilization

Dear Ms. Joanna Kozlowska,

This letter is to confirm that Nicole Reid, in the Counselling Program, is entitled to utilized the Maltreatment and Adolescent Pathways (MAP) Project database for her Master's thesis, for which I am the thesis supervisor, with Drs. Leschied and Brown as her thesis committee members.

If you would like more information, or would like to contact me, please email me at

Sincerely,

Christine Wekerle, Ph.D.
Adjunct Research Professor, Education
The University of Western Ontario

APPENDIX C: CHILDHOOD TRAUMA QUESTIONNAIRE - REVISED

CTQ-R

These questions ask about some of your experiences growing up as a child. Although these questions are of a personal nature, please try to answer as honestly as you can. For each question, fill in the box that best describes how you feel.

When I was growing up...	Never True	Rarely True	Some-times True	Often True	Very Often True
1. I didn't have enough to eat.	☐	☐	☐	☐	☐
2. I knew that there was someone to take care of me and protect me.	☐	☐	☐	☐	☐
3. People in my family called me things like "stupid," "lazy," or "ugly."	☐	☐	☐	☐	☐
4. My parents were too drunk or high to take care of the family.	☐	☐	☐	☐	☐
5. There was someone in my family who helped me feel that I was important or special.	☐	☐	☐	☐	☐
6. I had to wear dirty clothes.	☐	☐	☐	☐	☐
7. I felt loved.	☐	☐	☐	☐	☐
8. I thought that my parents wished I had never been born.	☐	☐	☐	☐	☐
9. I got hit so hard by someone in my family that I had to see a doctor or go to the hospital.	☐	☐	☐	☐	☐
10. There was nothing I wanted to change about my family.	☐	☐	☐	☐	☐
11. People in my family hit me so hard that it left me with bruises or marks.	☐	☐	☐	☐	☐
12. I was punished with a belt, a board, a cord, or some other hard object.	☐	☐	☐	☐	☐
13. People in my family looked out for each other.	☐	☐	☐	☐	☐
14. People in my family said hurtful or insulting things to me.	☐	☐	☐	☐	☐
15. I believe that I was	☐	☐	☐	☐	☐

physically abused.					
16. I had the perfect childhood.	☐	☐	☐	☐	☐
17. I got hit or beaten so badly that it was noticed by someone like a teacher, neighbour, or doctor.	☐	☐	☐	☐	☐

When I was growing up...	Never True	Rarely True	Sometimes True	Often True	Very Often True
18. I felt that someone in my family hated me.	☐	☐	☐	☐	☐
19. People in my family felt close to each other.	☐	☐	☐	☐	☐
20. Someone tried to touch me in a sexual way, or tried to make me touch them.	☐	☐	☐	☐	☐
21. Someone threatened to hurt me or tell lies about me unless I did something sexual with them.	☐	☐	☐	☐	☐
22. I had the best family in the world.	☐	☐	☐	☐	☐
23. Someone tried to make me do sexual things or watch sexual things.	☐	☐	☐	☐	☐
24. Someone molested me.	☐	☐	☐	☐	☐
25. I believe that I was emotionally abused.	☐	☐	☐	☐	☐
26. There was someone to take me to the doctor if I needed it.	☐	☐	☐	☐	☐
27. I believe that I was sexually abused.	☐	☐	☐	☐	☐
28. My family was a source of strength and support.	☐	☐	☐	☐	☐
29. I believe that I was neglected.	☐	☐	☐	☐	☐

APPENDIX D: TRAUMA SYMPTOM CHECKLIST FOR CHILDREN

<u>TSCC</u>

The items that follow describe things that youth sometimes think, feel, or do. Read each item, then mark how often in happens to you by drawing a circle around the correct number.

Circle **0** if it **never** happens to you.		0	1	2	3
Circle **1** if it happens **sometimes**.	0	1	2	3	
Circle **2** if it happens **lots of times**.		0	1	2	3
Circle **3** if it happens **almost all the time**.		0	1	2	3

For example, if you are late for school sometimes, you would circle the 1 for this item, like this:

| Being late for school. | 0 | 1 | 2 | 3 |

	Never	Some-times	Lots of times	Almost all of the time
1. Bad dreams or nightmares	0	1	2	3
2. Feeling afraid something bad might happen	0	1	2	3
3. Scary ideas or pictures just pop into my head	0	1	2	3
4. Wanting to say dirty words	0	1	2	3
5. Pretending I am someone else	0	1	2	3
6. Arguing too much	0	1	2	3
7. Feeling lonely	0	1	2	3
8. Touching my private parts too much	0	1	2	3
9.Feeling sad or unhappy	0	1	2	3
10. Remembering things that happened that I didn't like	0	1	2	3
11. Going away in my mind, trying not to think	0	1	2	3

12. Remembering scary things	0	1	2	3
13. Wanting to yell and break things	**0**	**1**	**2**	**3**
14. Crying	0	1	2	3
15. Getting scared all of a sudden and don't know why	**0**	**1**	**2**	**3**

The items that follow describe things that youth sometimes think, feel, or do. Read each item, then mark how often in happens to you by drawing a circle around the correct number.

	Never	Some-times	Lots of times	Almost all of the time
16. Getting mad and can't calm down	0	1	2	3
17. Thinking about having sex	**0**	**1**	**2**	**3**
18. Feeling dizzy	0	1	2	3
19. Wanting to yell at people	**0**	**1**	**2**	**3**
20. Wanting to hurt myself	0	1	2	3
21. Wanting to hurt other people	**0**	**1**	**2**	**3**
22. Thinking about touching other people's private parts	0	1	2	3
23. Thinking about sex when I don't want to	**0**	**1**	**2**	**3**
24. Feeling scared of men	0	1	2	3
25. Feeling scared of women	**0**	**1**	**2**	**3**
26. Washing myself because I feel dirty on the inside	0	1	2	3
27. Feeling stupid or bad	**0**	**1**	**2**	**3**
28. Feeling like I did something wrong	0	1	2	3
29. Feeling like things aren't real	**0**	**1**	**2**	**3**

	Never	Some-times	Lots of times	Almost all of the time
30. Forgetting things, can't remember things	0	1	2	3
31. Feeling like I'm not in my body	**0**	**1**	**2**	**3**
32. Feeling nervous or jumpy inside	0	1	2	3
33. Feeling afraid	**0**	**1**	**2**	**3**
34. Not trusting people because they might want sex	0	1	2	3

The items that follow describe things that youth sometimes think, feel, or do. Read each item, then mark how often in happens to you by drawing a circle around the correct number.

	Never	Some-times	Lots of times	Almost all of the time
35. Can't stop thinking about something bad that happened to me	**0**	**1**	**2**	**3**
36. Getting into fights	0	1	2	3
37. Feeling mean	**0**	**1**	**2**	**3**
38. Pretending I'm somewhere else	0	1	2	3
39. Being afraid of the dark	**0**	**1**	**2**	**3**
40. Getting scared or upset when I think about sex	0	1	2	3
41.Worrying about things	**0**	**1**	**2**	**3**
42. Feeling like nobody likes me	0	1	2	3
43. Remembering things I don't want to remember	**0**	**1**	**2**	**3**
44. Having sex feelings in my body	0	1	2	3
45. My mind going empty or blank	**0**	**1**	**2**	**3**
46. Feeling like I hate people	0	1	2	3
47. Can't stop thinking about sex	**0**	**1**	**2**	**3**

48. Trying not to have any feelings	0	1	2	3
49. Feeling mad	0	1	2	3
50. Feeling afraid somebody will kill me	0	1	2	3
51. Wishing bad things had never happened	0	1	2	3
52. Wanting to kill myself	0	1	2	3
53. Daydreaming	0	1	2	3
54. Getting upset when people talk about sex	0	1	2	3

APPENDIX E: BRIEF SYMPTOM INVENTORY

BSI

How much has each of the problems listed below distressed or bothered you in the past week (7 days) including today.

How often have the following bothered you in the past week (including today):	Not at all	A little bit	Moderately	Quite A bit	Extremely
1. Nervousness or shakiness inside	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
2. Faintness or dizziness	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
3. The idea that someone else can control your thoughts	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
4. Feeling others are to blame for most of your troubles	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
5. Trouble remembering things	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
6. Feeling easily annoyed or irritated	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
7. Pains in heart or chest	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
8. Feeling afraid of open spaces or on the streets	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
9. Thoughts of ending your life	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
10. Feeling that people can not be trusted	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
11. Poor appetite	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
12. Suddenly scared for no reason	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
13. Temper outbursts that you could not control	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$

How often have the following bothered you in the past week (including today):	Not at all	A little bit	Moderately	Quite A bit	Extremely
14. Feeling lonely even when you are with people	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
15. Feeling blocked in getting things done	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
16. Feeling lonely	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
17. Feeling blue	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
18. Feeling no interest in things	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
19. Feeling fearful	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
20. Your feelings being easily hurt	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
21. Feeling that people are unfriendly or dislike you	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
22. Feeling inferior to others	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
23. Nausea or upset stomach	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
24. Feeling that you are being watched or talked about by others	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
25. Trouble falling asleep	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
26. Having to check and double check what you do	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
27. Difficulty making decisions	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
28. Feeling afraid to travel on buses, subways or trains	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
29. Trouble getting your breath	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
30. Hot or cold spells	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$

How often have the following bothered you in the past week (including today):	Not at all	A little bit	Moderately	Quite a bit	Extremely
31. Having to avoid certain things, places or activities because they frighten you	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
32. Your mind going blank	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
33. Numbness or tingling in part of your body	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
34. The idea that you should be punished for your sins	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
35. Feeling hopeless about the future	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
36. Trouble concentrating	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
37. Feeling weak in parts of your body	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
38. Feeling tense or keyed up	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
39. Thoughts of death or dying	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
40. Having urges to beat, injure or harm someone	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
41. Having urges to break or smash things	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
42. Feeling very self conscious with others	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
43. Feeling uneasy in crowds	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
44. Never feeling close to another person	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
45. Spells of terror or panic	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
46. Getting into frequent arguments	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4

How often have the following bothered you in the past week (including today):	Not at all	A little bit	Moderately	Quite a bit	Extremely
47. Feeling nervous when you are left alone	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
48. Others not giving you proper credit for your achievements	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
49. Feeling so restless you couldn't sit still	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
50. Feelings of worthlessness	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
51. Feeling that people will take advantage of you when you let them	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
52. Feelings of guilt	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
53. The idea that something is wrong with your mind	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$

APPENDIX F: STATE-TRAIT ANGER EXPRESSION INVENTORY 2

STAXI-2 Trait

Read each of the following statement that people have used to describe themselves, and then mark the appropriate box to indicate how you **generally** feel or react. There are no right or wrong answers. Do not spend too much time on any one statement. Mark the answer that **best** describes how you **generally** feel or react.

	Almost never	Some-times	Often	Almost always
1. I am quick tempered	☐	☐	☐	☐
2. I have a fiery temper	☐	☐	☐	☐
3. I am a hotheaded person	☐	☐	☐	☐
4. I get angry when I'm slowed down by others' mistakes	☐	☐	☐	☐
5. I feel annoyed when I am not given recognition for doing good work	☐	☐	☐	☐
6. I fly off the handle	☐	☐	☐	☐
7. When I get mad, I say nasty things	☐	☐	☐	☐
8. It makes me furious when I am criticized in front of others	☐	☐	☐	☐
9. When I get frustrated, I feel like hitting someone	☐	☐	☐	☐
10. I feel infuriated when I do a good job and get a poor evaluation	☐	☐	☐	☐

Staxi2 Expression

Everyone feels angry or furious from time to time, but people differ in the ways that they react when they are angry. A number of statements are listed below which people use to describe their reactions when they feel *angry* or *furious*. Read each statement and then mark the appropriate box to indicate how **often** you **generally** react or behave in the manner described when you are feeling angry or furious. There are no right or wrong answers. Do not spend too much time on any one statement.

How I Generally React or Behave When Angry or Furious…

	Almost never	Sometimes	Often	Almost always
1. **I control my temper**	☐	☐	☐	☐
2. I express my anger	☐	☐	☐	☐
3. **I take a deep breath and relax**	☐	☐	☐	☐
4. I keep things in	☐	☐	☐	☐
5. **I am patient with others**	☐	☐	☐	☐
6. If someone annoys me, I'm apt to tell him or her how I feel	☐	☐	☐	☐
7. **I try to calm myself as soon as possible**	☐	☐	☐	☐
8. I pout or sulk	☐	☐	☐	☐
9. **I control my urge to express my angry feelings**	☐	☐	☐	☐
10. I lose my temper	☐	☐	☐	☐
11. **I try to simmer down**	☐	☐	☐	☐
12. I withdraw from people	☐	☐	☐	☐
13. **I keep my cool**	☐	☐	☐	☐
14. I make sarcastic remarks to others	☐	☐	☐	☐
15. **I try to soothe my angry feelings**	☐	☐	☐	☐

16. I boil inside, but I don't show it	☐	☐	☐	☐
17. I control my behavior	☐	☐	☐	☐

	Almost never	Sometimes	Often	Almost always
18. I do things like slam doors	☐	☐	☐	☐
19. I endeavor to become calm again	☐	☐	☐	☐
20. I tend to harbor grudges that I don't tell anyone about	☐	☐	☐	☐
21. I can stop myself from losing my temper	☐	☐	☐	☐
22. I argue with others	☐	☐	☐	☐
23. I reduce my anger as soon as possible	☐	☐	☐	☐
24. I am secretly quite critical of others	☐	☐	☐	☐
25. I try to be tolerant and understanding	☐	☐	☐	☐
26. I strike out at whatever infuriates me	☐	☐	☐	☐
27. I do something relaxing to calm down	☐	☐	☐	☐
28. I am angrier than I am willing to admit	☐	☐	☐	☐
29. I control my angry feelings	☐	☐	☐	☐
30. I say nasty things	☐	☐	☐	☐
31. I try to relax	☐	☐	☐	☐
32. I'm irritated a great deal more than people are aware of	☐	☐	☐	☐

APPENDIX G: CONTROLLED ORAL WRITTEN ASSOCIATION TASK (COWAT)

VF-1

For Interviewer:

*1. SAY: "Give me as many words as you can think of that begin with the **letter F.** Do not give names of persons – like Frank or Florence – or names of states or cities – like Florida or Fresno – or other proper names. Begin".*   *Allow 60 seconds.*

15 seconds Block 1	_15 seconds Block 2_	_15 seconds Block 3_	_15 seconds Block 4_

2. SAY: "Now give me as many words as you can think of that begin with the letter A. Again do not give proper names. Begin".   *Allow 60 seconds*

15 seconds Block 1	15 seconds Block 2	15 seconds Block 3	15 seconds Block 4

3. SAY: "Now give me as many words as you can think of that begin with the letter S. Again do not give proper names. Begin."   *Allow 60 seconds*

15 seconds Block 1	15 seconds Block 2	15 seconds Block 3	15 seconds Block 4

APPENDIX H: VERBAL FLUENCY CODING GUIDELINES AND MANUAL

Verbal Fluency Emotion Coding Guidelines[7]

Words to be coded as POSITIVE		
F	A	S
fabulous	able	sacred
facilitate, facilitator	abundance	safe, safety
fair, fairy	absolute, absolutely	saint
fairytale	accept, acceptance	salute
faith	accommodate	satisfy, satisfaction
fame, famous	accomplish	savior
fancy	accurate	savor, savour, savory,
fantabulous	achievement	savoury
fantastic	acknowledge	save, saved
fantasy	acquire, acquirement	savvy
favor, favour	adapt	scholarship
favorite	admire	secure, security
fawn	advantage	sensual
feast	adventure	sensuous
feed	advocate	serene
fertility	affection	sexy
festive, festival	affirm, affirmative	share
fidelity	affluent	sincere, sincerely
fiesta	afford	sing, singing
fitness	agile, agility	sleek
flabbergast	aid	smart
flawless	alleviate	smile
flourish	alive	smooth, smoothing
fluorescent	alliance	sober
fond	allure	social, sociable
food	almighty	solace
forgive, forgiven	alright	sooth, soothe
foresight	ally	sophisticated
forte	amazing	sparkle
fortify	amen	spectacular
fortitude	ambition, ambitious	spiderman
fortune	amicable	spiff
foster	amusement	spirit
found, founded	angel	stability
fragrant, fragrance	antibiotic	stamina
free	antiseptic	steady
freedom	apology, apologize	strength
fresh	applaud	strong
friend, friendly	appreciate, appreciation	stupendous
frisky	appropriate	stylish

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[7] As of February 23rd, 2010

frolic	approve	sublime
fun, funny	aptitude	success
	ark	summit
	aroma	sunny
	artistic	superb
	aspire, aspiration	superhero
	assert	superior
	asset, assets	superman
	assure	superstar
	astonish, astonishment	supple
	athletic	support
	atone	supreme
	attract, attractive	survive
	authentic	sweet
	autonomy	symmetry
	available	sympathy
	aware	symphony
	awe, awesome	synergy, synergies
	aye	

Words to be coded as NEGATIVE		
F	A	S
fade	abandon	sabotage
faggot	abnormal	sacrifice, sacrificial
fail, failure	abrasive	sad
faint	abuse	sarcasm, sarcastic
fake	accused	SARS
fallacy	ache, aching	Satan, satanic
false	addict	satire
famished	addictive	savage
fangs	afraid	scallywag
fatigue	aggressive	scam
fault	agony	scandal
faux	ailment	scar
faze	allergies	scared, scary
fear, fearful	aloof	scold
feeble	amiss	scream
ferocious	amnesia	segregation
fetish	amputate, amputator,	seldom
fib	amputation	self-conscious
fiend	anarchy	selfish
fight	anger	senile
filthy	anguish	severe
finicky	animosity	shabby
flabby	annoy, annoying	shame

flagellant	anorexia	sheepish
flammable	annulled	shit
flaw	antagonist	shocked, shocking
flee	anti	shove
flinch	antichrist	shun
flood	antsy	shy
flop	anxious, anxiety	sin, sinful
flu	aneurysm	sinister
flub, flubber, flubbing	apathy	sinking
flunk	appall, appalled, appalling	sissy
fluster, flustered	arduous	slacker
foe	argue	slander
folly	argument	slap
fondle	armageddon	slave
fool	arrest	slain
foolish	arrogant	slay
forfeit	arson	slobber, slobbering, slobbery
forget	asphyxiate	slog
forlorn	assassin	sloppy
fornicate	assault	slump
forsake	asshole	slut
fractious	asinine	smelly
frail	ass-wipe	smack
frankenstein	atrocity	smite
frantic	attack	smudge
fraud	autism, autistic	snarl
freak, freaks	avalanche	snatch
frenzy	avenge	sneak
fright, frightened	awful	snicker
frustrate, frustrated	awkward	snob
foul		snoop
fret		snotty
frown		sob
frumpy		sodom
fuck		somber
fugitive		sore
fumble		sorrow
fury, furious		sorry
fuss		sos
fussy		sour
		spank
		spill
		spit
		spook
		stab
		stain
		stale
		stare
		starve
		steal
		stink

		storm
		strain
		strangle
		stray
		stress
		strife
		stubborn
		stupid
		sue
		sulk
		surrender
		swindle
		sty

Words to be coded as NEUTRAL		
F	A	S
fable	a	safari
fabreze, fabreeze	abbreviate	sag
fact	abiotic	sage
fad	aboard	sagittarius
falcon	abolish	sailor
fallopian	about	sand
fallow	abroad	sake
family	abrupt	salad
fan	abs, abdominals	sale
fanatic	absent	saline
fanny	accelerate	saliva
far	accent	salmon
fare	accept	sane
farewell	acorn	sanitary, sanitation
farmer	acoustic	santa
father	acrobat	sat
february	acting	satellite
fed	action	satin
feline	activity	saturn
fellow, fella	actor, actress	sauce
fend	actual	saw
fender	acupuncture	saxophone
fern	acute	say
ferret	adamant	scalpel
fetch	addition	scarecrow
fickle	adequate	scent
fiction	adjacent	school, schooling
ficus	adolescent	scissors
fiddle	adopted	scrotum
fido	advice	sea
fiery	advise	sears

figure	advisor	second
file	affect	secret
fill	africa	see
film	afro	seek
fimble	after, afterward	seem
fin	again	self
final	age, aging	sell
finch	agent	semi-colon
find	agriculture	send
fingers	aim	sensation
firm	air	sense
fish	airplane	separate
fizz	akee	september
flail	al	sermon
flamboyant	alarms	service
flame, flames	albino	session
flank	ale	settle
flap	alert	sew
flapper	allegory	sewer
flare	alley	shake
flat	alibi	shank
flavour	alien	shard
flea	align	shark
fletch	alike	shaw
flexible, flexibility	almond	sheet
flick	almost	shift
flies	all	shimmer
flint	alligator	shine, shiny
flipper	alliteration	shirt
flit	allow, allowed, allowance	shoes
float	aloud	shoppers, shopping
floor	alphabet	shotgun
floppy	already	shower
flora	alter	shrooms
florescent	always	side
flower	am	sideways
flown	amazon	sift
fluent, fluency	ambulance	sight
fluid	among	sign
fluoride	amphetamine	significant
fly, flying	ample	silence
flyers	anaconda	silent
focus	analyze	silk
fog	anatomy	single
follow	anchor	situation
foot	ancient	skate
for	and	skeddadle
ford	andron	skewer
forearm	anecdote	skin
forehead	angle	skort
forensics	annual	sleep

foreign	annunciate	sleigh
forest	anomaly	sling
forever	anonymous	slip, slippery
form	another	slit
formal	answer	slither
fort	ant	slug
forum	antecedent	slumber
foss, fosse	antelope	slush
fowl	antenna	smoosh, smush
frank,frankly	anticipate	snack
frappucino	antidote	snail
free-fall	antiquity	snap
freeze, freezing, frozen	antonym	sniff
freight	anus	snooze
french	anytime	snow, snowed, snowing
frequency	apart	snowflake
freshman, freshmen	apartment	snowman
fridge	apollo	so
fringe	apostle, apostles	soak
frisk	apparent	soap
frog	appearance	soar
from	appendix	soccer
froth	appetite	sofa
fry, fries	apple	soft
fuchsia	applicate	solar
full	appoint	solid
function	appointment	solo
fundamental	apprentice	solstice
funeral	approximate, approximately	solve
fungus	apricot	some, sometimes
fur	april	son
furnace	aquarius	song
furniture	arbitrary	soon
furrow	arc	sorbet
furry	are	sos
further	area	sought
fuse	arena	sound
future	aries	soup
fuzz	around	soviet
	arouse	space
	arrange	sparkles
	arrow	sparse
	arsenal	speed
	art	spin, spinning
	artichoke	splinter
	articulate	split
	as	spoke
	asexual	sport, sports, sporty
	ash	staff
	ask	stall
	asphalt	stallion

	assimilate	standard
	assist, assistant	staple, staples
	assume, assumption	starch
	astroid	start
	astronomy	state
	at	static
	ate	station
	athlete	status
	atlas	step-mom, stepmother
	atmosphere	step-dad, stepfather
	atom, atomic	stilt
	attach, attached	stool
	attention	stop
	attitude	store
	atypical	straight
	aunt, auntie, aunty	street
	australopithecus	strict
	auto	string
	autobiography	stubble
	automated	stuck
	autopsy	style
	authority	sub
	autograph	submarine
	autumn	subway
	aver	suffice
	average	sufficient
	avoid	sugar
	avuncular	suggest
	away	sum
	axe	summon
	axel	sun, sunshine
	aztec	sunflower
		superstitious
		supervisor
		supper
		suppose
		sure
		surprise
		surround
		sushi
		suspension
		swallow
		sweat
		swell
		swerve
		swim
		sword
		synthesis
		system

Words to be coded as AMBIGUOUS		
F	A	S
fabricate	abortion	sack
facade	above	sanction
fag	accident, accidentally	sap
fagot	ace	sass, sassy
fall, falls, fallen, fell	access	satiated
familiar	acid	score
fart	affair	scrap
fast, faster	against	screak
fat	ah	screw
fate	aids (to help or the disease)	scrum
feel	alcohol	sear
feeling	alone	season
feisty	amateur	seclude, secluded
felly	ambidextrous	seduce, seductive, seduction
felt	amend	sensitive
fence	anal	septic
fever	animal, animals	serious
fidget	anthrax	serpent
fierce	antic, antics	servant
fighter	anticipation	sex, sexual, sexuality
fine	ape	shaft
finger	aphrodisiac	shallow
finish, finished	apocalypse	shark
fire	appeal	sharp
first	apprehend	sheep
fist	arms, armed	shell, shells, shelled, shelling
fit	artificial	shelter
fix	ash	shock, shocks
fizzle	ass	shoot
flair	asylum	short
flake	aura	shot
flap		shout
fleece		shriek
fling, flung		shrill
flip		shrink
flirt		sick
flounder		silly
flow		simple
fluff, fluffed		sink
fluke		siren
flutter		skinny
foil		skirt
forbidden		skull
force		slack
forge		slam
formidable		slant, slanted

forward		slash
fox		slender
fracture		slick
fragile, fragility		slim
frame		slime, slimy
friction		slinky
fried		sly
frig, frigging		sloth
fritter		slow
front		slug
fruitcake		small
fudge		smoke, smoking
funk, funky		smell
		snag
		snake
		snickers
		sock
		soil
		solitude
		solution
		soul
		spam
		spare, spares
		special
		splash
		sponge
		spunk
		stable
		stake
		stalk
		star
		stark
		stash
		stealth
		steam, steamed, steaming
		stew
		stiff
		still
		sting
		stomp
		stoner
		stoop
		story
		stout
		strange
		strike
		strip, stripped, stripping
		strive
		stroke
		stub
		stud

		stump
		stun
		stunt
		substance
		suck
		sultry
		super
		superficial
		suspect
		swear
		swift
		swinger
		swipe

Verbal Fluency Legitimacy Coding Guidelines

Words to be coded as ILLEGITIMATE		
F	A	S
Fall (the season)	ADHD (not a word but an acronym)	sagittarius
february	africa	santa
fluoride	afro	saphire
frankenstein	AIDS (if the youth meant the disease – not a word but an acronym)	SARS
frappacino	america	satan
french	apollo	saturday
friday	april	saturn
funk	aquarius	september
	arctic	seth
	aries	shrooms
	ark	skydome
	armageddon	smitt
	atm (automated teller machine)	sos
	august	soviet
	australopithecus	spiderman
	autumn	summer
	aztec	sunday
		superman

Words to be coded as AMBIGUOUS		
F	A	S
fall	absolute	sandals
fanny	Al, al	sandy
fido	amazon	saw
flare	amber	screwdriver
flora	andron	sears
ford	anthrax	shell
fox	apple	shoppers
frank	archy	siamese
	atlas	slushy
	axe	snickers (snicker is a legitimate word)
		sopranos
		source
		spring
		staples
		sting
		suave
		sue

General coding rules:

- Single letters other than "a" (e.g., s, f) are illegitimate

- Any specific colour (e.g., "azure") is a proper noun and thus illegitimate

- Any non-English word (e.g., "fromage") is illegitimate

- All illegitimate non-words produced by the youth (e.g., apan) should be coded as ambiguous in the affect/emotionality section

- When two words are given as a single concept (e.g., ant farm) take the first word only (in this case: ant). If the first word has already been given, then the second mention is coded as illegitimate

- Proper drug names, like Ritalin or Prozac would get disqualified but not the
- Type of drug category like alcohol, amphetamine etc.

- Numbers should be counted as legitimate words if used initially. Higher numbers that utilize the base word over and over are illegitimate. Remember that the purpose of the task is to assess cognitive functioning – it takes very little cognitive effort to rhyme off "fifty-one, fifty-two, fifty-three...etc.". As such, "seven" is legitimate even if the youth has already said "six" have six. The same goes for "four" and "five". However, fifteen, fifty, five hundred etc. are NOT legitimate if they have already used "five" because these words contain the base-root "five" in them.

CADRI DATING QUESTIONNAIRE

At your age, a number of teens are thinking about dating. Some begin

thinking of people they might like to date, others go out on dates, and some

begin steady relationships. Please check the statement(s) that best applies to

you.

☐ I have not yet begun dating (**If you have not yet begun dating, skip to the next questionnaire**).

☐ I have begun dating at age_____

☐ I am currently in a serious relationship

IF YOU HAVE BEGUN DATING:

How many **single dates** have you been on (list a number, please give your best guess)? _____

How many serious relationships have you had?

_____

Did/does your friends know about this dating partner(s)?   ☐ YES
☐ NO

Did/does your caregivers know about this dating partner(s)? ☐ YES
☐ NO

How many partners did you have / have you had in:

		Longest relationship	Shortest relationship
Grade 9	# of partners_____	# of weeks / months _____	# of weeks / months _____
Grade 10	# of partners_____	# of weeks / months _____	# of weeks / months _____
Grade	# of	# of weeks / months	# of weeks / months

| 11 | partners_____ | _____ | _____ |
| **Grade 12/13** | # of partners_____ | # of weeks / months _____ | # of weeks / months _____ |

What makes a relationship serious to you? *(Please check any/all boxes that apply)*

☐ Being just with that one person sex

☐ Being in love

☐ Having

☐ Lasting over a month

☐ Sharing secrets

☐ Meeting their family

☐ Spending time together on weekends

☐
Other_____

___

Of these serious relationships what was the biggest age difference?

One person I was going out with was _____ years **older** than me.

One person I was going out with was _____ years **younger** than me.

There was never an age difference, the person was the same age as me.

The next few pages ask you to answer questions thinking about your current or recent ex-boyfriend/girlfriend. Please check which person you will be thinking of when you answer these questions:

☐ I am thinking about somebody who is my boyfriend/girlfriend right now **(Fill out Part A and Part C) My partner's initials are:** ___ ____

☐ I am thinking of a recent ex- within the **last 3 months (Fill out Part B and Part C)**
My partner's initials are: ___ ____

☐ I am thinking of an ex within **the past year (Fill out Part B and Part C)**
My partner's initials are: ___ ____

PART A - (If this is your current boyfriend/girlfriend)

How long have you been dating/going out?
_____

How old is your dating partner? _____

My dating partner is: Male   Female

Is this the only person you are seeing?   ☐ YES   ☐ NO

Are you the only person they are seeing?   ☐ YES   ☐ NO

Do your friends know about this dating partner? ☐ YES   ☐ NO

Do your caregivers know about this dating partner?   ☐ YES   ☐ NO

How often do you see each other?
☐ Everyday   ☐ At least 3 times a week   ☐ 1-2 times a week
☐ Less than once a week (every 2 weeks, once a month)

☐ Less than once a month

How important is this relationship to you (Check one)?
☐ Not very important   ☐ Somewhat important   ☐ Important ☐ Very important

How much time do you spend with your partner going out in male/female groups?

_____hours a day   OR   _____hours per week

How much time do you spend alone together?

_____hours a day   OR   _____hours per week

What kinds of things do you do together?

_____

_____

_____

_____

_____

How often do you argue with your partner?

_____hours a day   OR   _____hours per week

What kinds of things do you argue about?

_____

_____

_____

_____

_____

_____

How often do you *think* your current dating partner has used the following drugs? We are interested in your best guess. For each behaviour listed, please fill in one circle completely.

	Never Used	Almost Never	Some-times	Almost Everyday	Everyday
Consumed alcoholic drinks	O	O	O	O	O
Drank 5 or more alcoholic beverages in a row	O	O	O	O	O
Smoked cigarettes	O	O	O	O	O
Used cannabis (e.g., marijuana, hashish, hash oil, pot, grass)	O	O	O	O	O
Used heroin (known as H, junk, smack)	O	O	O	O	O
Used any cocaine products (including	O	O	O	O	O

powder, crack,
freebase)

Used hallucinogens (e.g., LSD or acid)	O	O	O	O	O
Used club drugs (e.g., MDMA or Ecstasy)	O	O	O	O	O

PART B – (If this is your ex)

How long did you go out together?

_____

How old was your dating partner?

_____

My dating partner was: Male   Female

Why did you stop going out with him/her?   _____

_____

_____

_____

Did your friends know about this dating partner?   □ YES   □ NO

Did your caregivers know about this dating partner?   □ YES   □ NO

How often did you see each other?
□ Everyday   □ At least 3 times a week   □ 1-2 times a week

□ Less than once a week (every 2 weeks, once a month)

□ Less than once a month

How important was this relationship to you (Check one)?
□ Not very important   □ Somewhat important
□ Important   □ Very important

How much time did you spend alone together?
_____ hours per day   OR   _____ hours per week

How much time did you spend with your partner going out in male/female groups?
_____ hours a day   OR   _____ hours per week

What kinds of things did you do together?

_____
_____
_____
_____
_____

How often did you argue with your partner?
_____hours a day   OR   _____hours per week

What kinds of things did you argue about?

_____
_____
_____
_____

How often do you *think* your ex-dating partner has used the following drugs? We are interested in your best guess. For each behaviour listed, please fill in one circle completely.

	Never Used	Almost Never	Some-times	Almost Everyday	Everyday
Consumed alcoholic drinks	O	O	O	O	O
Drank 5 or more alcoholic beverages in a row	O	O	O	O	O
Smoked cigarettes	O	O	O	O	O
Used cannabis (e.g., marijuana, hashish, hash oil, pot, grass)	O	O	O	O	O
Used heroin (known as H, junk, smack)	O	O	O	O	O
Used any cocaine products (including powder, crack, freebase)	O	O	O	O	O
Used hallucinogens (e.g., LSD or acid)	O	O	O	O	O
Used club drugs (e.g., MDMA or Ecstasy)	O	O	O	O	O

PART C

Every relationship has conflict. When you think about your current or recent relationship please check any and/or all of the boxes below that you and your dating partner have disagreed about.

☐ Friends   ☐ Seeing other people   ☐Schoolwork

☐ Entertainment   ☐ Someone's parents or relatives
☐ Sex   ☐ Personal Appearance
☐ Keeping promises   ☐ Money
☐ Being "out" about sexual orientation   ☐Other_____

The following questions ask you about things that may have happened to you with your dating partner while you were having an argument. When answering these questions, check the box that is your best estimate of how often these things have happened with the person you are thinking of (current or ex-dating partner) in the <u>last 12 months</u>. As a guide use the following scale:

Never: this has **never** happened in your relationship. **Seldom**: this has only happened about **1-2 times** in your relationship. **Sometimes**: this has happened **3-5 times** in your relationship. **Often**: this has happened **6 times or more** in your relationship. **N/A**: this does **not apply** to your relationship.

During a conflict or argument with my dating partner in the <u>last 12 months</u>:

		Never	Seldom	Some-times	Often	N/A
1.	I gave reasons for my side of the argument.	☐	☐	☐	☐	☐
	My partner gave reasons for their side of the argument.	☐	☐	☐	☐	☐
2.	**I destroyed or threatened to destroy something my partner valued.**	☐	☐	☐	☐	☐
	My partner destroyed or threatened to destroy something I valued.	☐	☐	☐	☐	☐
3.	I made my partner describe where they were every minute of the day.	☐	☐	☐	☐	☐
	My partner made me describe where I was every minute of the day.	☐	☐	☐	☐	☐
4.	**I tried to turn my partner's friends against them.**	☐	☐	☐	☐	☐
	My partner tried to turn my friends against me.	☐	☐	☐	☐	☐

		Never	Seldom	Some-times	Often	N/A
5.	I did something to make my partner feel jealous.	☐	☐	☐	☐	☐
	My partner did something to make me feel jealous.	☐	☐	☐	☐	☐
6.	**I told my partner what they can and cannot wear.**	☐	☐	☐	☐	☐
	My partner told me what I can and cannot wear.	☐	☐	☐	☐	☐

		Never	Seldom	Some-times	Often	N/A
7.	I told my partner I was partly to blame.	☐	☐	☐	☐	☐
	My partner told me he/she was partly to blame	☐	☐	☐	☐	☐
8.	**I brought up something bad that my partner had done in the past.**	☐	☐	☐	☐	☐
	My partner brought up something bad that I had done in the past.	☐	☐	☐	☐	☐
9.	I threw something at my partner.	☐	☐	☐	☐	☐
	My partner threw something at me.	☐	☐	☐	☐	☐
10.	**I said negative things about my partner's friends.**	☐	☐	☐	☐	☐
	My partner said negative things about my friends.	☐	☐	☐	☐	☐
11.	I said things just to make my partner angry.	☐	☐	☐	☐	☐
	My partner said things just to make me angry.	☐	☐	☐	☐	☐

		Never	Seldom	Some-times	Often	N/A
12.	**I gave reasons why I thought my partner was wrong.**	☐	☐	☐	☐	☐
	My partner gave reasons why they thought I was wrong.	☐	☐	☐	☐	☐
13.	I agreed my partner was partly right.	☐	☐	☐	☐	☐
	My partner agreed I was partly right.	☐	☐	☐	☐	☐
14.	**I spoke to my partner in a hostile or mean tone of voice.**	☐	☐	☐	☐	☐
	My partner spoke to me in a hostile or mean tone of voice.	☐	☐	☐	☐	☐

		Never	Seldom	Some-times	Often	N/A
15.	I offered a solution that I thought would make us both happy.	☐	☐	☐	☐	☐
	My partner offered a solution that they thought would make us both happy.	☐	☐	☐	☐	☐
16.	**I tried to stop my partner from doing activities without me.**	☐	☐	☐	☐	☐
	My partner tried to stop me from doing activities without them.	☐	☐	☐	☐	☐
17.	I put off talking until we calmed down.	☐	☐	☐	☐	☐
	My partner put off talking until we calmed down.	☐	☐	☐	☐	☐

		Never	Seldom	Some-times	Often	N/A
18.	I insulted my partner with put-downs.	☐	☐	☐	☐	☐
	My partner insulted me with put-downs.	☐	☐	☐	☐	☐
19.	I discussed the issue calmly.	☐	☐	☐	☐	☐
	My partner discussed the issue calmly.	☐	☐	☐	☐	☐
20.	I said things to my partner's friends about my partner to try and turn them against him/her.	☐	☐	☐	☐	☐
	My partner said things to my friends about me to turn them against me.	☐	☐	☐	☐	☐
21.	I ridiculed or made fun of my partner in front of others.	☐	☐	☐	☐	☐
	My partner ridiculed or made fun of me in front of others.	☐	☐	☐	☐	☐
22.	I told my partner how upset I was.	☐	☐	☐	☐	☐
	My partner told me how upset they were.	☐	☐	☐	☐	☐

		Never	Seldom	Some-times	Often	N/A
23.	I kept track of who my partner was with and where he/she was.	☐	☐	☐	☐	☐
	My partner kept track of who I was with and where I was.	☐	☐	☐	☐	☐
24.	I blamed my partner for the problem.	☐	☐	☐	☐	☐
	My partner blamed me for the problem.	☐	☐	☐	☐	☐

		Never	Seldom	Sometimes	Often	N/A
25.	I told my partner who they can and cannot talk to.	☐	☐	☐	☐	☐
	My partner told me who I can and cannot talk to.	☐	☐	☐	☐	☐
26.	**I kicked, hit, or punched my partner.**	☐	☐	☐	☐	☐
	My partner kicked, hit, or punched me.	☐	☐	☐	☐	☐
27.	I left the room to cool down.	☐	☐	☐	☐	☐
	My partner left the room to cool down.	☐	☐	☐	☐	☐
28.	**I gave in, just to avoid conflict.**	☐	☐	☐	☐	☐
	My partner gave in, just to avoid conflict.	☐	☐	☐	☐	☐
29.	I tried to keep my partner away from their family.	☐	☐	☐	☐	☐
	My partner tried to keep me away from my family.	☐	☐	☐	☐	☐
30.	**I accused my partner of flirting with another guy/girl.**	☐	☐	☐	☐	☐
	My partner accused me of flirting with another guy/girl.	☐	☐	☐	☐	☐
31.	I deliberately tried to frighten my partner.	☐	☐	☐	☐	☐
	My partner deliberately tried to frighten me.	☐	☐	☐	☐	☐

		Never	Seldom	Sometimes	Often	N/A
32.	I slapped my partner or pulled my partner's hair.	☐	☐	☐	☐	☐
	My partner slapped me or pulled my hair.	☐	☐	☐	☐	☐

33.	I treated my partner like they were stupid.	☐	☐	☐	☐	☐
	My partner treated me like I was stupid.	☐	☐	☐	☐	☐
34.	I threatened to hurt my partner.	☐	☐	☐	☐	☐
	My partner threatened to hurt me.	☐	☐	☐	☐	☐
35.	I threatened to end the relationship.	☐	☐	☐	☐	☐
	My partner threatened to end the relationship.	☐	☐	☐	☐	☐
36.	I threatened to hit or throw something at my partner.	☐	☐	☐	☐	☐
	My partner threatened to hit or throw something at me.	☐	☐	☐	☐	☐
37.	I pushed, shoved, shook, or pinned down my partner.	☐	☐	☐	☐	☐
	My partner pushed, shoved, shook or pinned down me.	☐	☐	☐	☐	☐
38.	I spread rumors about my partner.	☐	☐	☐	☐	☐
	My partner spread rumors about me.	☐	☐	☐	☐	☐
39.	I threatened to break up or stop loving my partner.	☐	☐	☐	☐	☐
	My partner threatened to break up or stop loving me.	☐	☐	☐	☐	☐
40.	I ordered my partner around.	☐	☐	☐	☐	☐
	My partner ordered me around.	☐	☐	☐	☐	☐

	Never	Seldom	Some-times	Often	N/A
41. I tried to stop my partner from doing things with their friends.	☐	☐	☐	☐	☐
My partner tried to stop me from doing things with my friends.	☐	☐	☐	☐	☐
42. I hit, kicked or punched something (e.g., wall, a table).	☐	☐	☐	☐	☐
My partner hit, kicked or punched something (e.g., wall, a table).	☐	☐	☐	☐	☐
43. I touched my partner sexually when they didn't want me to.	☐	☐	☐	☐	☐
My partner touched me sexually when I didn't want them to.	☐	☐	☐	☐	☐
44. I forced my partner to have sex when they didn't want to.	☐	☐	☐	☐	☐
My partner forced me to have sex when I didn't want to.	☐	☐	☐	☐	☐
45. I threatened my partner in an attempt to have sex.	☐	☐	☐	☐	☐
My partner threatened me in an attempt to have sex.	☐	☐	☐	☐	☐
46. I kissed my partner when he/she didn't want me to.	☐	☐	☐	☐	☐
My partner kissed me when I didn't want them to.	☐	☐	☐	☐	☐

APPENDIX J: YOUTH HELP SHEET

Thank-you for taking the time to participate in this research study. You may wish to discuss a concern or problem confidentially with a caring adult in the near future. If so, we urge you to contact the Kids Help Line:

1-800-668-6868 www.kidshelp.sympatico.ca/en/

If you are a parent and wish to discuss a concern or problem confidentially with a caring adult, we urge you to contact the parent help line:

1-888-603-9100   www.parenthelpline.ca

If you experience severe physical or mental health concerns, it is important that you visit your nearest hospital emergency room immediately.

If you have concerns about being hurt or have been hurt by a dating partner, please contact one of the following help lines or websites:

Assaulted Female's Help Line	**416-863-0511**
Rape Crisis Help Line	**416-597-8808**
Scarborough Distress Centre	**416-751-4888**
Canadian Women's Foundation	**416-365-1444**
Education Wife Assault	**416-968-3422**
Battered Woman Support Services	**604-687-1867**
White Ribbon Campaign	**1-800-328-2228 www.whiteribbon.ca**

Below you will also find information on a website that you or someone you know may find useful:

www.teenadvice.org

This site is run by a group of non-professional teens helping other teens. There is a lot of information on a variety of topics, including violence, dating, depression, and suicide. Counselors are available to answer questions and give advice. Help organizations located around the world are listed.

Lastly, if you have any questions or concerns related to the MAP research project, please contact Dr. Chris Wekerle, the head researcher for the project.

Dr. Chris Wekerle

Principal Investigator, MAP Research Study

Associate Professor

Education, Psychology, Psychiatry

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APPENDIX K: NEGATIVE AFFECT INDEX CREATION CORRELATION VALUES

Pearson Correlations Between BSI, TSCC and STAXI-2 Scales and Subscales

Scale/ Subscale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1. SOM	-																								
2. OCD	.70 c	-																							
3. INT	.73 c	.75 c	-																						
4. DEP	.73 c	.75 c	.80 c	-																					
5. ANX	.79 c	.76 c	.79 c	.80 c	-																				
6. HOS	.62 c	.65 c	.67 c	.69 c	.65 c	-																			
7. PHOB	.78 c	.68 c	.76 c	.71 c	.80 c	.60 c	-																		
8. PARA	.65 c	.71 c	.73 c	.76 c	.73 c	.75 c	.67^c	-																	
9. PSYC	.73 c	.75 c	.76 c	.84 c	.80 c	.69 c	.73^c	.76 c	-																

10. ANX	.72 c	.69 c	.71 c	.74 c	.82 c	.65 c	.77[c]	.69 c	.78 c	-															
11. DEP	.65 c	.63 c	.74 c	.78 c	.68 c	.61 c	.63[c]	.65 c	.76 c	.80 c	-														
12. ANG	.57 c	.60 c	.63 c	.63 c	.58 c	.83 c	.56[c]	.68 c	.65 c	.69 c	.68 c	-													
13. POST	.69 c	.66 c	.65 c	.72 c	.71 c	.67 c	.65[c]	.70 c	.74 c	.83 c	.81 c	.72 c	-												
14. DIS	.68 c	.72 c	.66 c	.71 c	.72 c	.60 c	.64[c]	.67 c	.77 c	.82 c	.80 c	.66 c	.85 c	-											
15. DIS-O	.69 c	.73 c	.67 c	.72 c	.73 c	.60 c	.66[c]	.66 c	.78 c	.82 c	.79 c	.66 c	.83 c	.98 c	-										
16. DIS-F	.48 c	.52 c	.46 c	.49 c	.52 c	.43 c	.44[c]	.53 c	.54 c	.61 c	.61 c	.51 c	.69 c	.81 c	.67 c	-									
17. SEX	.40 c	.47 c	.45 c	.50 c	.43 c	.46 c	.39[c]	.44 c	.51 c	.58 c	.59 c	.55 c	.61 c	.63 c	.60 c	.55 c	-								
18. SEX-P	.34 c	.43 c	.38 c	.45 c	.39 c	.42 c	.32[c]	.39 c	.43 c	.47 c	.49 c	.48 c	.52 c	.53 c	.50 c	.48 c	.95 c	-							
19. SEX-D	.39 c	.41 c	.44 c	.46 c	.39 c	.38 c	.37[c]	.40 c	.52 c	.61 c	.60 c	.51 c	.58 c	.62 c	.61 c	.50 c	.78 c	.56 c	-						
20. TRAIT	.35 c	.36 c	.35 c	.34 c	.34 c	.57 c	.30[c]	.49 c	.37 c	.34 c	.33 c	.55 c	.33 c	.29 c	.30 c	.20 c	.20 c	.19 c	.18 b	-					

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
21. TEMP	.34[c]	.30[c]	.31[c]	.31[c]	.33[c]	.54[c]	.29[c]	.40[c]	.33[c]	.31[c]	.28[c]	.52[c]	.24[c]	.24[c]	.26[c]	.14[c]	.13[c]	.11[c]	.14[a]	.89[c]	-					
22. REACT	.27[c]	.30[c]	.30[c]	.27[c]	.27[c]	.40[c]	.23[c]	.43[c]	.28[c]	.27[c]	.28[c]	.40[c]	.32[c]	.25[c]	.25[c]	.19[c]	.22[c]	.22[c]	.15[a]	.85[c]	.57[c]	-				
23. X-OUT	.29[c]	.27[c]	.28[c]	.27[c]	.27[c]	.52[c]	.24[c]	.41[c]	.31[c]	.25[c]	.25[c]	.52[c]	.31[c]	.21[c]	.22[c]	.15[c]	.26[c]	.28[c]	.12	.40[c]	.23[c]	.69[c]	-			
24. X-IN	.34[c]	.37[c]	.39[c]	.44[c]	.37[c]	.34[c]	.26[c]	.41[c]	.40[c]	.34[c]	.41[c]	.33[c]	.39[c]	.37[c]	.33[c]	.36[c]	.27[c]	.25[c]	.32[c]	.40[c]	.34[c]	.43[c]	.44[c]	-		
25. C-OUT	-.05	-.05	-.09	-.05	-.03	-.24[c]	-.09	-.16[a]	-.04	-.08	-.08	-.22[c]	-.08	-.00	-.02	.04	-.05	-.04	-.03	-.11	-.03	-.26[c]	-.17[b]	.24[c]	-	
26. C-IN	-.00	.05	-.01	-.04	.08	-.12	.02	-.06	-.06	-.00	-.02	-.12	-.03	-.02	-.00	.05	-.04	-.02	-.06	-.04	-.00	-.13[a]	-.06	.29[c]	.81[c]	

Note. Items 1-9 are BSI scales; Items 10-19 are TSCC scales and subscales; Items 20-26 are STAXI-2 scales and subscales. SOM = Somatization, OCD = Obsession-compulsion, INT = Interpersonal sensitivity, DEP = Depression, ANX = Anxiety, HOS = Hostility, PHOB = Phobic anxiety, PARA = Paranoid ideation, PSYC = Psychoticism, ANG = Anger, POST = Posttraumatic stress, DIS = Dissociation, DIS-O = Overt dissociation, DIS-F = Fantasy dissociation, SEX = Sexual concerns, SEX-P = Sexual preoccupation, SEX-D = Sexual distress, TRAIT = Trait anger, TEMP = Angry temperament, REACT = Angry reaction, X-OUT = Anger expression-out, X-IN = Anger expression-in, C-OUT = Anger control-out, and C-IN = Anger control-in.

[a] $p < .05$
[b] $p < .01$
[c] $p < .001$