2.0 BRIEF REVIEW OF THE RELATED LITERATURE

Aggressive behaviour is of increasing concern worldwide (Dupper & Meyer-Adams, 2002; World Health Organization, 2002). Violence and aggression are common in today’s world, both at the collective level between social groups and at the individual level between persons. Researches have been providing plausible explanations of underlying psychological mechanisms of aggression. Psychologists have studied many facets of aggressive behaviour, including personality characteristics of aggressive individuals and situational instigators (Anderson and Bushman, 2002; Baron and Richardson, 1994) and designated aggression as a highly complex behavioural phenomenon with multiple triggers and inhibitory factors.

In current researches, emphasis is being given on the development, prevention, and control of aggressive behaviour. The present study assessed the hostile attribution of intent among aggressive and less aggressive individuals and provided social cognitive intervention based on General Aggression Model (GAM; Anderson and Bushman, 2002) and Social Information Processing model of aggression (SIP; Dodge, 1986; Crick and Dodge, 1994) to aggressive individuals. A brief review of the variables taken up in present study is presented below.

2.1 Social Information Processing (SIP) and Aggression

SIP model has generated a great amount of research that documents specific social-cognitive tendencies and skill deficits characteristic of individuals with behaviour problems, especially aggressive tendencies. Aggressive boys have been found to differ from their less aggressive peers at all stages of social information processing model (Crick & Dodge, 1994). Numerous other social cognitive structures (e.g., beliefs about aggression; Huesmann, 1998)
and on-line processing operations (Dodge, Coie, & Lynam, 2006) have also been linked to aggressive conduct problems in youth (Fontaine et al., 2009).

Dodge (1986) has argued that biases or deficits at any step of social information processing model can lead to aggressive behavioural responses. Regarding cue encoding, aggressive individuals have been found to search for fewer social cues before making attributions about another's intent than do less aggressive individuals (Dodge & Newman, 1981; Milich & Dodge, 1984; Dodge, 1986), even when the number of cues available is experimentally controlled (Dodge & Tomlin, 1987).

At the cue interpretation step of processing, aggressive individuals display a bias toward making attributions of hostile intent regarding the behaviour of others (Aydin & Markova, 1979; Nasby, Hayden, & dePaulo, 1979; Dodge, 1980; Dodge, Murphy, & Buchsbaum, 1984; Dodge, Pettit, McClaskey, & Brown, 1986; Dodge & Tomlin, 1987; Dodge, Lansford, Burks, Bates, Pettit, Fontaine, & Price, 2003). This bias is particularly evident when information is ambiguous or benign (Dodge & Frame, 1982), but it also occurs when cues suggest that the peer's action was accidental or made with pro-social intent (Dodge et al., 1984).

In studies of response generation, aggressive individuals have been found to generate more aggressive responses and fewer assertive responses than less aggressive individuals (Asarnow & Callan, 1985; Deluty, 1985; Feldman & Dodge, 1987; Gouze, 1987). Moreover, Perry, Perry, and Rasmussen (1986) found that aggressive individuals were more confident in their ability to use aggressive responses, and less confident in their ability to inhibit aggression, than were less aggressive individuals. The groups were equally confident, however, in their ability to use verbal persuasion and pro-social behaviours. Aggressive individuals also expected
aggression to be more effective in obtaining rewards, in decreasing aversive treatment from
others, and in bringing about more positive self-evaluations.

One other domain of social information processing that appears to be critical is **response decision making** i.e., the processes by which youths evaluate behavioural alternatives and decide how to respond to challenging social situations (Fontaine & Dodge, 2006). As a component of social information processing, response evaluation and decision (RED) concerns the set of decision processes by which alternative responses are evaluated, assigned outcome expectancies, and compared and prioritized for ultimate response selection. Other processing patterns associated with different steps within Dodge’s model have also been related to aggression (Dodge et al., 2003; Schultz & Shaw, 2003; Fontaine & Dodge, 2006; Fontaine, 2006a, 2006b, 2007, 2008).

Deviations from competent responding have been found to be characteristic of such diverse problems as aggression (e.g., Crick & Dodge, 1994), depression (Kaslow, Rehm, Pollack, & Siegel, 1988), and impulsivity (e.g., Kendall & Braswell, 1985).

Social information processing pattern is an important construct not only in the explanation of human aggression but also in social adjustment and this has been demonstrated by various theoretical models (e.g., Akhtar & Bradley, 1991; Coie & Dodge, 1998; Crick & Dodge, 1994; Gifford-Smith & Rabiner, 2004; Huesmann, 1997). It has been theorized (Dodge et al., 1997) that distinct ways people process social information and differences in people’s **salient social goals** mutually influence the likelihood that they will engage in aggressive behaviours. Studies show that when aggressive youngsters encode situational cues, they focus more on aggression-relevant stimuli (Gouze, 1987), they remember more aggression-relevant details of a situation (e.g., Dodge & Frame, 1982), and they over-perceive aggression in their
partners (e.g., Lochman & Dodge, 1998). When interpreting the cues, aggressive individuals are less able to recognize the specific intentions and motivations of others (e.g., Dodge, Price, Bachorowski, & Newman, 1990), and they exhibit a tendency to attribute hostile intentions to others i.e. hostile attribution of intent (e.g., Coie, Dodge, Terry, & Wright, 1991; Zelli et al., 1999). Aggressive individuals tend to perceive others as angry and hostile (Barth & Bastiani, 1997; Crick & Dodge, 1996; Dodge & Price, 1994; Schultz et al., 2000).

The majority of these findings hold true for many different measures of aggressive behaviour, such as parent, teacher, and peer reports, behavioural observations, and police records, as well as for many different groups of individuals, such as boys and girls, European-Americans and African-Americans, and young children and adolescents (Dodge, 2003).

Social information processing patterns are usually measured using interviews and questionnaires about hypothetical situations, interviews about real social events, and self-report questionnaires (Crick and Dodge, 1994). The variables most often measured are encoding, attributions, response generation, and evaluation of responses. Social information processing biases have been further shown in prospective research to (a) be predicted by early overt aggression and peers’ rejection, and (b) in turn predict future escalations in overt aggression (Dodge et al., 2003; Lansford et al., 2006). Social information processing biases may also mediate the longitudinal relationship between early experiences of maltreatment by parents or peers and the increased likelihood of individuals developing overtly aggressive behaviour later (Dodge et al., 2003; Dodge et al., 1995).

Dodge and his colleagues (Dodge et al., 2003) have also used multidimensional latent-construct analysis to test the fit of a four-step model (attribution bias, goal setting, response generation, and response evaluation) in a sub-sample of the Fast Track (Conduct Problems
Prevention Research Group, 1992) normative control group. They found that the four-construct model provided the best fit to the data, providing support for conceptualizing the SIP steps as distinct constructs.

To sum up, more than 100 studies have shown that measures of SIP are significantly associated with aggression (Dodge, 2003). For example, correct encoding of socially relevant cues is associated with teacher and peer reports of behavioural competence in provocative situations with peers and authority figures, as well as with rejected-aggressive status. Accuracy of interpretation of intent cues has been associated with individual’s aggressive responses (e.g., physically or verbally hostile, or retaliatory destruction), and a bias toward hostile attributions in ambiguous situations has been associated with rejected peer status. Generation of aggressive responses has been correlated with individual’s aggressive behaviour. Finally, anticipation of positive outcomes from hypothetical aggressive responses has been associated with peer reports of aggressive behaviour, and individual’s approval of aggressive responses has also been found to correlate with aggressive behaviour (Fontaine et al., 2002).

Thus, Social information processing models maintain that individual differences in social behaviour are related to unique social-cognitive styles or difficulties. Accordingly, if the thought processes behind individual’s aggressive behaviours can be discovered and modified, undesirable behaviours such as aggression may be diminished (Dodge et al., 1990; Dodge, 1991 Guerra and Slaby, 1990; Hudley and Graham, 1993).

Furthermore, of all the social information-processing steps related to aggression, the interpretation of cues step has received the most research attention (Orobio de Castro et al., 2002). In particular, the aspect of intent attribution (the perception of why another acts the way he does in any given situation) is central. Research shows that when provocative cues are clear,
aggressive and non-aggressive individuals do not differ in their intent attributions (Dodge, 1980; Dodge and Coie, 1987; Dodge and Frame, 1982; Dodge & Newman, 1981; Milich & Dodge, 1984; Steinberg & Dodge, 1983). In contrast, the aggressive individual tends to assume hostile intent in potentially provocative but ambiguous situations, wherein a peer’s motives are unclear (e.g., Dodge, 1980; Guerra & Slaby, 1989). This tendency is referred to as a “hostile attributional bias” (Nasby et al., 1980), and is assessed with hypothetical vignettes (e.g., videotaped or written scenarios) in which a purposefully ambiguous situation is portrayed and the individual determines whether or not the potential provocateur is acting with malice or not.

2.2 Hostile Attribution of Intent and Aggression

An attributional approach to the study of aggressive behaviour explores cognitive construction of causality and affective response. Weiner’s (1985, 1986) attribution theory is based on the premise that attribution precedes emotion. Heider (1958) created “naive” psychology, which describes how humans act as lay scientists in making attributions of intention and inferring cause. Social psychologists conducted numerous studies following this formulation, to understand the rules that humans follow in inferring cause and then responding behaviourally. In similar regard, the social–cognitive theory of personality (Cervone & Shoda, 1999) is based in the formulations by Mischel (1999) and Bandura (1999) that personality coherence is guided not by traits but rather by situation-specific processes of social cognition. The work in social–cognitive theories of personality suggests that aggressive individuals have many hostile schemas that are stored in memory.

A good deal of scientific effort has gone into testing the causal direction of the correlation between hostile attributional bias and aggressive behaviour. Aggression and attribution have been found to be related to each other (Nasby, Hayden, and dePaulo, 1980). In
their study of aggressive adolescent boys in residential mental health treatment, Nasby, et al., (1980) found that aggressive youth were more likely to attribute hostile intent to the person than were matched control youth. Dodge and Coie (1987; Dodge, Lochman, Harnish, Bates, & Pettit, 1997) have shown that hostile attribution bias is one social-information processing mechanism that is particularly predictive of some types of aggression.

Representation of social information has been studied almost exclusively in the sense of representation of other person’s intention. In a typical study, participants are presented with a number of social situations in which another person hinders them are asked why this person hindered them. If participants attribute hostile intent to the other, they are more likely to respond unkindly or aggressively than if they represent other’s intention as benign or accidental.

Dodge (1980) used a social psychological experimental design to test the hypothesis that aggressive boys would respond to ambiguous provocations as if the provocateur had acted with hostile intent. He asked aggressive and less aggressive third and fifth grade boys to participate in a structure-building contest. Midway through the contest, a peer competitor (who was actually the experimenter’s confederate) destroyed the boy’s building, through actions that had been experimentally manipulated as hostile, benign, or ambiguous. Both aggressive and less aggressive boys responded to the hostile peer with retaliatory aggression and to the benign peer with restraint, supporting the initial hypothesis that retaliation follows intentional and malicious provocation rather than benign frustration. In response to the ambiguously intended peer, however, the aggressive boys responded as if the peer had been hostile, whereas the less aggressive boys responded as if the peer had been benign. That is, the aggressive boys retaliated aggressively, and the less aggressive boys withheld any retaliation. It appeared that
the boys had made attributions about the peer’s intent, and had responded accordingly. In the second experiment, Dodge presented the boys with hypothetical vignettes, in which the boys imagined being provoked by a peer who had acted ambiguously. Aggressive boys were more likely to say that the peer had acted with hostile intent than were less aggressive boys, and this difference accounted for most of the differences between the groups in their statements of how they would retaliate toward the peer.

In one related study, Dodge and Newman (1981) presented aggressive and less aggressive boys with a variety of social cues about a hypothetical provocation that they imagined to be directed toward them. Selective recall of hostile cues over benign cues predicted a hostile attribution about the provocateur. Furthermore, rapid responding without regarding to the full array of available cues predicted a hostile attribution, but only among the aggressive group of boys, who presumably called on biased schemas about hostile peers to make their inferences. In an another study, paradigms from cognitive psychology were translated to create an intention cue discrimination task, in which individuals were presented with three video recorded provocation story stimuli that were similar in leading to a negative outcome for the child but which differed in the provocateur’s intent (as hostile, pro-social, accidental, benign, or merely present). The child’s task was to discriminate among the stimuli by multiple choices or to identify each intent in words. The authors found that aggressive–rejected individuals were relatively less accurate at discriminating peer intent cues, but only when the cues actually depicted benign and pro-social intentions; in these cases, the rejected–aggressive individuals inaccurately identified these intentions as hostile. Furthermore, when the actual intention was hostile, the rejected–aggressive individuals were highly accurate (Dodge, Murphy, and

Shifting from the basic paradigm for assessing relationship between aggression and hostile attribution of intent, in a different kind of design, Burks, Dodge, Price, and Laird (1999) administered a version of the Children’s Social Constructs Assessment (CSCA; Stromquist & Strauman, 1992) to 259 children followed longitudinally. In the CSCA, children were asked to give open ended opinions about peers whom they like and dislike, and transcribe responses are later scored for the kinds of constructs that had been invoked. The CSCA scores accounted for 26% of future externalizing problem scores and predicted growth in these scores even when past externalizing behaviour had been statistically controlled. Burks, Laird, Dodge, Pettit, and Bates (1999) adapted two instruments also, the Sentence Completion Task and the Assessment of Schema Typicality, to measure schemas in a sample of 585 eighth grade children, and found that hostile schemas strongly predicted later externalizing problems, with a path coefficient of 0.59.

In a different way of assessing hostile attribution of intent, Barefoot, Dodge, Peterson, Dahlstrom, and Williams (1989) scored 12 items from the Minnesota Multiphasic Personality Inventory to identify a reliable scale of hostile attributional tendency in a sample of 128 law students in 1955. This scale was significantly correlated with self-reported hostile behaviour in this sample. Furthermore, the combined hostile attribution and hostile behaviour scale significantly predicted later mortality i.e. those persons scoring high in hostility were over four times as likely to die by age 50 than those persons scoring low in hostility. Zelli et al., (1999) assessed normative beliefs about aggressive behaviour in a sample of 387 elementary school children and found that they predicted teacher, parent, and self-ratings of aggressive behaviour.
Thus, measured in several different ways, hostile schemas robustly correlate with aggressive behaviour and predict growth in aggressive behaviour across development.

Dodge and Coie (1987) identified groups of reactively aggressive, proactively aggressive, combined aggressive and less aggressive first and third-grade African American boys and presented them with a measure of intention cue detection like that used by Dodge et al., (1984) but adapted with new race-specific stimuli. The two reactively aggressive groups displayed less accuracy at detecting peers’ benign intentions, and instead, over interpreted hostile intent. When the peer’s intent was actually hostile, they were highly accurate. When the peer’s intent was ambiguous, the reactively aggressive groups were more likely than the other groups to attribute hostile intent. Furthermore, direct observations of these boys in peer interactions indicated that the number of errors of presumed hostility on the laboratory task predicted a boy’s rate of over reactive aggression, but not proactive aggression. Crick and Dodge (1996) replicated the correlation between hostile attributional biases and reactive, but not proactive aggressive behaviour in a sample of 624, 9- to 12-year-old boys and girls. On similar lines, Dodge, et al., (1997) found that reactively aggressive third-grade children displayed higher scores for encoding inaccuracy of peer intent stimuli. An important feature of this finding is that they statistically controlled for teacher-rated attention problems and impulsivity, thus eliminating an alternate hypothesis to explain this pattern. Other studies have also reported similar findings that hostile attributional biases were correlated with retaliatory aggression among adolescents (e.g. Graham & Juvonen, 1998; Schwartz et al., 1998).

Besides adolescents, the relationship between hostile attribution of intent and aggression has also been found to be significant among adults, criminals and jail inmates. For instance, MacBrayer et al., (2003) in their study found that mothers who demonstrated hostile
attributional bias toward others were likely to report aggressive behaviour toward others, including their own children. In another study, 128 adolescent boys were presented with video recorded stimuli in a maximum security prison and found that hostile attributional biases were positively correlated with the number of interpersonally violent crimes committed (as rated from official records), under socialized conduct disorder, and the reactive aggression subscale of the Revised Problem Behaviour Checklist, but not with the number of nonviolent crimes, socialized conduct disorder, or the proactive aggression subscale. Furthermore, this pattern of findings held even when intelligence, socioeconomic status, and ethnicity were controlled statistically (Dodge, Price, Bachorowski, and Newman, 1990).

Attempts have also been made to study hostile attribution of intent in different contexts (Lochman & Dodge, 1998) and conditions (Dodge and Somberg, 1987). For instance, Lochman and Dodge (1998) experimentally manipulated the context as competitive versus cooperative, and found that competitive contexts elicited more hostile attributions than did cooperative contexts. Interestingly, less aggressive individuals were able to shift attributional tendencies to match the new context as the context shifted, whereas aggressive individuals were unable to shift out of a competitive context and hostile attribution tendency into a cooperative context with a non-hostile attribution tendency. Thus, situational constraints may interact with individual differences to lead to particularly troublesome circumstances for aggressive individuals. Attribution theory also predicts that hostile attributions are more likely to be made under ambient conditions of threat, due to salience. Dodge and Somberg (1987) in one experiment manipulated these conditions by exposing individuals to fictitious peers who were supposedly in a room next door. These peers led the child to believe that they would, or would not, threaten the child in future interactions. Immediately afterward, the child attended to the
experimenter’s hypothetical video recorded stimuli and made attributional judgments about peer provocateurs. The condition of threat to the self had a significant impact on reducing the accuracy of individual’s intent inferences and increasing hostile attributional biases, but only among aggressive children. Less aggressive children were relatively immune to this situational context, whereas it had a discernible impact on furthering the biases of aggressive individuals.

One interesting finding related to hostile attribution of intent was observed in which researchers found that hostile attributional biases by aggressive individuals are restricted to circumstances in which the self is the object of the provocation. When individuals are asked to imagine peer A provoking peer B, no hostile attributional bias tendencies by aggressive individuals were found. This finding is important because it suggests that the phenomenon is truly related to the interpersonal context and not to a cognitive bias to attribute behaviour to intentional action (Dodge and Frame, 1982).

2.2.1 Hostile Attribution of Intent and Gender

In the literature so far, not many studies have investigated gender differences in Hostile attribution of intent. Orobio de Castro et al., (2002) in their meta-analysis related to hostile attribution of intent and aggression found no significant gender difference for hostile attribution of intent. However, they revealed in their analysis that only one study was related to females, rest mainly investigated the phenomenon among males only.

In one related study, Yeung and Leadbeater (2007) found no significant gender differences in hostile attributional bias however it was conducted only for relational aggression. Researchers expected that girls would report more hostile attributions for relational aggression given that girls place greater value on their social relationships than boys (Casey-Cannon et al., 2001), and may be more sensitive to behaviours that hurt relationships. They argued for the
findings that in adolescence, relationally aggressive behaviours become more prevalent both for boys and girls (Craig, 1998; Prinstein et al., 2001). Therefore, relational provocations that damage peer relationships may be more common and hurtful for both adolescent boys and girls. In one similar study, Zakriski and Coie (1996) assessed gender differences in perceptual bias but neither gender main effects nor interactions were supported by the investigation.

In another study (Aktas et al., 2005), mostly expected but contradictory findings were observed. The study was conducted to investigate whether hostile attributional bias operates differently among males and females. Main effects of gender came out to be significant for general hostile attributions with boys expressing more hostile attribution of intent than girls to the ambiguous negative outcomes represented in the pictures.

Previous studies of hostile attribution of intent and aggressive behaviour (e.g., Dodge, 1980; Coie, Dodge, Terry, & Wright, 1991; Hymel et al., 1993; Bierman, Smoot, & Aumiller, 1993; Hughes et al., 1997) either included insufficient numbers of female participants for gender patterns to be examined or focused mainly on boys (Dodge, 1980; Mayeux & Cillessen, 2003; VanOostrum & Horvath, 1997). Therefore, the present study extends past research by taking both males and females as participants and by examining gender differences in hostile attributional bias.

Thus, Hostile attribution of intent has been considered an important element in the explanations of aggression. Aggressive individuals display an attributional bias whereby they perceive hostile intent in others when exposed to an ambiguous provocation, which further predisposes them to behave aggressively. Therefore, it is required that aggressive individuals be equipped with skills for interpreting the behaviour of others accurately during the process of
attribution i.e. determining the intentions and causes of another's behaviour. Accurate attribution of others’ intent and behaviour would then result in adaptive behaviour.

### 2.3 Irritability and Aggression

Irritability has been defined as the tendency to adopt a hostile attitude and rudely to the slightest provocation and at the slightest disagreement (Caprara et al., 1985). It has been suggested that one aspect of affective dysregulation that is key in the manifestation of aggression is, irritability (Caprara, Paciello, Gerbino, & Cugini, 2007). Little research has been directed at attempting to isolate and test specific functional mechanisms within the broad etiological framework of “cognitive and affective dysregulation”. However, one could argue that poor cognitive and affective regulation of behaviour can lead to the thwarting of one’s goals and therefore an increased likelihood of experiencing greater levels of negative affect, particularly, irritability.

Aggressive behaviour and irritability have been linked in the literature and irritability is found to be a moderator of aggressive reactions to disapproving or insulting remarks from another person (Caprara & Renzi, 1981; Caprara, Renzi, Alcini, D'Imperio, & Travaglia, 1983; Caprara et al., 1984; Caprara, Renzi, D'Augello, D'Imperio, Rielli, & Travaglia, 1986). Consistent with these findings for aggressiveness, other studies (Renzi et al., 1984; Anderson et al., 2004) for irritability showed that, even when situations are relatively neutral, individuals who are high on irritability engage in higher levels of aggressive behaviour than those who are low on irritability.

The idea that irritability leads to aggression is consistent with Berkowitz’s (1993) cognitive neo-associationistic model. This model suggests that aggression is the result of negative affect, which includes irritability. The experience of negative affect (i.e., irritability)
activates aggression-related memories, emotions, physiological responses, and motor patterns, which together form an associationistic network that further potentiates one’s irritation thus predisposing the individual toward a violent response to provocation.

Irritability accounted for a significant portion of variability in aggression in studies where subjects, after failing a memory task, were given access to noxious stimulation against an innocent peer as well as in other studies where exposure to aggression-eliciting cues or to enhanced excitation were interpolated between the frustrating event and available aggression (Caprara et al., 1983).

Irritability has also been found to be elevated in individuals who are anxious, emotionally unstable and who are least friendly and agreeable in their relationships. Findings from researchers have reported similar results from preadolescents to adults (Butler & Nolen-Hoeksema, 1994; Collins & Bell, 1997; Costa & McCrae, 1992; Halverson et al., 2003; Kochanska et al., 2004; Nolen-Hoeksema, 1995; Nolen-Hoeksema et al., 1994; Thayer et al., 2003).

Several other studies support the relation between irritability and aggressive behaviour. Irritable men and women have been shown to exhibit greater levels of aggression, toward a fictitious opponent in a laboratory setting, compared with their non-irritable counterparts, particularly after being exposed to a frustrating stimulus (Caprara et al., 1985; Caprara et al., 1986). In one study, following nicotine deprivation, men with high irritability scores were found to be more aggressive in a laboratory setting compared with men with low irritability scores (Parrott & Zeichner, 2001). In addition, irritability at age 12 has been shown to predict physical aggression and violence in late adolescence (Caprara, et al., 2007).
Bettencourt et al.’s (2006) meta-analysis examined the role of relatively enduring tendencies and provocation on aggressive behaviour and concluded that, while some tendencies influenced aggressive behaviour only in situations involving provocation, other were relevant in both neutral and provocative circumstances. Specifically, irritability exerted an influence on aggressive behaviour under both types of conditions.

Previous researches have shown an interaction between irritability and level of provocation on aggressive behaviour (e.g. Caprara, Barbaranelli, & Comrey, 1992). In these studies, high levels of irritability were associated with greater levels of aggressive behaviour under both neutral and provoking conditions, but the magnitude of this association was larger under the provoking conditions.

In summary, the literature reveals a positive relation between irritability and aggressive behaviour under both neutral and provoking conditions. These findings on irritability throw light on the moderating role of anger regulation when coping with provocation. In particular, irritability pointed to the role that defective control over emotions and faulty cognition exerts in amplifying the effects of situations conducive to aggression. Thus, by targeting cognitions through some intervention, level of irritability can be altered.

### 2.4 Impulsivity and Aggression

Aggressive behaviour can be divided into two broad categories: premeditated and impulsive. These categories can be defined by the degree of cognitive control over the behaviour. Impulsive aggression results from the inability to control one’s impulses (Berkowitz, 1993). Impulsivity and aggression have been found to be highly correlated constructs (Bech & Mak, 1995). Aggression is associated with self-reported impulsivity, neuroticism, physical aggression, and anger (Stanford et al., 2003a). While the literature on
adults has largely focused on cognitive and biological mechanisms involved in impulsive aggression, the research on childhood and adolescence aggression tends to focus on social information processing, peer relations, and emotional dysregulation (Dodge et al., 1997; Waschbusch et al., 1998). Specifically, impulsive aggression in adolescents is associated with high levels of hostile behaviours (Atkins & Stoff, 1993; Atkins et al., 1993) and hostile attribution bias (Schwartz et al., 1998).

Externalizing behavioural problems tend to be associated with low effortful control (Eisenberg et al., 2001; Eisenberg et al., 2000; Lemery et al., 2002; Murray & Kochanska, 2002). Individuals with externalizing behavioural problems have been found to be relatively high on impulsivity (Krueger, Caspi, Moffitt, White, & Stouthamer-Loeber, 1996; Lengua et al., 1998; Lynam, 1997). In their study, Eisenberg and Morris (2002) hypothesized that individuals prone to externalizing problems are low in all types of effortful control (i.e., attentional and with regard to the voluntary inhibition or activation of behaviour) and are reactively under-controlled (i.e., impulsive). These deficits would account for externalizing individual's lack of behavioural control and for the diminished attentional and socio-cognitive capacities (e.g., information processing; Coie & Dodge, 1998).

Impulsivity has been associated with verbal and physical aggression (Shapiro et al., 1988; Vigil-Colet & Codorniu- Raga, 2004), number of arrests and crimes committed (Babinski et al., 1999), and with delinquency (White et al., 1994). In addition, impulsivity has been found to moderate the influence of social factors, such as affiliating with deviant peers (Goodnight et al., 2006) and neighborhood disadvantage (Lynam et al., 2000).

Netter et al., (1998) had participants perform a joint task with a confederate and either provoked participants with frustration and insults or did not. The results showed that in the
provocation condition, individuals who were high in impulsivity administered more intense electrical shocks to the confederate than did individuals who were low in impulsivity. Hynan and Grush (1986) have also revealed a relation between impulsivity and aggressive behaviour, particularly under conditions of provocation.

There are researches that show high correlation between psychometric measures of impulsivity and aggression (e.g. Dolan & Rachael, 2004; Bech & Mak, 1995; Coccaro, 1989). Psychometric measures of impulsivity and aggression have been reported to show negative correlations with 5-HT function (e.g. Dolan et al., 2001) and 30% of the variance in aggression scores has been accounted for by impulsivity (Plutchik & Van-Praag, 1995). Furthermore, research findings indicate that behavioural and psychometric measures of impulsivity are highly correlated with the development of delinquent behaviour (White, et al., 1994; Farrington, 1993) On the same lines other researchers (e.g. Gottfredson & Hirschi, 1990) have reported that impulsivity is a key contributory factor to aggression and violence in offender populations. For example in a study of 385 male institutionalized violent offenders (Wang & Diamond, 1999), impulsivity and antisocial personality were found to be significant predictors of aggression. Among a sample of individuals with a history of violence, impulsivity served as a significant predictor of future violence. In one similar study, Stalenheim (2000) examined the link between impulsivity, suicidality and aggression in 61 forensic psychiatric inpatients. A higher degree of impulsivity was found for violent offenders who were also suicidal. These results suggest that violence and self-destruction may be linked by an individual tendency toward poor impulse control and behavioural regulation. In another study, men on parole for a violent crime were found to be more prone to select a quick “impulsive” reward for a particular
behaviour instead of a time-delayed “better” reward, than were men on parole for nonviolent crimes (Cherek, Moeller, Schnapp, & Dougherty, 1997).

Impulsivity, when assessed in a different ‘delay gratification paradigm’, has also been found to be related to aggression. In a study using this paradigm, Dougherty et al., (1999) found that hospitalized women with high impulsivity were less likely to delay gratification during a reward for performance task and were more likely to respond aggressively toward individuals whom they perceived as being in their way.

Despite the recognition that violent or aggressive populations are likely to have high base-rates of impulsive behaviour, there are very few studies of impulsivity and aggression (Logue, Pena-Correal, Rodriguez, & Kabela, 1986) and among published studies, mostly tend to limit the behavioural measures to delay of gratification paradigms (e.g. Cherek & Lane, 1999; Cherek, et al., 1997). Some studies report moderate correlations between Barratt’s impulsivity scale and delay of gratification tasks; they also report high rates of impulsive responding on delay of gratification tasks in male and female violent parolees. These findings point to the need to expand this work into well-characterized aggressive samples so that relationships between impulsivity and aggressive behaviours can be better understood.

In one of their study, Dodge and Newman (1981) explored the role of speed of decision-making in the association between hostile attribution and aggressive group status in a sample of 81 elementary school boys classified as aggressive or less aggressive based on teacher and peer reports. Participants listened to a story about a boy who may have committed a hostile act; in all stories, the boy’s guilt was ambiguous. They were then allowed to listen to up to five audio testimonials by different “peers” of the “suspect” in order to gather enough evidence to make a decision about whether the boy committed the hostile act. Content of the testimonials was
counterbalanced across participants. The number of testimonials sought was taken as indicator of speed of decision-making, and the number of guilty decisions made was the indicator of hostile attribution. Dodge and Newman divided the participants into groups of quick and slow responders based on within-cell median splits on the number of testimonials heard. Boys in the aggressive, quick-responding group were more likely to make a decision of ‘‘guilty’’ than the pooled group of aggressive, slow responders and all less aggressive participants. The authors presented it as ‘‘an empirical support for the hypothesis that aggressive boys who respond quickly will attribute hostile behaviours to others in unwarranted circumstances’’ and ‘‘aggressive boys who (do) not respond quickly (make) decisions that (are) not biased or different from those of less aggressive boys’’ (Dodge and Newman, 1981).

Impulsivity has also been found to influence social information processing because, while deciding how to react in negative situation, impulsive individuals tend to decide quickly without taking care of future consequence of their actions (Crick & Dodge, 1994). Thus aggressive adolescents’ inappropriate quickness must be altered and they should be trained to evaluate their reactions before actually acting in negative social situations. This learning can be provided by social cognitive interventions in which evaluation pattern can be modified that may result in appropriate decision making and social interactions.

2.5 Emotional Susceptibility and Aggression

Growing evidence (Barth & Bastiani, 1997) suggests that aggressive individuals tend to process emotion information differently than other individuals. Aggressive and hostile individuals tend to attribute more anger to others as compared to less aggressive individuals (Schultz et al., 2000). Thus, aggressive individuals tend to be more emotional susceptible or anger prone than less aggressive ones. Several theorists hold that individual’s emotionality
influences the development of stable emotion–cognition patterns. These stable patterns, in turn, motivate patterns of behavioural responses. On the other hand, maladaptive connections between emotions, thoughts, actions, and situational contexts may lead to psychopathology and social maladjustment (Cicchetti, Ackerman, & Izard, 1995; Keltner & Kring, 1998).

Anger proneness influences anger attribution bias, for example, anger proneness may motivate individuals to perceive anger and hostility in others and react aversively and aggressively toward them. They may subsequently reinforce their anger attribution bias. Although a history of aggressive interactions may also influence the development of emotion processing patterns, some evidence (Dodge, Murphy, & Buchsbaum, 1984) suggests that emotion processing patterns play a causal role in the formation of aggression. For example, when rejected individuals believe that another person’s actions toward them are motivated by hostile intent, they report responding with aggression much more than when they perceive the other as having pro-social or unclear intentions (Dodge & Somberg, 1987).

Studies have found that the experience of anger in one’s environmental contexts predicts biases toward perceiving anger. For example, children who have more depressed caregivers and unstable family environments display greater anger attribution bias (Schultz et al., 2000). Similarly children from physically abusive home environments also display biases toward perceiving and/or interpreting anger in others’ facial expressions (Camras, Sachs–Alter, & Ribordy, 1996; Pollak et al., 2000).

Along with environmental influences on anger attribution bias, emotional states of the individuals also play a vital role in their emotion attributions (Carlson et al., 1983; Meerum Terwogt, Kremer, & Stegge, 1991). Related studies using the hostile attribution bias methodology reported that (a) individuals are more likely to display hostile attribution biases in
threatening situations (Dodge & Somberg, 1987), (b) aggressive individuals report both greater levels of personal emotional distress and hostile intent in others in provocative situations (Crick, 1995; Crick, Grotpete, & Bigbee, 2002), and (c) depressed third- to sixth grade children exhibit greater hostile attribution bias than non-depressed children (Quiggle, Garber, Panak, & Dodge, 1992).

Aggressive individuals experience anger more often than other individuals (Arsenio, Cooperman, & Lover, 2000; Crockenberg & Langrock, 2001; Eisenberg, Fabes, Murphy, Shepard, Guthrie, Mazsk, Poulin, & Jones, 1999; Jenkins & Oatley, 2000). Many individuals are quick to anger in response to situational events (e.g., being bumped), and this leaves them at risk for engaging in aggressive interactions. A little has been discussed about the relationship between other components of emotionality, especially positive ones, and aggression. Research by Arsenio and his colleagues suggests that positive emotionality may protect individuals from aggressive interactions (Arsenio et al., 2000; Arsenio & Lover, 1995). Happy individuals may exhibit greater frustration tolerance and/or develop interpersonal skills that buffer against potentially provocative situations. It remains unclear; however, whether increased positive emotionality protects against aggressive interactions beyond the effects of decreases in negative emotionality (e.g., anger proneness).

Although there is considerable research on the relations of emotional reactivity and negative emotionality to social and problem behaviours, much of this research has been conducted with clinical samples rather than normal individuals. In general, temperamental reactivity and negative affective tone have been associated with negative behaviours (e.g., aggression, angry outbursts) and behavioural problems in childhood (Barron & Earls, 1984;
Emotional susceptibility seems related to ‘emotion regulation’ which is conceived as being the processes or strategies that are used to manage emotional arousal so that successful interpersonal functioning is possible (Garber & Dodge, 1991). Individuals low in negative emotionality have been found to be relatively low in externalizing behaviours (Eisenberg et al., 2000) and that emotional (i.e., attentional) regulation buffered the effects of negative emotionality, particularly at moderate and high levels of dispositional negative emotionality (Caspi et al., 1994). Moreover, if one’s emotional regulation skills are not developed or poorly-developed, he/she may be susceptible to experience varied emotions including irrational anger. In this development cognitions play an important role. Huesmann (1998) argued that negative emotionality or affect results from the cognitive evaluation that an external stimulus is provoking. Some tendencies that are marked by the propensity to experience negative affect or to misperceive situations as provoking or to process social situation inaccurately are associated with higher levels of aggressive behaviour. If this learned information processing pattern is maladaptive, it can cause inappropriate experience of anger and behaviour. Thus, these maladaptive styles must be unlearned and appropriate ways to process social information need to be acquired by aggressive adolescents.

2.6 Narcissism and Aggression

Narcissism has been described as a ‘mixed-blessing’ (Paulhus, 1998) because it comprises adaptive and maladaptive features. On one hand, narcissists can be outgoing (Bradlee & Emmons, 1992), confident (Emmons, 1984), perform well under pressure (Wallace & Baumeister, 2002), and implement self-regulatory tactics that preserve self-esteem (Morf &
Rhodewalt, 2001) and on the other hand, narcissists tend to be impulsive (Vazire & Funder, 2006), fail to learn from their mistakes (Campbell, Goodie & Foster, 2004), and—perhaps most concerning—are prone to many forms of aggression including verbal, physical, and violence (Baumeister, Smart & Boden, 1996; Bushman & Baumeister, 1998).

Kohut (1972) wrote about narcissism and did believe that unhealthy expressions of the grandiose self develop when individuals failed to integrate grandiose ideas of themselves with realistic views of their failures and shortcomings, and that if the grandiose self had not evolved into a realistic sense of self worth “then the adult ego will tend to vacillate between an irrational overestimation of the self and feelings of inferiority and will react with narcissistic degradation to the thwarting of its ambitions” (Kohut, 1972). As a result, narcissists would disburse much energy in seeking affirmation from people and being overly vulnerable to criticism and rejection. Kohut laid the foundation for a theory of narcissistic aggression after ego threat that has received empirical support (e.g. Bushman & Baumeister, 1998) by suggesting that “narcissistic rage” would occur in response to perceive injuries to the ego (Kohut, 1972).

Narcissism deserves attention as the most relevant self-concept variable for studying aggression (Baumeister & Campbell, 1999). Initial recognition of the important role that narcissism plays in aggression can be credited to Freud (Raskin & Terry, 1988). It involves the devaluation of others as a defense against the fear of loss of love and the depression that typically occurs when this fear becomes reality. The long-held view that aggression is associated with low self-esteem was challenged by Baumeister and colleagues (1996). They proposed that it is persons with very positive self-views i.e. very high self esteem, who are prone to be aggressive. As a result, building up individuals’ self-perceptions may serve only to
increase levels of aggression rather than curb them. When the narcissists’ inflated but unstable self-esteem is combined with their hypersensitivity to interpersonal feedback, the result may often be a tendency to be hostile, aggressive, and even violent responding. Individuals with inflated egos think they are the center of the universe. Unfortunately, such individuals also become aggressive when they are criticized or rejected by others (e.g., Bushman & Baumeister, 1998, 2002; Campbell, Bonacci, Shelton, Exline, & Bushman, 2004; Stucke & Sporer, 2002). Support for the threatened egotism model of aggression has led to a fundamental re-conceptualization of the roots of violence in many areas (Baumeister, Smart, & Boden, 1996). For example, the FBI report on school violence now lists threatened egotism as a risk factor (O’Toole, 1999).

In a comprehensive review on the relationship between inflated self-views and aggression, Baumeister, Smart, and Boden (1996) provided a strong theoretical and empirical case linking violence to inflated beliefs in the self's superiority that are disputed by some person or circumstance. Garrison, Earls, and Kindlon (1983) reported that individuals classified as positively biased in their self-perceptions of acceptance and competence were rated by clinicians and teachers as exhibiting more behaviour problems (e.g., aggression) than individuals with accurate or negatively biased self-views. In later studies also it was found that children and adolescents who overestimate their self-perception and competencies are more likely to be aggressive (Boivin et al., 1989; Hymel et al., 1990; Patterson et al., 1990; David and Kistner, 2000).

Individuals who are both rejected by peers and aggressive have been found to have positively biased perceptions of their social and behavioural competencies, whereas rejected, less aggressive children have accurate self-perceptions (Hymel et al., 1993; Zakriski & Coie,
1996). Rejected, aggressive individuals are significantly more likely to overestimate their competence than average and rejected, less aggressive individuals (e.g., Hymel et al., 1993).

Researchers also found aggressive individuals to evaluate their social and behavioural functioning as consistent with or higher than their average, less aggressive peers despite being rated more negatively by teachers, parents, and peers (Hughes, Cavell, & Grossman, 1997; Webster-Stratton & Lindsay, 1999). In addition, the tendency to inflate ratings of competence and relationship quality relative to the ratings made by others was associated with higher levels of aggression (Hughes et al., 1997). Unrealistic and inflated view of one's competence and support is a liability rather than an asset because it may reflect distorted social reasoning processes that interfere with the ability to learn from past experiences or the motivation to change maladaptive behaviour. Therefore, rather than serving a protective function, unrealistic and inflated self-perceptions increase the risk status for aggressive individuals.

Consistent with the view that aggression and narcissism are related constructs, Raskin, Novacek, and Hogan (1991) found positive inter-correlations among narcissism, grandiosity, dominance, and hostility, suggesting that disproportionately favorable views of the self are associated with aggression. Further, Raskin et al., (1991), found that in individuals who report high levels of grandiosity, dominance, and narcissism, hostility is frequently used as a way to maintain and inflate self-esteem. However, in the absence of these tendencies (grandiosity, dominance and narcissism), people who express higher hostility report lower self-esteem.

Bushman, Baumeister, Phillips and Gilligan (1999, cited in Baumeister, Bushman & Campbell, 2000) found that imprisoned violent offenders had significantly elevated levels of narcissism. Critically, however, their highest scores were on the NPI subscales of Entitlement and Superiority. This suggests that the dangerous aspects of narcissism are not vanity and self-
admiration but, rather, the inflated sense of superiority and sense of entitlement to special privileges (Baumeister et al., 2000).

Aggression has been found to be positively correlated with narcissism in adults also (e.g., Rhodewalt & Morf, 1995; Heatherton & Vohs, 2000). In an experimental study, Bushman and Baumeister (1998) found young adults with high scores on the NPI reacted to a negative evaluator with significantly more displaced aggression in comparison to participants with low scores on the NPI. Bushman and Baumeister (1998) in two studies found the support for the hypothesis that the emotional reaction to interpersonal feedback tends to be one of hostility and aggression. Additionally, Stucke and Sporer (2002) found that participants high in narcissism and low in self-concept clarity showed the most anger and aggression after failure, whereas participants low in narcissism and high in self-concept clarity reported the highest levels of depression.

Findings of studies conducted by Rhodewalt and Morf (1995) and Rhodewalt et al., (1998) suggested that emotional reactions of individuals high on narcissism are strongly tied to interpersonal events and self-relevant social information perceived as negative or ego threatening, evokes higher levels of hostility, feelings of anger and aggressive behaviour in narcissistic individuals. However, recently narcissism has been linked to aggressive responding even in the absence of ego threat (Martinez, Zeichner, Reidy & Miller, 2008). Narcissists defend themselves aggressively, but also aggress against others when unprovoked. Perhaps most disturbing is that laboratory-controlled studies of the narcissism and aggression have an ecological parallel in some of the most severe forms of aggression.

High defensive egotism, as measured by a need for attention, positive self-evaluation, and difficulty with criticism, was associated with bullying and support for bullying among
adolescent boys (Salmivalli et al., 1999). Working with different types of aggression, Salmivalli (2001) hypothesized that narcissistic features are specifically related to proactive aggression, but not reactive aggression. Salmivalli (2001) proposed that the narcissistic characteristics of exploitativeness and lack of empathy motivate people with narcissism to use aggression instrumentally to actively construct and/or reinforce a grandiose self-image.

A study directly examined the association of narcissism with conduct problems and callous-unemotional traits in a sample of 98 community adolescents, in the age range of 9–15 years (Barry et al., 2003). Using a modified version of the NPI, Barry and colleagues found an interaction between narcissism and self-esteem. Specifically, high scores on the NPI predicted greater conduct problems only when combined with low self-esteem. Additionally, young adolescents with higher NPI Adaptive composite scores and low self-esteem had significantly greater conduct problems, while young adolescents with high NPI Adaptive composite scores and high self-esteem had significantly fewer conduct problems. Finally, as predicted by research with adults, the maladaptive composite of the modified NPI was positively and directly associated with conduct problems and callous-unemotional traits, and negatively associated with self-esteem.

Walder (1925) suggested that narcissists would be highly analytic in their cognitive style. Witkin and Goodenough (1977) provide evidence that field-independent people are higher in self-focus and lower in other-focus than are field-dependent individuals. Field-independent people make less use of other people’s opinions and information (are less likely to be socially influenced) under ambiguous conditions, are inattentive to social cues, show physical and emotional distance from others. Cognitive–affective processing models (e.g., Morf & Rhodewalt, 2001) maintain that narcissists engage in ineffective or even counterproductive
interpersonal strategies because they are insensitive to others’ concerns. In other words, although their behaviour seems self-defeating to the outside observer, it is actually a deliberate, though ill-conceived, strategy that makes sense from the point of view of their internal subjective logic.

It has also been found that situational variables often interact with person variables to predict aggression. In response to provocation, for example, narcissistic people tend to behave quite aggressively, whereas narcissists do not show high levels of aggression in response to praise (Thomaes & Bushman, 2010).

Taken together, there is strong support within the literature in the field of Psychology that aggressive individuals have a tendency to possess narcissistic or unrealistically positive self-views. Besides this, researches from sociology also provide some evidence for the aggression-narcissism link. Jankowski’s (1991) characterization of attitudes and worldviews of youth gangs contain indicators of narcissism. Jankowski (1991) found that gang members were mostly violent towards people "whom they perceive to show a lack of respect or to challenge their honor". Another sociologist, Anderson (1994), summarized his observations of Black street youth gangs by noting that the code of the streets centers around "respect" which gangs regard as an external quality involving being "granted the deference one deserves". In addition, Anderson (1994) also stated that respect is enhanced by what he calls "nerve" which is acting as if one is above the rules and as if one disregards the fights of others. Collectively, gang members lack empathy and believe that they should be treated as superior beings, and both these elements reflect key aspects of narcissism.

The studies discussed above indicate that narcissistic individuals are more aggressive. The research scenario however, is not that simple and straight. Considerable debate exists in the
self-perception literature over the impact of positively biased self-perceptions (i.e., self-perceptions that are more positive than objective indicators warrant) on social and psychological functioning. One view suggests that positive perceptual biases are characteristic of normal human thought across a variety of domains and correlated with good mental health and psychological adjustment (e.g., Taylor & Brown, 1988; Taylor, 1989). Researchers and clinicians (e.g., Harter, 1983; Cairns & Cairns, 1988; California Task Force, 1990) have even proposed that by boosting self-concepts, symptoms of depression and levels of aggression may be reduced. Investigators on the other side of the debate maintain that when most positive self-perceptions are compared to an objective criterion, they appear neither positively biased nor adaptive (John & Robins, 1994; Colvin, Block, & Funder, 1995). In fact, Baumeister, Smart, and Boden (1996) suggested that the maintenance of positively biased self-concepts may have a “dark side.” The NPI also has been found to be negatively associated with relationship-related variables: empathy and perspective taking (Watson, Grisham, Trotter, & Biderman, 1984), agreeableness (Rhodewalt & Morf, 1998), need for intimacy (Carroll, 1987) and to correlate positively with hostility (Raskin, Novacek, & Hogan, 1991; Bushman & Baumeister, 1998). Furthermore, narcissists who reported the most firmly held positive self-views also had the most adversarial view of others—they reported the highest cynical hostility and antagonism (Rhodewalt & Morf, 1995).

Despite of inconsistencies in narcissism literature numerous studies support the connections between high levels of narcissism and aggressive behaviour in adolescents and adults. Survey studies have also found associations between high scores on the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988) and the experience and expression of anger

The attribution process for narcissists may also help explain their propensity to become aggressive. Weiner (1985) explained that people activate certain emotional reactions immediately after receiving an outcome or social evaluation (either positive or negative) from others, and then explore any plausible explanation of the outcome (attribution), which produces further affect (as attribution-dependent emotion, e.g. rage or anxiety). To maintain a positive self-image, in general, people tend to make external attributions for undesirable outcomes and internal attributions for desirable outcomes (Bond et al., 2006; Brown, 2004). In this context, perceiving a greater ego-threat, as narcissists tend to do, should amplify such an attribution bias. In other words, narcissists appear increasingly self-serving in their attributions (Bond et al, 2006; Emmons, 1987; Stucke, 2003). For example, Rhodewalt and Morf (1998) claimed that people with high scores on the Narcissistic Personality Inventory attribute successful outcomes more to their own ability than less narcissistic people. Stucke (2003) demonstrated that highly narcissistic individuals tend to show external attribution for failure feedback and internal attribution for positive feedback. Furthermore, Campbell, Reeder, Sedikides and Elliot (2000) conducted a study to examine the possible relationships between narcissism and comparative self-enhancement strategies, which refers to favorably comparing the self with other people, such as blaming a co-worker for a failed task outcome. They found that people high in narcissism, compared to those low in narcissism, relied more on comparative self-enhancement strategies after receiving negative feedback (Campbell et al., 2000).

Thus, given the need to protect an unstable self-image, narcissists may exhibit extreme reactions when their grandiose self-concept is threatened (Baumeister et al., 2000). Narcissists
report greater dispositional hostility and vengeance (Brown, 2004). Furthermore, in laboratory studies, they show more anger and aggression in response to insult (Baumeister et al., 2000) and social rejection (Twenge & Campbell 2003). Such aggression in response to negative interpersonal feedback may be, in part, a result of their inability to control the impulse to retaliate when faced with ego threat (Vazire & Funder 2006).

All these finding are providing support for the assertion that narcissistic individuals’ inaccurate perception of their self leads to many negative outcomes for themselves and others. Narcissistic individuals’ have been found to be biased in evaluating their self and often have unrealistic self images and they tend to maintain it by all means including aggression. This fragile self image can be altered by modifying one’s perspective to evaluate oneself in more objective manner. Altered appraisal of the self with cognitive intervention may then result in less narcissistic features and subsequently less aggressive behaviour.

2.7 Cross-Cultural Perspective of Aggression

Cross-cultural research shows that cultures differ significantly with regard to aggression (Kornadt et al., 1980). Cultural factors affect attitudes toward interpersonal aggression (Ramirez, Andreu, Fujihara, Musazadeh, & Saini, 2007). Aggressive behaviour appears to be common to most, if not all cultural patterns. One thing commonly observed in all cultures is that neglect, rejection and a positive evaluation of aggression promote aggressiveness; however, the function of these factors is not clear. Aggressive reactions in early childhood are similar across cultures. Another similarity seen across cultures is that a certain sequence of internal processes led to aggressive action (frustration-anger-malevolent interpretation-
activation of aggression motive-goal setting decision for aggressive action) indicating a possibly universal motive system.

Besides similarity in aggression across cultures, empirical cross-cultural research has also found differences in the level of aggression between cultures. In individualistic cultural patterns e.g. as in America, men resort to physical aggression more readily than men living in the collectivistic cultural patterns like Japan wherein men prefer the direct verbal conflict more than their American and Spanish counterparts (Andreu et al., 1998). Within the American culture, southerners were shown to become more aroused and to being respond more aggressively than northerners when affronted (Bowlde et al., 1996).

Individuals from collectivistic cultures also experience anger and aggression, but, it seems it is expressed more toward the out-group members than the in-group members. Matsumoto et al., (1988) found that Japanese respondents reported feeling anger primarily in the presence of strangers. In contrast, Markus and Kitayama (1991) stated that American and Western Europeans reported experiencing anger primarily in the presence of closely related others. The authors suggest that when anger arises it happens outside of the existing interdependence as in confrontation with out-groups (e.g. Samurai warfare in feudal Japan).

Countries where aggression is considered non-normative such as Japan have low homicide rates; countries where violence has become almost a way of life such as El Salvador and Guatemala have homicide rates over one hundred times higher (Buvinic, Morrison, and Shifter, 1999). Social norms or normative beliefs about acceptability of aggressive behaviour can be responsible for cross-cultural differences on aggression. As these beliefs are readily changeable through intervention (Amjad & Wood, 2009) targeting normative beliefs may be a way to decrease aggression in certain individuals.
Cultural factors also affect the development of attributional biases leading to aggression. For example, Miller (1984) found that Americans explained another person’s behaviour that had either good or bad consequences primarily in relation to good or bad qualities or other relevant dispositional terms. Indians, on the other hand, explained similar behaviours in terms of social obligations, interactions, and other situational factors. Situational attributions were twice as frequent for Indians as for Americans and internal attributes were twice as frequent for Americans as for Indians. Miller (1984) also provided evidence on socialization of the culturally divergent attributional tendencies.

Nisbett and Cohen (1996) hypothesized that culture affects social–cognitive responding and aggressive behaviour by placing relative value on disrespect, honor, and the sense of threat to one's personal integrity. A culture that highly values personal honor will encourage hostile attributions in response to personal threats and provocations. They provide evidence that the American South is characterized by these values, in contrast with the North. In laboratory experiments, the authors had confederates provoke southern and northern college students by bumping into them and calling them. Over 80% of southerners responded to this provocation with anger toward the provocateur, in contrast with less than 40% of northerners. After this provocation, when presented with a hypothetical scenario depicting insult, 75% of southerners answered with an aggressive response, in contrast with 41% of northerners. Physiological measures collected at the same time indicated that southerners responded to the provocation with higher increases in cortisol and testosterone than northerners. In yet another experiment in which participants were provoked or not, southerners were more likely than northerners to attribute malevolent intent to the provocateur and to believe that the provocateur thought of the participants as “wimpy.” The authors conclude that a major cause of southern males' violence is
the “sense of threat to one of his most valued possessions, namely, his reputation for strength and toughness” (Dodge, 2006).

To conclude, there are differences as well as similarities in aggressive behaviour of individuals across cultures. Such diverse findings make it all the important to conduct more cross-cultural research in relation to aggression.