

INTENDING TO BE AGGRESSIVE:
APPLYING THE THEORY OF PLANNED BEHAVIOUR
TO REACTIVE AND INSTRUMENTAL
ADOLESCENT AGGRESSION

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By

Jonathan Edward Brown

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ABSTRACT

Adolescents' intentions to behave in both reactive and instrumental aggression were assessed using the Theory of Planned Behaviour (TPB; I. Ajzen, 1985). Along with examining the TPB, perceptions of self-efficacy (A. Bandura, 1982) towards both types of aggression were also assessed. Self-report questionnaires were administered to 162 grade 10 to 12 students in two independent school districts. Using Path Analysis, the TPB was shown to significantly explain both instrumental and reactive aggression. In the context of reactive aggression, attitudes were found to have the greatest influence on intentions to behave aggressively. As for instrumental aggression, self-efficacy was found to have the greatest influence on intentions. Overall, the results of this study provide support for using the TPB to explain adolescent aggression. In addition, this study further demonstrates the value of distinguishing between reactive and instrumental functions of aggression.

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CHAPTER 1 INTRODUCTION

The topic of aggression is one to which many people can relate as they have likely experienced aggressive behaviour either as victims and/or perpetrators. Interestingly, when looking at the lifetime incidence of aggressive behaviour, Geen (1998) argued that the majority of aggressive behaviour occurs during adolescence. This statement implies that most aggressive behaviour begins and ends in adolescence. From this argument it would appear as though aggression is simply an element indicative of the transition from childhood to adulthood. Huesmann (1988) argued, however, that evidence shows levels of aggression remain stable from childhood to adulthood. In fact, Huesmann (1994) claimed that childhood aggression at the age of eight predicts criminality at the age of thirty. Huesmann and Reynolds (1994) further contended that because aggression appears to be stable, it is important to examine aggression during adolescence and develop early prevention and treatment programs. Whether aggression is viewed as a characteristic of the transition into adulthood or a stable individual characteristic, it is apparent that focusing on aggression during adolescence is critical to developing an overall understanding of aggression in general.

Focusing on adolescent aggression is warranted as a large number of adolescents are adversely affected by such behaviour. For instance, in the United States of America, homicide is reported to be the second leading cause of death among all 10 to 19 year old males (Buka, Stichick, Birdthistle, & Earls, 2001). This statistic is certainly not lost on the public as the topic of adolescent aggression is likely to elicit a multitude of images,

such as children running from their school following a shooting or the aftermath of gang violence on a busy city street. While such images highlight the impact of adolescent homicide, a fatal form of aggression, the most alarming aspect is that such a form of aggression is relatively rare (Astor, Pitner, Benbenishty, & Meyer, 2002; Williams, MacMaster, & Ellis, 2002).

Establishing the prevalence of adolescent aggression is difficult as it is often underreported (Tyson, Dulmus, & Wodarski, 2002). Looking at physical aggression, Buka et al. (2001) estimated the ratio of nonfatal incidents to fatal incidents to be as high as 100:1. Examining nonfatal physical aggression, Roberto, Meyer, Boster, and Roberto (2003) reported that in a large adolescent survey 36% of adolescents disclosed being in a physical fight within the last year. In terms of perpetrating aggression, Chesney-Lind, Artz, and Nicholson (2002) reported that in a Canadian survey close to 21% of girls and 52% of boys reported physically assaulting at least one other adolescent within the last year. While these types of aggression do not receive the same level of media coverage as those of homicide, they have been found to have extensive effects on victims with respect to mental health, academic performance, and social relationships (MacNeil, 2002).

The implication of high prevalence rates of less documented forms of aggression is that adolescent aggression is more common than many think. Rather than aggressive behaviour being localized to a select group of adolescents, most adolescents experience such behaviour in one form or another. Such exposure is evident in the large number of adolescents who report both anticipating future aggression and feeling unsafe at school (Barkin, Kreiter, & DuRant, 2001; Roberto et al., 2003). These results are consistent

with the fact that a large proportion of adolescent aggression occurs on school days either on or near school grounds (Astor et al., 2002; Williams et al., 2002).

While many may be unaware of the prevalence of adolescent aggression and the impact that all types of this behaviour have on the lives of adolescents there is no shortage of attempts to explain why the behaviour occurs. When presented with images of a gang of adolescents swarming and attacking a lone individual or listening to an adolescent recount the verbal assaults received daily from classmates, people respond that such behaviour is inexplicable, senseless, or completely random. In response, researchers have attempted to explain and understand the behaviour in a number of ways. For example, many studies have looked at identifying contributing risk factors, such as hyperactivity (see Pope, Bierman, & Mumma, 1991), birth order (see Martin & Ross, 1995), socio-economic status (see Herrenkohl et al., 2001), and violent video games (see Gentile, Lynch, Linder, & Walsh, 2004; Ulmann & Swanson, 2004). Unfortunately, Winkel, Blaauw, and Kerkhof (2002) argue that one problem occurring from many studies focusing on identifying such risk factors is that they are often atheoretical. What results from these studies is a large list of potential risk factors that have not been integrated into a theoretical framework, which Berkowitz (1994) argued is necessary to understand aggression. This is not to say that such studies are without merit as they can be used to identify whom prevention/intervention programs should target (Reppucci, Fred, & Schmidt, 2002). However, the extent to which risk factors contribute to adolescent aggression or how they interact with one another is unclear.

One interesting question that has not been directly assessed is whether or not adolescent aggression is an intentional behaviour. Is aggression truly a behaviour that is

senseless, random, and without previous contemplation? Or perhaps these elements are only characteristic of the specific types of aggression. The purpose of this study is twofold. First, this study will examine the extent to which adolescent aggression is an intentional behaviour. It should be noted that by intentional it is not necessarily meant that adolescents plan out precisely when they will behave aggressively, although in some instances such planning does occur (e.g., the school shootings in Littleton, Colorado). Rather, *intentional* refers to the process whereby individuals recognize aggression as a viable means to obtain specific outcomes and when the opportunity arises they will behave aggressively to obtain those outcomes. This perspective is consistent with theoretical views that human behaviour is rational rather than controlled by unconscious drives and desires (see Ajzen & Fishbein, 1980; Bandura, 1997). For instance, Ajzen and Fishbein (1980) argued that people make use of available information and consider their actions before engaging in them. The second aspect of this study is to examine the extent to which specific types of aggressive behaviour are intentional. Previous research has identified fundamental differences in the functions of aggressive behaviour (see Dodge, Lochman, Harnish, Bates, & Pettit, 1997; Feshbach, 1964; Meloy, 2006). Thus, it is important to assess if intentionality is characteristic of all aggression or simply a specific type of aggression. Understanding the intentional nature of adolescent aggression can have an impact on how aggression is researched and addressed in prevention and intervention programs. Furthermore, this study will also address the applicability of targeting aggression in general or as distinct behaviours.

The following sections outline in detail the theoretical framework and variables examined in this study. First, the concept of aggression is discussed. This discussion

highlights that aggression is not a homogeneous behaviour, as well as the limitations and oversights that have been problematic in previous studies on aggression. After operationally defining aggression the theoretical framework used for this study will be presented. In particular, the assumptions and components of Ajzen's (1985) theory of planned behaviour will be discussed. Following this section, independent research as it relates to the specific components of the theory will be presented as well as the subsequent hypotheses for this study.

1.1 Defining Aggression

Aggression is a term encompassing many distinct behaviours. It is important to first acknowledge the distinction between the terms violence and aggression. These terms are often used interchangeably even though they are not synonymous. Violence is a form of aggression that involves the threatened or actual use of physical force towards another person (Moeller, 2001; Reppucci et al., 2002; Roberto et al., 2003). Therefore, behaviour that does not involve the use of physical force can still be considered aggressive, but not violent. Aggression should also be distinguished from the term antisocial behaviour. Antisocial behaviour includes actions that disadvantage people by violating moral, ethical, and legal values (e.g., lying and stealing; Kempes, Matthys, de Vries, & van Engeland, 2005; Moeller, 2001). According to this definition, aggression is a specific form of antisocial behaviour.

Getting to the specifics of aggression, harm and intent have been identified as two elements that must be present in order for the behaviour to be considered aggression (Bartol & Bartol, 2005). The first element, harm, implies that for an action to be considered aggressive it must be directed towards another individual and result in that person experiencing harm whether it is physical, emotional, and/or social (Berkowitz,

1988; Crick, Bigbee, & Howes, 1996; Feshbach, 1964). As a result, aggression is not limited to physical force, but can include behaviours involving verbal threats, social exclusion, or any other behaviour resulting in emotional or social harm. Inclusion of the second element, intent, has been widely contested among researchers; however, Feshbach (1964) argued that it allows for the distinction between accidents resulting in injury and voluntary behaviours enacted for the purpose of causing another person harm. For instance, if not realizing your colleague was behind you, you inadvertently close the door and physically hurt him or her, your actions would not be considered aggressive. Conversely, if you knew that your colleague was behind you and you purposely closed the door knowing he or she would be injured, your behaviour would be considered aggressive. Considering these two elements, aggression is defined as behaviour directed at another person with the intention of harming that person (Bartol & Bartol, 2005).

Within the range of the above definition there are further distinctions in aggression that must be made. Feshbach (1964) stated that not all acts of aggression are equal. Since that time numerous studies have attempted to identify the unique types of aggression. Throughout the literature there is a consensus that two main functions exist; however, there is not a consensus regarding what they should be labelled. Feshbach initially identified *instrumental* and *hostile* types of aggression, which are characterized by their underlying function (i.e., the purpose they intend to serve). Therefore, rather than refer to them as types, they are generally referred to as functions. The author argued that instrumental aggression involves an injurious act motivated by the desire for an outcome that does not involve the injury of another person. In other words, while the behaviour is still intended to harm another individual the goal of inflicting harm is

secondary to another goal, such as establishing dominance or obtaining financial rewards. For example, a girl may physically attack another girl not for the sole purpose of harming her, but because by harming her she will gain social status. It is also important to note that this type of aggression is not considered to be based on anger or reflect retaliation against previous behaviour (Bartol & Bartol, 2005; Dodge & Coie, 1987). Throughout the literature this type of aggression is also referred to as *proactive* (Dodge & Coie, 1987; Dodge et al., 1997; Poulin & Boivin, 2000).

Feshbach (1964) also identified *hostile* aggression, which consists of behaviour where the primary intention is to cause harm to another person. One of the key features of this behaviour is that it is a retaliatory response to previous harm inflicted upon the aggressor (Dodge et al., 1997). This may also include actual or perceived threat (Dodge & Coie, 1987). For example, a boy threatening another boy after being pushed in the hallway at school would be considered hostile aggression. This type of aggression is alternately referred to as *reactive* aggression, because it occurs as a direct response to provocation (Berkowitz, 1988; Dodge & Coie, 1987; Hubbard, Dodge, Cillessen, Coie, & Schwartz, 2001). This behaviour is also characterized as involving anger (Berkowitz, 1988, 1990). For the purpose of this study, the functions of aggression will be labelled as either instrumental or reactive.

Adding to the necessity of distinguishing between instrumental and reactive aggression is the use of distinct theories to explain each function. Two of the more commonly used theories are social learning theory (Bandura, 1973, 1977) and the frustration-aggression hypothesis (Dollard, Doob, Miller, Mowrer, & Sears, 1939). Kempes et al. (2005) stated that originally these two theories were viewed as competing

theories, however, in the 1960s it was recognized that they referred to the different functions of aggression.

Instrumental aggression is often explained by social learning theory in that it is driven by expectations of rewards (Bandura, 1973). Bandura (1977) argued that most learning takes place indirectly through modelling, which involves acquiring information by observing others. This does not simply mean that the observer mirrors the model's behaviour. Rather the observer extracts underlying rules imbedded in the behaviour. After observing and learning behaviour people will perform behaviours that have value or are rewarding as opposed to those that have punishing effects. It is important to realize that Bandura's theory implies that people can learn behaviour without directly experiencing any rewards; however, rewards are critical in motivating people to later perform the behaviour (Pervin, 1996).

In a famous research study, Bandura, Ross, and Ross (1963) demonstrated that children can acquire behaviour despite the absence of rewards, but the presence of rewards greatly influences the expression of the learned behaviour. After observing parents behaving aggressively towards a Bobo doll and either receive a reward, punishment, or nothing, children were observed interacting with the doll. First the children were observed without incentives, and then they were observed with an incentive to behave aggressively. Results indicated that children performed more aggressively in the incentive conditions. The authors concluded that rewards clearly influenced the performance, but not the acquisition of behaviour. With respect to instrumental aggression, individuals are performing a learned behaviour intended to harm another person in order to obtain rewards.

Conversely, reactive aggression is explained by the frustration-aggression hypothesis (Dollard et al., 1939), which was one of the first theories to explain aggression from a learning perspective rather than an instinctual/drive approach (Eron, 1994). Dollard et al. contended that aggression results from frustration that occurs when obtainment of a desired and expected goal is interfered with. As a result, the authors proposed that all aggression is rooted in frustration (Berkowitz, 1988). The hypothesis also implies that frustration induces aggression. Over the years, many criticisms of the hypothesis were made. An important criticism is that Dollard et al. treated aggression as a homogenous behaviour (Berkowitz, 1988, 1989). The authors perceived aggression as behaviour aimed at primarily harming someone, while not recognizing that aggression can be used to obtain alternative goals, such as in the case of instrumental aggression (Berkowitz, 1989). Other researchers criticized the fundamental propositions put forth by the hypothesis. For instance, Bandura (1973) argued that frustration serves only to generate emotional arousal to which social learning determines the responding course of behaviour. Others, such as Baron (1977) argued that aggression would only occur if individuals were not expecting their goals to be blocked.

While many criticized the foundations of the frustration-aggression hypothesis, Berkowitz (1988, 1989, 1990) addressed some of the criticisms and reformulated the hypothesis into his cognitive-neoassociationistic model. First, Berkowitz (1988) recognized the need to distinguish between instrumental and reactive aggression. The author contends that his reformulation is only applicable to reactive aggression. Central to his revisions are the inclusions of anger and negative affect. Berkowitz (1990) argued that aggression results from anger. Anger in turn is caused by the negative affect

generated by aversive stimuli. The model proposes an association between negative affect and anger related feelings, ideas, memories, and aggressive inclinations. In other words, negative affect leads to anger that disposes the individual to respond aggressively. An important aspect of this model is that anger and subsequent aggression are not conditional upon an individual perceiving their personal goals to be thwarted by another (Berkowitz 1989, 1990; Berkowitz & Harmon-Jones, 2004). Instead, Berkowitz and Thome (1987) demonstrated that aggression could result from negative affect induced independently of the individual targeted for aggression. Therefore, this model is used to explain why aggression occurs during aversive situations such as extremely hot days or traffic jams.

The cognitive-neoassociationistic model highlights that not all aversive situations produce equal negative affect or subsequent responses (Berkowitz, 1989). For instance, if a goal is thwarted unexpectedly the resulting affect will be more unpleasant than if a goal is thwarted according to expectations. But in any case, reactive aggression is seen as a direct response to conditions producing negative affect, such as being provoked by another person or situation.

Aside from the development of distinct theoretical explanations for the functions of aggression, various studies have found significant group differences between those engaging in instrumental or reactive aggression. For instance, Dodge et al. (1997) found that reactively aggressive adolescents tend to exhibit aggressive behaviour earlier than instrumentally aggressive adolescents. These findings are consistent with the theoretical explanations for the behaviour. Because reactive aggression reflects an inability to deal with frustration (Dollard et al., 1939) it can be expected that young children who are less

experienced in controlling aggression would engage in such behaviour. Additionally, instrumental aggression is governed more by social reinforcement that becomes more dominant in later development (Bandura, 1973; Dodge et al., 1997).

A study by Poulin and Boivin (2000) also found that the two forms of aggression relate to different levels of social adjustment. The authors reported that instrumentally aggressive adolescents had lower levels of social withdrawal and higher levels of leadership and peer status than reactively aggressive adolescents. Consistent with these results, Little, Brauner, Jones, Nocke, and Hawley (2003) found instrumentally aggressive adolescents to have fewer social and academic deficits than reactive adolescents. Furthermore, the instrumental group did not differ on measures of social adaptiveness from the typical group, which was identified as not displaying elevated levels of either type of aggression.

One caveat that should be mentioned in relation to the two studies discussed above is that high levels of aggression are not necessarily associated with being well liked by peers. Prinstein and Cillessen (2003) assessed the relation between peer status/popularity and acceptance. Using a peer nomination approach in which adolescents are asked to nominate their peers according to a number of criteria, instrumental aggression was associated with high levels of peer popularity. However, such aggression was not associated with likeability or acceptance. Incidentally, reactive aggression was not associated with social preference.

Although many studies examining instrumental and reactive aggression have found support for distinguishing the two functions, the results also indicate considerable statistical overlap between the two constructs. For instance, Dodge and Coie (1987)

reported that factor analysis indicated the presence of two factors; however, the computed eigenvalues were small. Furthermore, the two factors were found to correlate highly with one another. Poulin and Boivin (2000) conducted a later study using the teacher-rating scale developed by Dodge and Coie (1987). The authors wanted to assess if the proposed two-factor model would be a better fit than a one-factor model. Results from their study supported the presence of a two-factor model over a one-factor model; however, there was still a high correlation between the two factors ($r = .82$). A high correlation indicates a large overlap between the two types of aggression, and calls into question the presence of two distinct types of aggression. However, these findings may be a result of the measurement scale used.

Little, Jones, Henrich, and Hawley (2003) argued that previous studies examining the types of aggression may be confounded. The authors indicated that the measurement tools being used do not distinguished the functions of aggression from the forms of aggression. The discussion thus far has been focused on the functions of aggression, which provide insight as to what purpose the behaviour is serving, or rather, why an individual is behaving aggressively. For instance, aggression may be exhibited in order to relieve the frustration that is being experienced due to provocation or the behaviour may be carried out in order to obtain some social reward, such as an increase in social status. However, the functions do not explain how that person is aggressive (Little, Brauner et al., 2003).

Previous studies have identified two distinct forms of aggression: overt and relational (Little, Jones et al., 2003). Overt forms of aggression involve physically or verbally hurtful behaviour towards another person. Through overt aggression an

individual directly causes another individual harm, such as by hitting or verbally threatening him or her. Conversely, relational aggression is more indirect because harm is intended towards another person by harming his or her social relationships. Some examples of relational aggression include social exclusion, spreading hurtful rumours, and withdrawing friendship from the target.

The two forms can be expressed for either reactive or instrumental reasons. Thus, many scale items are confounded as they inadvertently combine the functions and forms. For instance, the scale created by Dodge and Coie (1987) includes the following item: “uses physical force to dominate” (p.1150). Teachers would use this scale and rate how often the statements apply to each of their students. The authors argue that this question measures the extent to which a particular student uses instrumental aggression. However, the question is confounded in that it asks about both a particular form and function of aggression. For instance, physical force is reflective of an overt form of aggression, while dominance is characteristic of instrumental aggression. While a child may behave physically aggressive towards others it may not be because they want to dominate the other children. Therefore, it is not clear to which aspect the teacher may be responding.

In response to such confounds, Little, Jones et al., (2003) developed a measurement system that allows for the functions and forms of aggression to be disentangled. The measurement system was developed in order to partial out the variance associated with the pure forms of aggression. As a result, measures of the functions of aggression are obtained while controlling for the forms. Using this system, the authors found that reactive and instrumental aggression is not correlated and

concluded that the functions of aggression are distinct. The results indicated that instrumental aggression reflects planned, self-serving behaviour; whereas, reactive aggression is a clear response to provocation reflecting an inability to control one's emotions. Interestingly, the authors also report that the forms of aggression (i.e., overt and relational) were correlated, indicating that adolescents will use whichever form is available and/or expected to be effective.

Taking into consideration the above discussion, aggression in this study was operationally defined as any behaviour intended to harm another person either physically, emotionally, or socially. In addition to the general definition this study also took into account the functions and forms of aggression. However, this author shares the view of Little, Brauner et al. (2003) that while examining the forms of aggression is instructive, it does not provide insight as to why individuals behave aggressively. Therefore, this study is mostly concerned with the functions of aggression.

1.2 Theory of Planned Behaviour

Ajzen's (1985, 1991) theory of planned behaviour (TPB) was used as the theoretical framework for this study. Prior to developing the theory of planned behaviour, Ajzen and Fishbein (1980) proposed the theory of reasoned action (TRA). An underlying assumption to these two theories is that humans are rational beings who make systematic use of available information. Behaviour is seen as goal oriented and that people are often aware of the behaviour required to obtain certain goals (Ajzen, 1985). Therefore, people make decisions as to take a certain action or not (Ajzen & Fishbein, 1980). The main premise of the TRA is that behaviour is determined by intentions. Simply stated, the authors argued that the best way to predict behaviour is to ask the person if he or she intends to perform it. Bandura (2001) also argued that

inquiring about intentions is useful, as they do not merely represent expectations to perform, but rather a proactive commitment to a behaviour and its outcome. It is important to note that intentions will reflect the individual's attempt to perform a behaviour and not the actual performance of the behaviour (Ajzen, 1985).

While Ajzen and Fishbein (1980) argued that intentions are the best predictor of behaviour, they also recognized that the relation is not always accurate. Inaccuracy results from a lack of correspondence between intentions and behaviour criterion. The authors described three elements that must be congruent. First, when inquiring about the behaviour it is important to identify the target behaviour. Second, the context needs to be set. For example, to assess if individuals intend to get in a fight at school, it is not sufficient to simply ask if they will get in a fight, or if they like to fight. Rather, they should be asked if they intend to get in a fight at school. The third element involves limiting the behaviour to a particular time period. Continuing with the example, this would involve asking if they intend to get into a fight at school within the next thirty days. With respect to the element of time, intentions tend to be more accurate when they are assessed close to the time of the potential behaviour (Ajzen, 1985; Ajzen & Fishbein, 1980). Therefore, it is best to assess behavioural intentions in relation to short time periods.

Generally, the association between intentions and behaviour is useful in making predictions about behaviours; however, it does not add to the understanding of why individuals engage in particular behaviours (Ajzen & Fishbein, 1980). In order to improve understanding, the determinants of intentions must be identified (Ajzen, 1985). The authors proposed two determinants of intentions: attitudes and subjective social

norms. Attitudes constitute a personal determinant as they reflect a person's evaluation as to whether performing a particular behaviour is good or bad (Ajzen & Fishbein, 1980, 2000; Fishbein & Ajzen, 1975). Conversely, subjective norms are a social determinant of intentions. These norms involve individuals' perceptions of the social pressures they are under to either perform or not perform the behaviour (Ajzen, 1985; Ajzen & Fishbein, 1980). More specifically, these norms consist of individuals' perceptions of what those people important to them think they should do with respect to the target behaviour (Ajzen & Fishbein, 1980). While attitudes and subjective norms are both determinants of intentions, they are conceptualized as being independent (Ajzen & Madden, 1986). Research indicates that the two determinants have been found to impact intentions to different degrees across various behaviours and situations (Ajzen, 1991).

The TRA allows for one to assess the association both attitudes and subjective norms have on intentions and subsequent behaviour. However, discussion thus far has explained attitudes and subjective norms at a more general level and does not provide insight into why people hold certain attitudes and subjective norms. To understand the foundation of these components, the salient beliefs of each determinant must be explored (Ajzen, 1985). Ajzen and Fishbein (1980) argued that an attitude is made up of behavioural beliefs about the object of the attitude. Because people can only attend to a limited amount of information, it is the combination of salient beliefs that determine the overall attitude. Each behavioural belief is comprised of an outcome expectancy and an evaluation of that potential outcome. Outcome expectancies link each behaviour to its perceived potential consequences (Ajzen & Madden, 1986).

Similar to attitudes, subjective norms are based on a combination of normative

beliefs about the behaviour (Ajzen & Fishbein, 1980). Normative beliefs consist of individuals' perceptions of what other people important to them think they should do and whether or not they are motivated to comply with those referents. When discussing normative beliefs, it is important to distinguish Ajzen and Fishbein's (1980) conceptualization from that of Huesmann (1988; Huesmann & Guerra, 1997). According to the author's conceptualization, normative beliefs are a form of self-regulation and involve an individual's own cognition about which behaviour is acceptable and which is unacceptable. In other words, Huesmann and Guerra (1997) used the term to reflect individualistic standards of behaviour. Conversely, Ajzen and Fishbein (1980) used the term to reflect an individual's perception of the social pressure to perform or not perform a given behaviour.

Just as attitudes and subjective norms have variable impact on intentions from context to context (Ajzen, 1991), salient beliefs can have unequal impact on subsequent attitudes and subjective norms. However, this does not imply that they should be weighted according to importance. Ajzen and Fishbein (1980) reported that data indicate individuals typically evaluate beliefs according to importance. For example, if a particular outcome is considered more important it will be evaluated either more positively or negatively than a less important outcome. In fact, the authors warned that statistical weighting of beliefs actually reduces predictive accuracy.

In summary, the TRA contains three levels of inquiry/analysis. At the first and most general level, behavioural intentions are the direct determinants of behaviour (Ajzen & Fishbein, 1980). At the second level, behaviour intentions are independently determined by attitudes and subjective norms toward the behavioural object. Finally, at

the third level, attitudes are understood by a composition of relevant outcome expectancies; whereas, subjective norms are identified through motivations to comply with views of relevant referents.

Two strengths of the TRA are that it is parsimonious, utilizing only a small set of constructs, and it was originally argued to be applicable to any human behaviour (Ajzen & Fishbein, 1980). However, the theory was based on an assumption that has recently brought its utility into question. The TRA assumes that behaviour is under the complete volitional control of the individual. Complete volitional control occurs when a person can perform or not perform a behaviour at will (Ajzen & Madden, 1986). If a behaviour requires particular opportunities or resources to be available, the behaviour is under less volitional control. For example, a person may decide that he or she wants to go to another city, but because doing so would require access to transportation, the behaviour is not under his or her volitional control. In fact, Ajzen (1991, 2002a) stated that most behaviour is contingent on factors beyond the individual's own desire.

In order to deal with the issue of volitional control Ajzen (1985) extended the TRA into the theory of planned behaviour (TPB). This revised theory maintains the same components of the TRA, however, the construct of perceived behavioural control (PBC) was added. PBC entails a perception of the overall ease or difficulty involved in performing a behaviour (Ajzen, 2002). Similar to attitudes and subjective norms, PBC is also argued to be a composition of salient behavioural control beliefs (Ajzen, 1985, 2002b). The first component entails beliefs regarding various resources or opportunities that could impact individuals' ability to engage in a behaviour, while the second component entails an evaluation as to whether or not the specific circumstance would

facilitate or impede performance (Ajzen, 2002b; Madden, Ellen, & Ajzen, 1992). The PBC construct was added for situations when people lack complete volitional control (Ajzen, 2002a). Ajzen (1991; 2002a) argued that if people are realistic in judging a behaviour's difficulty, PBC serves as a proxy measure for actual control and aids in the prediction of behaviour.

The TPB proposes that PBC affects behaviour both directly and indirectly through behavioural intentions (Ajzen, 1985). The indirect path implies that PBC has a motivational impact on intentions similar to attitudes and subjective norms. For instance, if someone believes they have little control in performing a behaviour, they may have little intention to perform the behaviour despite having favourable attitudes and subjective norms. In their study comparing the TPB to the TRA, Madden et al. (1992) found that when behaviour was not under complete volitional control the TPB was more accurate in predicting behaviour than the TRA

The discussion concerning PBC draws parallels with Bandura's (1986, 1997, 1999) concept of perceived self-efficacy. Self-efficacy refers to people's belief in their own capability to perform a specific behaviour and have control over the events in their lives. If people have low perceived self-efficacy, and as a result do not believe that they can produce the results they desire, they will have little incentive to perform a behaviour, pursue a goal, or cope with diversity (Caprara, Regalia, & Bandura, 2002). People's decisions regarding what to do, how much effort to use, and how long to persevere are contingent on their perceptions of self-efficacy (Bandura & Cervone, 1983). It is important to note that self-efficacy is not a reflection of individuals' perceptions of their overall capabilities, but rather, self-efficacy exists in many different

capacities that are related to specific behaviours and actions (Bandura, 1997; Erdley & Asher, 1996). For instance, a person may have high self-efficacy in their ability to play the piano but low self-efficacy with respect to ballroom dancing. Evidently, such a person would be expected to be more motivated to play the piano and continue playing the piano despite any increase in difficulty, compared to ballroom dancing. Bandura (1997) argued that if self-efficacy was a stable and overall perception of ability, behaviour should remain consistent across time and situations, which is often not found to be the case.

Similarly, PBC reflects individuals' perceptions of their control over a specific behaviour (Ajzen, 1985). This construct is also thought of as the perceived ease or difficulty of performing an action. Ajzen and Madden (1986) have themselves stated that PBC is similar to self-efficacy, in that it constitutes self-efficacy in a more general framework. However, Bandura (1997) stated that PBC is contingent upon self-efficacy. For example, Bandura described that people with low self-efficacy will often perceive tasks to be more difficult. In other cases, people may lack resources and face many obstacles, thus, perceiving a task to be difficult, however, due to their high self-efficacy they believe they can succeed through perseverance. Bandura argued that such people are often innovators and social reformers. At any rate, Bandura indicated that in many studies variables of PBC are often confounded with perceived self-efficacy.

In a more recent article, Ajzen (2002a) clarified that self-efficacy is a component of PBC. Ajzen described a hierarchical model in which both the construct of controllability (i.e., belief about the degree to which taking action is up to the individual) and self-efficacy comprise the higher-order PBC. As a result, Ajzen contended that

measures of PBC should include components of perceived self-efficacy. Finally, the author concludes that depending on the purpose of the investigation either the aggregate PBC or the separate components can be used.

Research looking at the use of PBC and self-efficacy has found similarities and differences. For instance, Dzewaltowski, Noble, and Shaw (1990) substituted measures of PBC with self-efficacy and found that similar to PBC, self-efficacy has both a direct and indirect effect on behaviour in conjunction with attitudes and subjective norms. A meta-analysis of 90 studies, found that self-efficacy accounted for significantly more variance in intentions than attitudes and subjective norms (Cheung & Chan, 2000, as cited in Ajzen, 2002a). Interestingly, the analysis also found that controllability only predicted intentions when it was combined with self-efficacy.

In light of the above discussion, the following study focused on measures of self-efficacy rather than measures of PBC for a number of reasons. First, according to Bandura (1997) and Cheung and Chan (2000, as cited in Ajzen, 2002a) it appears that self-efficacy plays a more influential role in the TPB than PBC. Second, self-efficacy reflects a motivating factor that is context specific (Bandura 1997). As such, self-efficacy was expected to provide more insight into potential differences between reactive and instrumental aggression than PBC. Finally, a purpose for conducting this study was to provide information about adolescent aggression that could be used to improve and/or develop prevention and intervention programs. Self-efficacy plays a central role in number of intervention strategies for various behaviours (e.g., Miller & Rollnick, 2002), therefore, increasing the potential applicability of this study. As a result, the following study utilized a model of the TPB that substituted measures of PBC

with measures self-efficacy. It should be noted that such a modified model has been used previously (see Dziewaltowski et al., 1990; Cheung & Chan, 2000, as cited in Ajzen, 2002a).

To date the author is only aware of two studies that have examined aggression using the TRA and no studies using the TPB. Evans and Taylor (1995) used the TRA to compare violence in both contemporary and earlier gangs. The authors interviewed 18 earlier and 30 contemporary gang members. While the authors report grounding their study according to the TRA, their method of data collection and analysis deviated greatly from the recommendations set forth by Ajzen and Fishbein (1980). For example, to assess social norms the authors used proxy measures, such as frequencies of engaging in particular behaviours, and assumed that such behaviour was supported by the gang. Furthermore, the study focused on comparing variables between contemporary and earlier gangs rather than looking at the relation among the theory's constructs. As a result, it is difficult to draw conclusions from their study in order to inform this study and make predictions as to the role each of the theory's components play in predicting aggressive behaviour.

Roberto et al. (2003) also used the TRA to examine adolescent aggressive behaviour, in particular verbal and physical aggression. Despite the limited behavioural focus, the authors designed their study more inline with the components of the TRA. Interestingly, the authors found that intentions predicted both physical and non-physical aggressive behaviour. Looking at nonphysical aggression, both attitudes and subjective norms predicted intentions. However, only attitudes predicted intentions towards physical aggression. Closer inspection of the materials reveals that the authors did not

accurately inquire about subjective norms. Subjective norms should reflect individuals' perceptions of what significant others think they should do. The norms obtained during Roberto et al. study reflect only what participants perceived most kids would think. As such, the results from their study should be interpreted with caution. Due to the lack of evidence from directly applying the TPB to adolescent aggression evidence relating to each of the theories components independently must be examined.

1.3 Attitudes Towards Aggressive Behaviour

In general, attitudes have been found to be predictive in situations where they are activated and also when the individual perceives a link between an attitude and its corresponding behaviour (Greenwald & Banaji, 1995). Attitudes become predictive because they indicate a person's orientation (i.e., overall judgement) towards the object of the attitude (Augostinos & Walker, 1995). As stated earlier, behavioural attitudes stem from an evaluation of expected outcomes (Ajzen & Fishbein, 1980). Bandura (1997, 2001) argued that outcome expectancies are a major motivating factor in human behaviour, because people are more likely to engage in behaviours they expect to result in rewarding outcomes. Therefore, if you can determine people's overall attitude toward a behaviour you can predict if they are or are not likely to engage in it.

With respect to aggression, aggressive adolescents often expect their behaviour to be rewarding (Moeller, 2001). Previous research has identified a number of expected rewards, such as removing a frustrating stimulus (Dodge et al., 1997), defending masculinity (Lopez & Emmer, 2002), gaining social status (Fatum & Hoyle, 1996), establishing dominance (Prinstein & Cillessen, 2003) and making one's self feel better (Hubbard et al., 2001). What becomes apparent from this list is that the outcomes can be either immediate (e.g., removing a frustrating stimulus) or they can be more distant

(e.g., gaining social status). Such an idea is contrary to Gottfredson and Hirschi's (1993) argument that aggression is used only to pursue immediate outcomes, however, the authors failed to consider the distinct functions of aggression.

While it might appear as though reactive aggression would be focused on more immediate outcomes than instrumental aggression, research has found otherwise. Dodge et al. (1997) found that instrumentally aggressive youth were more likely to expect aggression to produce immediate and long-term outcomes. For instance, their study indicated that instrumentally aggressive adolescents were more likely to expect aggression to remove aversive behaviour by another peer than did reactive adolescents. The authors attributed this finding to the notion that instrumental aggression is developed through social learning principles governed by rewards and punishments.

1.4 Adolescent Social Norms Towards Aggression

Previous research has found that aggressive social norms exist among adolescents. These norms indicate what aspects of aggression are acceptable and expected from boys (Lopez & Emmer, 2002; Phoenix, Frosh, & Pattman, 2003) and girls (Bartol & Bartol, 2005; Chesney-Lind et al., 2002). The norms also indicate to what degree aggressive behaviour is accepted (Little, Brauner et al., 2003; Vidal, Clemente, & Espinosa, 2003). Furthermore, social norms depict the relation between aggression and social status, thus, highlighting the potential social rewards or punishments one can expect from engaging in aggressive behaviour (Crick et al., 1996; Huesmann, 1988; Poulin & Boivin, 2000). It is clear from such findings that social norms appear to play an important role in adolescents' use of and reaction to aggression.

Norms are an essential aspect of social influence on human behaviour (Cialdini & Trost, 1998). Social norms can be defined as the rules or standards that have been

adopted by members of a social group. These norms begin to guide behaviour because individuals are motivated to adopt and follow the norms as they provide a means of obtaining personal goals, such as knowing how to appropriately behave. Cialdini and Trost (1998) identified three types of social norms guiding behaviour: descriptive, injunctive, and subjective. Descriptive norms indicate what other adolescents typically do in similar situations. Injunctive norms reflect the approval or disapproval of specific behaviours by other adolescents. Subjective norms involve an individual's perception of how other people considered to be important think he or she should behave. Perceptions of these norms provide individuals an indication of what behaviour is expected of them from people of significant importance (e.g., peers, family, teachers, etc). From the previous discussion outlining the components of the TPB, this study is concerned with subjective norms, because they provide an indication of the individual's perception of social pressure to behave a particular way

Cialdini and Trost (1998) discussed the role of norm salience, stating that behaviour will be influenced by whichever norm is most salient in the situation. Thus, the norms that are most important to adolescents will be the ones that they are motivated to comply to. Duetsch and Gerard (1955) described descriptive norms in terms of informational influence. Because descriptive norms provide information about how others typically behave (Cialdini & Trost, 1998), individuals will conform to these norms when they are not sure how to behave. Therefore, it can be expected that descriptive norms would be more dominant for adolescents when encountering a novel situation.

Deutsch and Gerard (1955) argued further that when behavioural accuracy is no

longer important, informational influence would not be as dominant, thus, there will be less motivation to conform to descriptive norms. Instead, individuals will be motivated to conform to normative influences, which are reflected by subjective norms. Thus, individuals will be most interested in how other people important to them think they should behave. It should be noted that because subjective norms reflect the expectations of people considered to be important (Cialdini & Trost, 1998), they provide a clear indication of the social rewards relating to a particular behaviour.

Caprara et al. (2002) argued that an increasing level of independence marks adolescence. With this growing independence adolescents begin to focus on the goal of building and maintaining peer relationships (D'Amico & Fromme, 2003). Therefore, according to norm salience (Cialdini & Trost, 1998) subjective norms will be the most salient as these norms provide insight as to how adolescents should behave in order to maintain and further develop their social relationships (Deutsch & Gerard, 1955).

Fatum and Hoyle (1996) described adolescence as a period during which adolescents require peer acceptance. Anything that poses a risk to this acceptance, such as being disrespected, is expected to be dealt with. While adolescents may be instructed by parents and teachers to use non-violent methods to deal with others, such methods have the potential to be ignored, whereas, aggression provides a message that cannot be ignored. Thus, the authors argued that violence becomes a way of gaining or maintaining social status. Barkin et al., (2001) found additional support for this claim and stated that adolescents consider violence to be the appropriate response when one feels that he or she has been wronged. Barkin and colleagues argued that most violence reflects a moralistic grievance. Results from their study indicate that children as young

as 11, believe that moralistic violence is acceptable in resolving conflicts. The results from these studies raise an interesting question about the degree to which aggression is accepted under conditions of provocation. Please note that the preceding studies focused specifically on violent behaviour rather than aggression in general.

Dodge and Frame (1982) proposed that if children interpret the actions of others to be hostile towards them, they will respond aggressively. In other words, the aggressive behaviour of these children would be reactive as it is in response to provocation. Dodge (1980) argued that the issue of provocation becomes especially problematic for overly aggressive children because they often misinterpret the behaviours of other children as being hostile. More specifically, he argued that aggressive children's social cognitions are biased. The results from a study by Dodge and Frame (1982) support these arguments in that the frequency of boys' aggressive behaviour was positively correlated with the frequency by which peers initiated aggression. Furthermore, the rate at which the aggressive boys were aggressive was much higher than the rate at which peers initiated aggression; therefore, lending support to the claim that aggressive boys over attribute hostile intentions in other children. While these results support the idea that aggression is a normal and acceptable response to provocation, there are two aspects of this study to note. First, the study involved children who, as mentioned earlier, are less experienced in controlling aggression; therefore, caution should be used when generalizing the results to an adolescent population. Second, the study used only male participants, which limits generalizing the results to a female population.

While it has been shown that aggression may be acceptable under instances of

provocation, there are limits to the degrees of aggression that are acceptable.

Furthermore, the limitations that do exist are closely related to the specific types of aggression. Compared to reactive aggression, instrumental aggression has been found to relate positively to positive social status among adolescents (Little, Brauner et al., 2003; Little, Jones et al., 2003; Poulin & Boivin, 2000). Poulin and Boivin (2000) found that instrumental aggression was viewed and appreciated by peers as a form of social regulation. Conversely, reactive aggression was seen by peers to be more victimizing than instrumental aggression. It is important to also take into consideration that peers may be responding to the aggressor's individual characteristics. As was discussed earlier, those found to engage in instrumental aggression tend to be more adaptive and socially adjusted (Little, Brauner et al., 2003). For instance, instrumental aggression has been found to be positively associated with leadership qualities, whereas, reactive aggression was negatively associated with such qualities (Poulin & Boivin, 2000).

1.5 Adolescent Aggression Sex Norms

Throughout the literature on adolescent aggression specific sex norms are often reported. Historically, it was often thought that boys were more aggressive than girls, however, recent research has begun to find that girls' level of aggression is comparable to that of boys (Chesney-Lind et al., 2002). Some authors argue that girls' aggressive behaviour is simply different than that of boys (Bartol & Bartol, 2005; Crick, 1997; Crick et al., 1996). Girls are often found to be less overtly aggressive than boys and engage in more relational types of aggression (Crick et al., 1996). Bartol and Bartol (2005) argue that the reason for this can be attributed to girls and boys being socialized differently. The authors discuss that during early childhood there are no differences in aggression between boys and girls. However, as children approach school-age

differences began to appear.

Phoenix et al. (2003) stated that boys are subjected to social norms of masculinity that require them to behave aggressively. The authors argue that toughness and aggression are central components of masculinity. Furthermore, boys are required to hide their vulnerabilities if they want to be accepted by peers. Lopez and Emmer (2002) also stated that boys are pressured to act aggressively in order to defend their masculinity.

As for girls, Lopez and Emmer (2002) argued they do not face the same social norms of masculinity as boys do. However, Chesney-Lind et al. (2002) stated that girls often buy into the beliefs of masculinity in the sense that there is a need to police the behaviour of others. The authors indicate that girls use methods of shunning and slandering in order to punish and control the reputations of other girls.

While such sex differences in aggression have been previously reported, there is a problem with the manner in which aggression was defined. As was discussed earlier, operational definitions of aggression often confound the forms or aggression with the functions of aggression. After separating out these aspects of aggression Little, Brauner et al. (2003) and Little, Jones et al. (2003) found some of the sex differences did not exist. While boys exhibited higher levels of overt aggression than girls, there was no sex difference with respect to forms of relational aggression. These results indicate that previously found differences are an artefact of operational definitions. Therefore, further examination of sex differences with respect to aggression is needed.

1.6 Self-Efficacy and Adolescent Aggression

With respect to the relation between self-efficacy and aggression, if adolescents believe they can act aggressively and achieve their desired outcomes (e.g., gain peer

acceptance) they will be more likely to engage in such behaviour. Perry, Perry, and Rasmussen (1986) found that aggressive children not only believed that aggression would result in positive outcomes, but they also believed that they were more capable of being aggressive than non-aggressive children. A later study by Erdley and Asher (1996) further supported the role of self-efficacy by finding that aggressive children not only thought they were more capable of being successful by behaving aggressively, but they also perceived themselves as being less capable of obtaining their goals through prosocial behaviour.

Self-efficacy operates as a mediator of aggressive behaviour because even if people believe that aggression will result in a positive outcome, they will only be more likely to pursue the outcome if they believe they are capable of behaving aggressively (Erdley & Asher, 1996). Even if aggressive adolescents are cognitively biased as Dodge (1980) would argue, they would only behave aggressively if they believed they would be successful in producing a desired outcome (Perry et al., 1986).

1.7 Purpose of the Study and Its Hypotheses

As mentioned earlier the purpose of this study is to examine the extent to which adolescent aggression is an intentional behaviour. Addressing the intentional nature of aggression will improve understanding as to the level of awareness that adolescents have of future aggressive behaviour. In order to examine the intentional nature of adolescent aggression, a modified version of the theory of planned behaviour (Ajzen, 1985) was used. In addition, the discussion on the functions of aggression made it apparent that there are two distinct underlying reasons for aggressive behaviour. As such, the issue of intentionality was assessed for both instrumental and reactive aggression. This entailed running the model for each function independently.

Initial reviews of the functions of aggression might lead one to assume that instrumental aggression would certainly demonstrate intention; whereas, reactive aggression does not appear to be intentional, as it constitutes a more emotional response to the situation (Berkowitz, 1989, 2004). However, the discussion above highlighted that aggressive individuals have positive attitudes and subjective norms towards aggressive behaviour regardless of context. In other words, adolescents have favourable outcome expectancies and face social pressure to behave aggressively. As a result, it was expected that both instrumental and reactive aggression would provide evidence of intentions (Hypothesis 1). However, Berkowitz (1989) argued that responses during the early stages of experiencing negative affect, which is a precursor to reactive aggression, are more automatic and cognition has little influence until later stages when they do contain control. As a result, it is expected that while significant in both contexts behavioural intentions will be higher in instrumental aggression compared to reactive aggression (Hypothesis 1a). Additionally, when comparing the models, the TPB will provide a better fit for instrumental aggression (Hypothesis 1b).

Looking within each model, it is expected, as the TPB (Ajzen, 1985) would predict, that behavioural intentions are positively associated with behaviour (Hypothesis 1c). Furthermore, based on the studies that independently examined the relation of attitudes and social norms on adolescent aggression, both attitudes and subjective norms are expected to be positively associated with behavioural intentions (Hypothesis 1d).

Based on the argument raised concerning the relation between PBC and perceived self-efficacy, self-efficacy was substituted for PBC. However, it should be mentioned that data were collected on the construct of PBC so that its contribution could

be compared to that of self-efficacy. It is expected that similar to findings reported by Cheung and Chan (2000, as cited in Ajzen, 2002a), self-efficacy will account for more variance in intentions and subsequent behaviour than PBC (Hypothesis 2).

Self-efficacy is also expected to play an influential role in the TPB. It is important to remember that PBC, which is being substituted with self-efficacy, is argued (Ajzen, 1985) to have both a direct and indirect effect on behaviour. It was expected that self-efficacy would have an indirect effect on aggressive behaviour, in that it would be positively associated with behavioural intentions, which in turn are associated with behaviour (Hypothesis 3). Bandura and Cervone (1983) found that self-efficacy influenced how much effort people used to obtain a goal and also how long they would adhere to the goal. Therefore, people are more likely to engage in behaviours that they believe they are capable of performing successfully (Bandura, 1997). Results are expected to show that even if people have positive attitudes and strong subjective norms towards behaving aggressively, they are only likely to engage in aggressive behaviour if they have high levels of perceived self-efficacy. Therefore, the path from self-efficacy to behavioural intentions will be significant.

With respect to the direct effect of self-efficacy on behaviour was not expected to be present in this study (Hypothesis 4). Madden et al. (1992) found that the direct path between PBC and behaviour was significant when individuals perceived themselves to have little control over the behaviour. As a result, whether or not the individual intended to perform the behaviour did not matter, which limited the mediational effect of intentions. However, PBC and self-efficacy are not identical constructs, in that self-efficacy does not contain elements of perceived controllability;

therefore, a similar result is not expected.

Because the overall fit of the TPB to the two functions of aggression is going to be compared, it is necessary to discuss any expected influential differences of the theories components. In their analysis, Roberto et al. (2003) found attitudes to be better predictors of intentions than subjective norms. However, the authors did not address the distinct functions of aggression. Previous studies have reported that aggression is an accepted and often expected response to provocation (Barkin et al., 2001; Fatum & Hoyle, 1996). Due to this level of social pressure, social norms were expected to have a stronger influence on intentions to perform reactive aggression than on intentions to behave instrumentally (Hypothesis 5). With respect to instrumental aggression and its emphasis on future rewards, attitudes are expected to have a stronger influence on intentions. However, because of self-efficacy's impact on motivations to perform a given behaviour, self-efficacy was expected to have the greatest impact on behavioural intentions in both instrumental and reactive contexts (Hypothesis 6).

Finally, potential gender differences should be discussed. Unlike previous studies that only examined aggression among boys (Dodge, 1980; Dodge & Frame, 1982; Hubbard et al., 2001; Lopez & Emmer, 2002), this study included both boys and girls. Although previous research has also found girls and boys to differ in the frequency and form of aggression (see Crick, 1997; Crick et al., 1996), the measures of aggression tended to confound the forms and functions of aggression. When the confound was statistically controlled, boys were found to exhibit higher levels of overt aggression, but there were no significant differences for relational aggression (Little, Jones et al., 2003). Therefore, previous findings that boys are more aggressive could be

a result of a tendency to focus on overt forms of aggression. Because the focus of this study is on the functions of aggression, form will be collapsed across. After collapsing across form, it was expected that there would be no gender differences in the intentions to behave aggressively and in subsequent aggressive behaviour (Hypothesis 7).

CHAPTER 2 ELICITATION STUDY

In order to utilize the TPB and assess the intentional nature of adolescent aggression two consecutive studies were conducted. The first study was an elicitation study. The authors of the TPB and its predecessor, the TRA, have argued that it is necessary to ensure that measures used to assess the theories are compatible with the target behaviour in terms of action, context, target, and time (Ajzen, 1985; 2002b; Ajzen & Fishbein, 1980; Ajzen & Madden, 1986; Fishbein & Ajzen, 1975). More specifically, Fishbein and Ajzen (1975) stated that it is necessary to identify the attributional links to behaviour. Only once the link has been identified is it then possible to measure participants' belief strength. This highlights a potential pitfall of questionnaires that are designed according to the researcher's own assumptions. It is critical that members of the target population identify the relevant attributes so as to enhance the final questionnaire's ability to assess personally held beliefs.

Prior to constructing the final questionnaire, an elicitation study was conducted in order to identify behavioural, normative, and control beliefs that were relevant to the adolescent population of interest. First, information was gathered regarding the outcomes that adolescents expect to occur from aggressive behaviour. Second, the individuals that adolescents consider to be important to them in the context of aggressive behaviour were identified. Third, the situations that were believed to impact the ease or difficulty of behaving aggressive were elicited. The information gathered from this study was used to design questions regarding attitudes, subjective norms, and perceived

behavioural control that are relevant to both the issue of aggression and the target population. Such a procedure ensures that the questionnaire used in the main study addresses the appropriate behavioural attributes.

2.1 Participants

A convenience sample of 25 adolescents (14 girls and 10 boys) participated in this study. Participants were students enrolled in an alternative measures Catholic school located in Saskatoon, Saskatchewan. Participants' ages ranged from 15 to 19, with a mean age of 16.04 ($SD = 1.04$).

2.2 Materials

The elicitation questionnaire (see Appendix A) was designed according to the guidelines outlined by Ajzen (2002b). Throughout the questionnaire participants were asked a set of six open-ended questions regarding six behaviours. Participants were asked about general aggressive behaviour, threatening to hurt someone, physically or verbally hurting someone, and ignoring or telling a friend to ignore someone. The last two questions were asked in both an instrumental (e.g., hurt someone in order to get what you want) and a reactive context (e.g., hurt someone who hurt you).

After receiving the behavioural context, participants were asked to identify two or three advantages and disadvantages of engaging in such behaviour. These questions were used to elicit outcome expectancies that would be used to assess behavioural beliefs in the final questionnaire. In order to elicit appropriate referents for the normative belief questions, participants were then asked to list two or three individuals or groups of people who would approve and disapprove of engaging in such behaviour. Finally, participants were asked to describe two or three factors/circumstances that would make it easy and difficult for them to engage in such behaviour. These questions

were used to elicit items for measuring control beliefs in the final questionnaire.

The final section of the questionnaire asked participants to identify their sex and age.

2.3 Procedure

After obtaining approval from the Saskatoon Catholic School Board and the University of Saskatchewan Research Ethics Board, the researcher contacted eligible schools and specific course teachers to identify potential participants. Only high schools were eligible to participate. Because only a small number of participants were required for the elicitation study, only students in one class were asked to participate. The whole class, as opposed to individual students throughout the school, were approached to participate in order to minimize disruption to the school.

Prior to the administration of the study the researcher mailed out information letters to parents of potential participants (see Appendix B). These letters outlined the purpose of the study, the nature of each participant's involvement, and the researcher's contact information. The letters instructed parents to contact the researcher if they had any questions, or if they did not want their child to participate in the study.

The questionnaire was administered to participants during school hours and on school property. At the time of administration, the researcher entered the classroom and informed participants about the nature of the study. After participants voluntarily consented to participate (see Appendix C for the elicitation study consent form) the questionnaire was distributed. Of the 25 students who were asked to participate, only one student declined. Prior to beginning participants were given a definition of aggression. Specifically, participants were told that aggressive behaviour is any behaviour (e.g., hitting, kicking, threatening, or saying mean things) that is intended to

hurt another person either physically, emotionally, or socially. Participants were told that such behaviour does not include play fighting or sport related activity.

2.4 Results

Data were entered into SPSS 13.0. Responses to the open ended questions were analysed using content analysis to identify the most commonly held beliefs. First, the two most common responses to each question for the six behaviours were identified. For example, 35% and 15% of respondents stated *getting what I want* and *getting respect*, respectively, as advantages of behaving aggressively towards someone. Table 2-1 presents a list of the most common responses for each of the six behaviours. Next, the most common responses to identical questions (e.g., what are the advantages) across each of the behaviours were identified.

As a result the most common advantages that were listed across behaviours were *get what you want* and *get a reputation*. The most common disadvantages were, *get a reputation* and *get in trouble*. As for people/groups of people who would approve of such behaviour participants identified *friends* and *dad*, while *mom* and *teachers* were identified as people/groups of people who would disapprove of such behaviour. As for circumstances/factors that would make it easy to engage in such behaviour *being provoked* and *being angry/in a bad mood* were commonly identified, and *being at school* and *being with my family* were identified as the most common circumstances/factors that would make engaging in such behaviour difficult.

Table 2-1. Elicitation Study Results: Most Commonly Identified Responses

Questions	Most Common Response (%)						
	General Aggression	Threaten Someone	Hurt Someone (Instrumental)	Hurt Someone (Reactive)	Ignore Someone (Instrumental)	Ignore Someone (Reactive)	
What are the...		Get what you want (35%)	Be left alone (14%)	Get what you want (38%)	Get a reputation (12%)	Get what you want (21%)	Be left alone (26%)
	Advantages	Gain respect (15%)	Be intimidating (14%)	Get a reputation (14%)	Gain respect (6%)	Be left alone (7.1%)	Be intimidating (11.4%)
	Disadvantages	Get a reputation (25%)	Get in trouble (31%)	Get a reputation (21%)	Get in trouble (21%)	Get a reputation (20%)	Lose friends (36%)
		Hurt people (18%)	Hurt yourself (8%)	Hurt yourself (18%)	Hurt yourself (11%)	Lose friends (13%)	Get a reputation (15%)
Who would...		Friends (34%)	Friends (61%)	Friends (40%)	Friends (31%)	Friends (30%)	Friends (36%)
	Approve	Dad (13.6%)	Other relative (10%)	Dad (10%)	Dad (10%)	Dad (5%)	Mom (8%)
	Disapprove	Mom (28%)	Teachers (15%)	Mom (27%)	Friend (22%)	Mom (11%)	Friends (15%)
		Teachers (19%)	Mom (12%)	Teachers (12.2%)	Mom (14%)	Police (11%)	Teachers (12%)
What factors would make it...		Being provoked (23%)	Being provoked (64%)	Being provoked (23%)	Being provoked (30%)	Being provoked (18%)	Being angry (8%)
	Easier	Self-defence (21%)	Be in a bad mood (7%)	Self-defence (17%)	Self-defence (11%)	Being angry (9%)	Being provoked (4%)
	Difficult	Person was nice to me (20%)	With family (16%)	Person was nice to me (17%)	At school (10%)	With family members (20%)	With family (17%)
		At school (10%)	Person was nice to me (11%)	With family (10%)	With Family (10%)	Person was nice to me (7%)	At school (13%)

2.5 Discussion

In line with the recommendations of Ajzen and his colleagues (Ajzen, 2002b; Ajzen & Fishbein, 1980), an elicitation study was conducted in order to obtain the appropriate attributes of aggressive behaviour from a sample of the target population. In particular, participants identified with consistency the advantages/disadvantages of aggressive behaviour, people who they believed would approve/disapprove of them engaging in such behaviour, and factors that would make engaging in aggressive behaviour easy/difficult.

Due to the limited amount of time that was available to administer the final questionnaire to participants in the subsequent study, only a small number of questions were appropriate to ask. As a result, not all of the responses provided during the elicitation study could be used, thus making it necessary to only take the top two responses to each question across the six behaviours. The specific items that were chosen for the belief-based attitude measures were: *gain respect, get what I want; get a reputation, and get in trouble*. The referents chosen for the belief-based measure of subjective norms were: *mom, dad, friends, and teachers*. Finally, the items chosen for the belief-based measures of perceived behavioural control were: *being provoked, being at school, and being with my family*.

It should be noted that *being angry or in a bad mood* was also identified as a common response to the inquiry of what would make engaging in aggressive behaviour easy. This item is indicative of negative affect, which Berkowitz (1988, 1990) argued was conducive to reactive aggression. Interestingly, participants cited the presence of such an emotional state for both the instrumental and reactive contexts. This item was not chosen to be a belief-based item in the final questionnaire because of its close

relation to responses of being provoked. In fact, *being provoked* was the most common response across all aggressive behaviours. Berkowitz indicated that provocation would certainly induce negative affect, which would then lead to reactive aggression. Along with its apparent redundancy with provocation, the *being angry or in a bad mood* response was not included to limit the number of questions being asked of participants, which was of concern given participants' time constraints.

CHAPTER 3 MAIN STUDY

Following the collection and analysis of the elicitation study data, the final questionnaire was created. The questionnaire was administered to adolescents enrolled in grades 10, 11, and 12. A number of previous studies have elicited participants from elementary school (see Crick, 1997; Dodge et al., 1997); however, the authors do not always specify why they chose those particular grades. This study targeted older adolescents for three specific reasons. First, this study used a self-report questionnaire, which requires participants to reflect on their experiences, beliefs, and perceived capabilities. Little, Jones et al. (2003) argued that students beyond grade five have a sufficiently developed sense of self to make reliable reports. Second, adolescents in their latter years of education tend to have the most experience when it comes to aggression. As stated earlier, the majority of adolescent aggression takes place on or near school grounds during school hours (Astor et al., 2002; Williams et al., 2002). Therefore, students enrolled in higher grades will have experienced the most time in the school setting. Third, the TPB requires participants to report on their subjective norms (Ajzen, 1985), which are more salient and important when people are focused on building and maintaining social relationships (Deutsch & Gerard, 1955). As described earlier, when people encounter new and novel situations, they rely on descriptive norms. This would be expected in the case of younger adolescents and those entering new social environments. As such, not only did this study target older adolescents, but it was also administered at the end of the school year, when descriptive norms would be expected to

have less importance.

3.1 Participants

A total of 162 adolescents (80 girls, 80 boys, and 2 unknown) participated in this study. The convenience sample of participants was drawn from two separate school districts: The Saskatoon Catholic School District in Saskatchewan and The Central Okanagan School District in Kelowna, British Columbia. Almost an equal number of participants were obtained from the two school districts (refer to Table 3-1 for demographic information). The Saskatoon participants ($M = 17.1$, $SD = 1.3$) were found to be significantly older than Kelowna participants ($M = 16.2$, $SD = 1.2$), $t(157) = 4.36$, $p < .001$. The mean difference of a year is supported by the demographics in Table 3-1 that indicate the Kelowna sample had more grade 10 students and fewer grade 11 students than the Saskatoon sample.

Table 3-1. Number of Participants by Region, Sex, and Grade.

		Saskatoon, SK	Kelowna, BC	Total
Sex	Girls	38	42	80
	Boys	46	34	80
	Total	84	76	160
Grade	10	10	43	53
	11	47	11	58
	12	28	22	50
	Total	85	76	161

3.2 Materials

The purpose of the final questionnaire (see Appendix D) was to gather information on the following: attitudes towards aggression, subjective norms,

behavioural intentions, perceived behavioural control, perceived self-efficacy, actual behaviour, and demographic information.

In the first section of the questionnaire, participants were given the 36-item instrument developed by Little, Jones et al. (2003). This instrument assesses participants' engagement in aggressive behaviour while differentiating the underlying forms and functions of aggression. The instrument is designed to control for aggression forms and provide a nonconfounded measure of participants' use of instrumental and reactive aggression. The instrument contains six subscales. Participants respond to each question with a 4-point scale from *not at all true* to *completely true*. The authors report subscale internal consistencies ranging from .62 to .84. This instrument was included in this study, because it is the only known instrument to assess the functions of aggression while statistically controlling for the forms of aggression.

The second section assesses attitudes towards aggression. The items in this section were designed according to the recommendations of Ajzen (2002b). First belief-based attitudinal measures were used. Participants were given a description of an aggressive behaviour (e.g., If I were to ignore or tell my friends to ignore someone who had hurt me, I would...) followed by four possible outcomes. The specific outcomes were selected from the results of the elicitation study. On a 7-point, Likert scale from 1 (*extremely unlikely*) to 7 (*extremely likely*), participants were asked to indicate the likelihood of each outcome occurring. In addition to assessing the perceived likelihood of specific outcomes occurring, it is also important to assess whether such outcomes are perceived to be good or bad (Ajzen & Fishbein, 1980). Therefore, participants evaluated the outcome on a scale from 1 (*extremely bad*) to 7 (*extremely good*).

Participants were asked about three behaviours (i.e., ignoring or telling their friend to ignore someone, physically hurting someone, saying mean thing or threatening someone), which were presented in both an instrumental (e.g., someone who had not hurt me) and a reactive (e.g., someone who had hurt me) context. Therefore, participants were asked about six behaviours in total.

Following the belief-based measures of attitudes, direct attitude measures were used. These measures utilize a series of semantic-differential scales in which only the endpoints are labelled (Osgood, Suci, & Tannenbaum, 1957). Participants were asked to judge the behaviour according to the adjective pairs provided. It is important to note that two types of adjective pairs have been identified (Ajzen & Driver, 1992). The first type is characterized as instrumental in that it assesses the value or reward of the behaviour (e.g., *harmful-beneficial*, *rewarding-punishing*). The second type represents more affective qualities (e.g., *pleasant-unpleasant*, *good-bad*). Three instrumental and two affective adjective pairs were used in the questionnaire. These scales were used to judge the same six aggressive behaviours described above.

The next section assessed participants' subjective norms towards the same aggressive behaviours. First participants were asked to indicate on a scale from 1 (*extremely unlikely*) to 7 (*extremely likely*) the degree to which certain people felt it was okay for them to engage in a specific behaviour. The referents used in these questions were those obtained from the elicitation study. Following each of the referent questions, participants were asked to indicate on the same scale how likely they would want to do what that specific person wanted in such a situation. At the end of each set of questions, participants were asked to identify on the same scale the likelihood that in general most

people important to them would think such behaviour was okay. Again they were also asked how motivated they would be to comply in such a situation. This question served as the direct measure of subjective norms.

Behavioural intentions were then assessed using a series of 6 questions. On a scale of 1 (*definitely will not*) to 7 (*definitely will*) participants were asked to indicate whether they would engage in each of the six aggressive behaviours in the next 30 days. These questions represent direct measures of behavioural intentions, as Ajzen (2002b) argues that is the only way they can be measured.

After completing the questions regarding behavioural intentions, participants were asked about their actual behaviour within the past 30 days. Specifically, participants were instructed to indicate the number of times they had engaged in each of the six aggressive behaviours.

Next participants were asked about their perceived self-efficacy for engaging in each of the six aggressive behaviours. Participants used a 7-point scale from 1 (*very unlikely*) to 7 (*very likely*) to indicate the likelihood that they would be able to get what they wanted by being aggressive (reflecting instrumental aggression) and be able to hurt someone if they themselves had been hurt (reflecting reactive aggression).

Participants were then asked a series of questions regarding perceptions of behavioural control over being aggressive. This section contained both belief-based and direct measures of behavioural control that were designed according to Ajzen's (2002b) guidelines. The belief-based measures contained two components. First, participants indicated on a scale from 1 (*extremely unlikely*) to 7 (*extremely likely*) how likely a specific circumstance (i.e., being provoked, being at school, and being with family)

might arise in the next 30 days. Second, participants used a scale from 1 (*much more difficult*) to 7 (*much easier*) to indicate how the occurrence of such a circumstance would impact their ability to engage in aggressive behaviour. The direct measures of PBC consisted of three questions regarding how easy it would be to behave aggressively, and how much control participants believed they would have over their aggressive behaviour. These questions all used a single 7-point scale, however, the endpoints were labelled differently (e.g., from *strongly disagree, very difficult, absolutely no control* to *strongly agree, very easy, complete control*, respectively). In the final section participants were asked to identify their grade, age, and sex.

3.3 Procedure

3.3.1 Questionnaire Administration

Because participants were obtained from two independent school districts two different procedures were required. The difference occurred with respect to consent procedures. In Saskatoon, a procedure identical to that used in the elicitation study was used. This involved identifying interested schools. In total, three high schools agreed to participate. When specific courses were identified for participation, information letters (see Appendix E) were mailed out to parents a minimum of two weeks prior to the administration date. These letters provided an outline of the study and what participation would involve. The letters also instructed parents to contact the researcher if they required any further information, and/or if they did not want their child to participate in the study.

Administration of the questionnaire took place during school hours and on school property. At the scheduled time of the administration the researcher entered the classroom and informed students of the study. Students were given the opportunity to

ask questions about the study. Only those students who consented to participate (see Appendix F) were given a questionnaire to complete. In Saskatoon the response rate for participation was 100%.

In Kelowna, the Central Okanagan School District required active parental consent. As such, prior to administering the questionnaire, the researcher entered participating classrooms to inform students of the study. All students were given an information sheet and parental consent form (see Appendix G) to take home, have their parents sign, and return to their teacher. The researcher also left extra copies of the information letters and consent forms with each teacher to give to students who were absent or lost the original forms. Again the study administration took place at school. Only students who wanted to participate and had parental consent, were allowed to participate. In Kelowna the response rate for participation was estimated to be 40%.

In both regions, and as described in the elicitation study procedure, participants were provided with a definition of aggression prior to beginning the questionnaire. Participants were told that aggressive behaviour is any behaviour (e.g., hitting, kicking, threatening, or saying mean things) intended to hurt another person either physically, emotionally, or socially. As before, participants were also instructed that such behaviour did not include play fighting or sports related aggression. The questionnaire required approximately 25 minutes to complete.

3.3.2 Data Analysis

All data were entered into SPSS 13.0. All data analyses were done using SPSS 13.0 with the exception of PATH analyses which were conducted using AMOS 4.01 (Arbuckle, 1999). Significance was judged using a criteria of $\alpha = .05$.

The first step involved using the measurement system developed by Little, Jones

et al. (2003) to confirm the presence and distinction of the two functions of aggression. The 36-item measure contains six subscales, each with six items. Four of the subscales used items that simultaneously inquire about a specific form and function of aggression. For example, the item *to get what I want, I often say mean things to others*, reflects instrumental overt aggression. The four subscales are: instrumental overt, instrumental relational, reactive overt, and reactive relational. The two remaining subscales serve as pure measures of either overt or relational aggression. For example, the item *I'm the kind of person who often fights with others*, serves as a pure measure of overt aggression. Following the procedures of Little, Brauner et al. (2003) an index of reactive and instrumental aggression were calculated. First, subscale scores were calculated by summing the corresponding items. Second, residuals from regressing each of the four mixed subscales (assessing both form and function) on the pure subscale (containing only the form information) were obtained. For example, the reactive-overt scale was regressed on the pure overt scale. The result was four new residual variables: instrumental-overt, instrumental-relational, reactive-overt, and reactive-relational. These residual variables provide a measure of the specific functions of aggression after controlling for the forms of aggression. An overall index of instrumental aggression was finally obtained by averaging the two instrumental variables, and an index of reactive aggression was obtained by averaging the two reactive variables.

The next step was to assess the intentional nature of aggression. However, before the intentionality of aggression could be assessed using the TPB, indices for attitudes, social norms, perceived behavioural control, self-efficacy, behavioural intentions, and actual behaviour were created, as these constructs required multiple

items to be aggregated. For example, in order to compile the belief-based attitude indices, outcome expectancies for each of the three target behaviours (i.e., ignoring or telling friends to ignore someone, saying mean things, and physically hurting someone) were multiplied by their corresponding outcome evaluations (i.e., how good or bad the outcome would be). The resulting three items were then summed to create a single attitude index. This procedure was done separately for both instrumental and reactive contexts, creating an attitude index for each function.

Prior to summing each indices' component items, inter-item analyses were conducted to assess if the individual items were measures of a single underlying construct. First, inter-item correlations were assessed. Second, internal consistency was evaluated using Cronbach's alpha. Third, principal components factor analysis with varimax rotation was performed and the resulting factor loadings' matrix was assessed for simple structure. Eigenvalues were also assessed to ensure the identified factor accounted for an acceptable amount of variance. Finally, Kaiser's measure of sampling adequacy (KMO) was assessed to determine the factorability of the data.

After the indices were compiled, path analyses of the modified and standard TPB models for both reactive and instrumental aggression were conducted using AMOS 4.01. Standardized path coefficients were assessed to determine the influence that variables had in the model.

In order to test some of the study's hypotheses as well as additional exploratory questions, additional analyses mostly in the form of *t*-tests were also conducted.

CHAPTER 4 RESULTS

4.1 Verifying the Presence of Two Distinct Functions of Aggression

Results of the analyses on the instrumental and reactive aggression indices were similar to that of Little, Brauner et al. (2003), and Little, Jones et al. (2003). The two indices were not found to correlate, $r = .152, p = .053$. It should be noted that although not significant this weak correlation did approach significance. In their study of 1753 German adolescents, Little, Jones et al. (2003) reported a weak disattenuated correlation ($r = -.10, p < .05$). Their results indicated that the low correlation is most likely due to the variables not being correlated as opposed to measurement error. The results of this study provide further evidence that when controlling for form, the functions of aggression are at most trivially correlated. Looking at reactive aggression the mean ranged between -4.51 and 5.59, and boys ($M = .18, SD = 1.95$) and girls ($M = -.16, SD = 1.70$) did not differ, $t(158) = 1.167, p = .245$. As for instrumental aggression the mean ranged between -3.51 and 4.34 and there was also no difference found between boys ($M = -.03, SD = 1.26$) and girls ($M = .03, SD = 1.27$), $t(158) = -.298, p = .766$. The results support collapsing across sex for further examination of the functions of aggression (Hypothesis 7).

Further analyses were conducted to explore for sex differences on the measure's six subscales. Table 4-1 presents the means, standard deviations, and results of the independent t -tests. Due to conducting multiple analyses, the alpha level was corrected using the multistage Bonferroni procedure (Howell, 2002). After correcting the

significance level, there was only one sex difference on the reactive overt scale indicating that boys report engaging in more overt-reactive aggression. Overall, the results of this analysis indicate that with the exception of overt-reactive aggression, boys and girls do not differ in their engagement of aggressive behaviour.

4.2 Compiling The Indices

As mentioned earlier indices for attitudes, social norms, perceived behavioural control (PBC), self-efficacy, behavioural intentions, and actual behaviour had to be created by aggregating multiple items.

Table 4-1. Mean Scores on Little, Henrich, and Hawleys (2003) Aggression Instrument by Participant Sex

Subscale	Sex	Mean (<i>SD</i>)	<i>t</i>	<i>df</i>	<i>p</i>
Instrumental-overt	Boy	7.90 (2.85)	.749	156	.455
	Girl	7.58 (2.51)			
Instrumental-relational	Boy	7.45 (1.83)	.504	158	.615
	Girl	7.31 (1.62)			
Reactive-overt	Boy	12.76 (4.07)	3.082	157	.002*
	Girl	10.91 (3.48)			
Reactive-relational	Boy	9.79 (2.69)	-.825	158	.411
	Girl	10.15 (2.87)			
Pure Overt	Boy	9.56 (2.85)	2.216	157	.028
	Girl	8.61 (2.59)			
Pure Relational	Boy	9.05 (2.72)	-.233	157	.816
	Girl	9.15 (2.66)			

* $p < .008$ significant after adjusting the significance level ($\alpha = .05$) with the multistage Bonferroni procedure.

4.2.1 Attitudes

Bivariate correlations for each of the three items compiling an index were examined to assess if each item was measuring an underlying construct. Looking first at the three belief-based items for reactive aggression (refer to Table 4-2 for the intercorrelations) all of the items were moderate to highly correlated with values ranging from .290 to .729. Internal consistency was then assessed using Cronbach's alpha. The alpha obtained for the three reactive items was .683. Please note that a value of .70 is often used as the acceptable value for retaining items in an adequate scale (Garson, 2006). However, consistency of attitude measures is often low and values as low as .60 are considered to be acceptable for exploratory studies (Garson, 2006; Simon & Foland, 2005). It should also be noted that Ajzen (2002b) stated it is not required for belief-based measures of attitudes, subjective norms, or PBC to be internally consistent, because it is possible that people will believe behaviour is both positive and negative. Therefore, it is through their aggregation that they provide a single indicator of the construct. Finally, a principal components factor analysis with varimax rotation was performed on the three items to confirm the presence of a single underlying construct. Results indicated the presence of a single factor (eigenvalue = 1.80) with each item having a high factor loading ranging from .703 to .867 (refer to Table 4-3). The KMO statistic was found to equal .577. Tabachnick and Fidell (2001) state that this measure of sampling adequacy should be greater than .60 in order to indicate that the data should factor well. However, for the purpose of this study, the principal components factor analysis is being used to confirm the assumption that the individual items are measures of the same underlying construct. As such, a low KMO value would provide a further indication that independent factors are not present.

Table 4-2. Intercorrelations Between Belief-Based Measures of Attitudes

Measure	Say (Reactive)	Physical (Reactive)	Ignore (Instrumental)	Say (Instrumental)	Physical (Instrumental)
Ignore (Reactive)	.455*	.228**	.509**	.372**	.263**
Say (Reactive)		.504**	.492**	.540**	.352**
Physical (Reactive)			.284**	.357**	.480**
Ignore (Instrumental)				.706**	.331**
Say (Instrumental)					.489**

* $p < .05$. ** $p < .001$.

Table 4-3. Factor Loading Results From The Principal Components Factor Analyses of the Items Compiling Each Index According to Function and Type of Measure

Index	Type of measure	Function	Factor Loadings		
			Say mean things	Physical	Ignore
Attitude	Belief-Based	Reactive ^b	.867	.745	.703
		Instrumental ^b	.909	.701	.846
	Direct	Reactive ^b	.865	.855	.673
		Instrumental ^b	.892	.856	.836
Subjective Norms	Belief-Based	Reactive ^b	.915	.867	.632
		Instrumental ^b	.858	.925	.818
Perceived Self-Efficacy ^a	Direct	Reactive ^b	.840	.826	.572
		Instrumental ^b	.780	.862	.831
Behavioural Intentions ^a	Direct	Reactive ^b	.862	.815	.680
		Instrumental ^b	.907	.809	.805
Behaviour ^a	Direct	Reactive ^b	.881	.835	.453
		Instrumental ^b	.898	.727	.732
Behaviour ^a	Direct	Reactive ^b	.815	.854	.631
		Instrumental ^b	.863	.833	.631

^aindex only contained direct measures.

^ba separate principal component factor analysis was conducted for each function.

As for the instrumental belief-based items, the correlations were found to be stronger (refer to Table 4-2). Again, all correlations were found to be significant, $p < .001$. Internal consistency was found to be higher, $\alpha = .750$. Looking at the results from a principal components factor analysis, the items loaded highly on a single factor (eigenvalue = 2.30; refer to Table 4-3). The KMO statistic was found to be .592.

In order to compile the attitude index of the direct measures (i.e., semantic differential scales), two items from each question had to be reverse coded to maintain

the direction of the scale. First, correlational analysis of the reactive aggression items was examined. Results, indicated strong correlations, which were all significant, $p < .001$ (refer to Table 4-4). The items were found to be internally consistent, $\alpha = .722$. Principal component factor analysis identified only one factor (eigenvalue = 1.93) upon which the items loaded highly (refer to Table 4-3). The KMO was found to be .621. As for the instrumental direct measures, the items were found to correlate highly, with the lowest correlation being between ignore and physical, $r = .546$, (refer to Table 4-4). The items were also found to have high internal consistency, $\alpha = .856$. Principal components factor analysis demonstrated that the three items all loaded highly on a single factor (eigenvalue = 2.23) with loadings ranging from .836 to .892 (refer to Table 4-3). Sampling adequacy was found to be high, KMO = .706.

Table 4-4. Intercorrelations Between Direct Measures of Attitudes

Measure	Say (Reactive)	Physical (Reactive)	Ignore (Instrumental)	Say (Instrumental)	Physical (Instrumental)
Ignore (Reactive)	.376**	.359**	.371**	.307**	.175*
Say (Reactive)		.646**	.253**	.369**	.328**
Physical (Reactive)			.252**	.342**	.430**
Ignore (Instrumental)				.629**	.546**
Say (Instrumental)					.666**

* $p < .05$. ** $p < .001$.

An additional principal components factor analysis with varimax rotation was

conducted in order to assess the divergent validity of the measurement items. This involved entering all of the individual items into a single analysis to assess if they would produce four factors according to the type of measure and function. Sampling adequacy was found to be good, $KMO = .746$. Results did not support the presence of four clearly defined factors; however, when a two factor solution was forced the resulting factors clearly formed according to the measurement type. Loadings on factor one (eigenvalue = 4.07) for the direct measure items ranged from .554 to .770; whereas, loadings on factor two (eigenvalue = 2.17) for the belief-based measures ranged from .607 to .833. As a result of the satisfactory associations between each item within their respective category (e.g., belief-based, reactive) aggregate attitude indices were compiled by summing the individual items. Table 4-5 provides the means and standard deviations of the scores obtained on each of the indices.

The correlation between the belief-based measure and the direct measure was assessed. Ajzen (2002b) argues that both types of measures serve as indicators of the underlying construct. It is important to note that this does not imply that attitude beliefs operate as determinants of direct measures. Instead, the beliefs are the determinants of the attitude, which can be measured directly. This relation between beliefs, direct measures, and the underlying construct is similar for subjective norms, and perceived behavioural control. Given this relation, it is expected that the two types of measures should be correlated. Results found the belief-based and direct measure of attitudes toward reactive aggression to moderately correlate, $r = .430, p < .001$. The two measures of attitudes toward instrumental aggression were also found to correlate significantly, but it was a much weaker association, $r = .261, p < .001$.

Table 4-5. Mean and Standard Deviation Values of The Computed Indices ($N = 162$)

Index	Aggressive Context	Mean	Standard Deviation	Possible Range
Attitudes (Belief-Based)	Reactive	122.81	62.70	12 to 588
	Instrumental	86.22	50.13	
Attitudes (Direct)	Reactive	49.72	19.92	15 to 105
	Instrumental	27.31	13.99	
Subjective Norms (Belief-Based)	Reactive	113.66	61.30	12 to 588
	Instrumental	72.36	43.03	
Subjective Norms (Direct)	Reactive	31.56	21.00	4 to 147
	Instrumental	19.50	13.91	
Perceived Self-Efficacy	Reactive	10.68	4.93	3 to 21
	Instrumental	7.41	4.41	
Perceived Behavioural Control (Belief-Based)		50.17	29.34	3 to 147
Perceived Behavioural Control (Direct)		13.43	4.06	3 to 21
Behavioural Intentions	Reactive	8.83	4.23	3 to 21
	Instrumental	5.70	3.56	
Actual Behaviour	Reactive	6.64	7.38	0 to 30
	Instrumental	4.38	6.80	

4.2.2 Subjective Norms

First, compiling the belief-based measures began by multiplying the likelihood of each referent approving of the behaviour with the participant's motivation to comply with that referent in the given situation. The resulting variables were then summed together within each target behaviour (e.g., ignore reactive). Subjective norms indices were then compiled using the same procedure used for compiling attitudes.

Beginning with belief-based measures of reactive subjective norms, the three had

moderate to strong correlations (refer to Table 4-6 for subjective-norm items' inter correlations). Cronbach's alpha was found to be acceptable at .680. Principal components factor analysis indicated the presence of a single factor (eigenvalue = 1.988) upon which the items loaded highly (refer to Table 4-3). The KMO was found to be .567. The instrumental items all had strong correlations ranging from .440 to .771. Internal consistency was found to be high at a value of .807. Principal components factor analysis results produced a single factor (eigenvalue = 2.26) with high loadings (refer to Table 4-3). The KMO was found to be .655.

Table 4-6. Intercorrelations Between Belief-Based Measures of Subjective Norms

Measure	Say (Reactive)	Physical (Reactive)	Ignore (Instrumental)	Say (Instrumental)	Physical (Instrumental)
Ignore (Reactive)	.413**	.284**	.284**	.460**	.335**
Say (Reactive)		.740**	.376**	.536**	.525**
Physical (Reactive)			.491**	.442**	.603**
Ignore (Instrumental)				.493**	.658**
Say (Instrumental)					.734**

* $p < .05$. ** $p < .001$.

With respect to the direct measures, reactive subjective norm items were moderate to highly correlated (refer to Table 4-7). Internal consistency among items in this index was found to be low, $\alpha = .611$. Principal components factor analysis confirmed the presence of a single underlying factor (eigenvalue = 1.72, KMO = .577; refer to Table 4-3). Conversely, instrumental items were all highly correlated and had a

high internal consistency, $\alpha = .749$. These items also loaded highly onto a single factor (eigenvalue = 2.04) as evidenced by a principle components factor analysis (refer to Table 4-3). The KMO was found to equal .678.

Table 4-7. Intercorrelations Between Direct Measures of Subjective Norms

Measure	Say (Reactive)	Physical (Reactive)	Ignore (Instrumental)	Say (Instrumental)	Physical (Instrumental)
Ignore (Reactive)	.262**	.231**	.323**	.259**	.251**
Say (Reactive)		.542**	.246**	.209**	.397**
Physical (Reactive)			.412**	.164*	.355**
Ignore (Instrumental)				.447**	.600**
Say (Instrumental)					.512**

* $p < .05$. ** $p < .001$.

As with the attitude measures all of the subjective norm measures were entered into a single principal components factor analysis with varimax rotation to assess divergent validity. Sampling adequacy was found to be high, KMO = .740. Similar to the attitude measures, a solution containing four factors according to type of measure and function of aggression was not obtained. However, unlike the attitude measures, forcing a two-factor solution did not produce simple structure by identifying two factors according to measurement type. Such a finding may be expected as Ajzen (2002b) stated that belief-based and direct measures should be correlated. Because many of the items are correlated they are likely measuring the same underlying constructs.

Aggregate subjective norm indices were compiled by summing the items.

The relation between the belief-based and direct indices of subjective norms was assessed. Both measures of reactive subjective norms were highly correlated, $r = .723$, $p < .001$. The two subjective norm measures for instrumental aggression were also highly correlated, $r = .795$, $p < .001$.

4.2.3 Perceived Self-Efficacy

Two self-efficacy indices were created by summing the three reactive items and the three instrumental items. In both the reactive and instrumental contexts individual items correlated highly with one another (refer to Table 4-8). The three reactive items were also found to have an α of .694. Principal components factor analysis of these items yielded a single factor (eigenvalue = 1.87, KMO = .613; refer to Table 4-3). Looking at the instrumental items, the items were found to be internally consistent, $\alpha = .784$. Principal components factor analysis of the instrumental items also produced a single factor (eigenvalue = 2.13) upon which the three items loaded highly (refer to Table 4-3). For this analysis the KMO was found to be .638. These results supported the summation of the items into their respective reactive and instrumental indices.

Table 4-8. Intercorrelations Between Measures of Perceived Self-Efficacy

Measure	Say (Reactive)	Physical (Reactive)	Ignore (Instrumental)	Say (Instrumental)	Physical (Instrumental)
Ignore (Reactive)	.401**	.302**	.496**	.419**	.221**
Say (Reactive)		.585**	.443**	.540**	.564**
Physical (Reactive)			.251**	.415*	.572**
Ignore (Instrumental)				.628**	.415**
Say (Instrumental)					.636**

* $p < .05$. ** $p < .001$.

4.2.4 Perceived Behavioural Control

The likelihood of each of the particular circumstances occurring was multiplied by the degree of difficulty that such a circumstance would have on the performance of aggression. Correlational analyses of the belief-based measures revealed being at school to be moderately correlated with both being provoked and being with family, $r = .311$, $p < .001$ and $r = .281$, $p < .001$, respectively. Additionally, being with family and being provoked were also found to be moderately correlated, $r = .348$, $p < .001$. Additional factor analysis revealed that all three items loaded highly onto a single factor (eigenvalue = 1.67; refer to Table 4-9). The KMO was found to be .628. Surprisingly, given the moderate correlations and high factor loadings, internal consistency was found to be low, $\alpha = .575$.

Table 4-9. Principal Components Factor Analysis Results of the Items Compiling the Indices of Perceived Behavioural Control

Type of Measure	Item	Factor Loadings	
		Factor One	Factor Two
Belief-Based ^a	Being at school	.708	-
	Being provoked	.761	-
	Being with family	.739	-
Direct ^a	Ease of being aggressive	.870	-
	Ease of hurting someone	.873	-
	Degree of control	-	.995

^adenotes a separate principal components factor analysis.

Analysis of the association among the direct PBC measures yielded interesting results. First, inter-item correlations revealed that the ease of being aggressive and ease of hurting someone were highly correlated, $r = .521, p < .001$. However, the third item, degree of control over being aggressive, was not correlated with either ease of being aggressive or ease of hurting someone, $r = .065, p = .420$ and $r = -.065, p = .421$, respectively. Principal components factor analysis indicated the presence of two factors with both ease of being aggressive and ease of hurting someone loading on factor one (eigenvalue = 1.52), while degree of control loaded on a second factor (eigenvalue = 1.01; refer to Table 4-9). The measure of sampling adequacy was found to be low, $KMO = .484$. Upon closer examination of the actual items, ease of being aggressive and ease of hurting someone are reflective of self-efficacy, that is the perceived capability to perform a behaviour (Bandura, 1997). This perception was confirmed by correlational results as ease of being aggressive significantly correlated with both reactive ($r = .496$) and instrumental aggression ($r = .472$) self-efficacy, while ease of hurting someone also

correlated with both reactive ($r = .422$) and instrumental ($r = .428$) self-efficacy. Conversely, degree of control addresses the controllability of aggressive behaviour. This item was not found to correlate with either reactive or instrumental self-efficacy, $r = .033, p = .680$ and $r = .034, p = .675$. As mentioned earlier, Ajzen (2002a) stated that self-efficacy is a component of PBC. Ajzen (2002b) also recommended that PBC measures should contain both self-efficacy items and controllability items. Results from the factor analysis, support the presence of two underlying constructs. However, the author also argued that the set of items used must maintain a high degree of internal consistency, which these three items do not, $\alpha = .426$. Because an aim of the study is to compare the influence of self-efficacy to that of PBC on aggressive behaviour, the single controllability item was retained as the direct measure of PBC. Looking at the association between the belief-based index of PBC and the single item direct measure, a high correlation was found, $r = .531, p < .001$.

4.2.5 Behavioural Intentions

With respect to intentions to engage in reactive aggression, say mean things was found to correlate weakly with ignore ($r = .246, p < .001$) and highly physical ($r = .586, p < .001$); however, physical and ignore did not correlate, $r = .113, p = .155$. Internal consistency was found to be low, $\alpha = .598$. Principal components factor analysis produced a one factor solution (eigenvalue 1.67), with say mean things and physical loading high, while ignore had a low loading (refer to Table 4-3). The KMO was found to be .519. Results from the correlation and factor analysis indicate that the ignore item, was the least reflective of the construct.

Examining the instrumental items, say mean things correlated highly with both ignore ($r = .539, p < .001$) and physical ($r = .532, p < .001$); whereas ignore and

physical had a small correlation, $r = .231, p < .001$. Internal consistency among the three items was found to be .685. Results from the principal components factor analysis indicated a single underlying factor (eigenvalue = 1.87; Refer to Table 4-3). KMO was found to be .535. The reactive and instrumental items were summed to create the corresponding indices.

4.2.6 Actual Behaviour

The final two indices that were created consisted of the items asking participants about their engagement in the six behaviours over the previous 30 days. For the reactive items, say mean things and physical correlated highly ($r = .566, p < .001$), while ignore correlated moderately with both say mean things and physical, $r = .258, p < .001$, and $r = .341, p < .001$, respectively. Cronbach's alpha was found to be .635. The three items were found through principal components factor analysis to load on a single factor (eigenvalue = 1.79; refer to Table 4-3). KMO was found to be .594.

Correlation analysis of the instrumental items found only say mean things and physical to be weakly correlated, $r = .166, p < .05$. Ignore did not correlate with either say mean things ($r = .066, p = .412$) or physical ($r = .096, p = .229$). Internal consistency was also found to be acceptable, $\alpha = .683$. Results from a principal components factor analysis identified a single factor (eigenvalue = 1.22; refer to Table 4-3). KMO was found to be .534.

Based on the above results, the individual items were summed to create the respective reactive and instrumental indices. Overall, participants reported engaging in an average of 6.64 ($SD = 7.38$) reactive acts of aggression and 4.38 ($SD = 6.80$) acts of instrumental aggression in the previous 30 days. This differences was found to be significant, $t(159) = 5.443, p < .001$.

4.3 Examining The Intentionality of Aggression

Prior to conducting PATH analysis of the TPB, both the reactive and instrumental aggression indices were assessed for sex differences (Hypothesis 7). In terms of how many times reactive aggression was performed in the previous 30 days, boys ($M = 7.33, SD = 7.84$) did not differ from girls ($M = 5.82, SD = 6.77$), $t(156) = 1.290, p = .199$. Similarly, there was no difference between boys ($M = 5.29, SD = 7.56$) and girls ($M = 3.46, SD = 5.91$) in the performance of instrumental aggression, $t(156) = 1.689, p = .093$. Based on these results, as well as those reported earlier with respect to finding no sex differences on the indices of reactive and instrumental aggression produced from the Little, Jones et al., (2003) instrument, it was deemed acceptable to collapse across sex to examine the intentionality of aggression. It is also important to note that prior to conducting path analyses the assumptions of normality and linearity were assessed and met satisfactorily.

Using AMOS (Arbuckle, 1999), path analysis was conducted to examine the study's main hypotheses (i.e., Hypotheses 1, 1a-d, 2, 3, and 4). In particular, these hypotheses involved the assessment of both the modified and original model of the TPB in both reactive and instrumental contexts. Figure 4-1 illustrates the models' hypotheses. First, behavioural intentions directly affect aggressive behaviour. Subsequently, behavioural intentions are directly predicted by attitudes, subjective norms, and PBC. These determinants are also shown to covary with one another. The figure also depicts a direct path between PBC and behaviour, which is argued to be significant when participants do not believe the behaviour is under their volitional control. Figure 4-3 represents a similar model, but in an instrumental context. Figures 2 and 4 are similar to figures 1 and 3, respectively; the only exception is that self-efficacy

has been substituted for PBC. All variables are represented with rectangles as they reflect measured/observed variables. Maximum likelihood estimation was used to estimate all models. Simply stated this estimation procedure identifies estimates that have the greatest probability of reproducing the observed data. Post hoc model modifications were not performed. Chou and Bentler (1990) state that all model modifications should be based on theory. Because this study involved a well established theoretical model (i.e., the TPB) structural modifications were deemed unnecessary. Finally, it is important to note that all path coefficients are standardized coefficients (i.e., beta weights), which range in value between -1 and 1.

4.3.1 Reactive Aggression

Path analysis was first used to examine the TPB with respect to reactive aggression (see Figure 4-1). Results found the model to fit well, $\chi^2 (2, N = 162) = 2.183$, $p = .336$; CFI = 1.00; NFI = .999. Overall, the model accounted for 31% of the variance in reactive aggression. Importantly, behavioural intentions were found to be significant determinants of aggression. Further, attitudes, subjective norms, and PBC were all found to be significant determinants of intentions. It should also be noted that the direct path between PBC was not significant, indicating that reactive aggression is under volitional control.

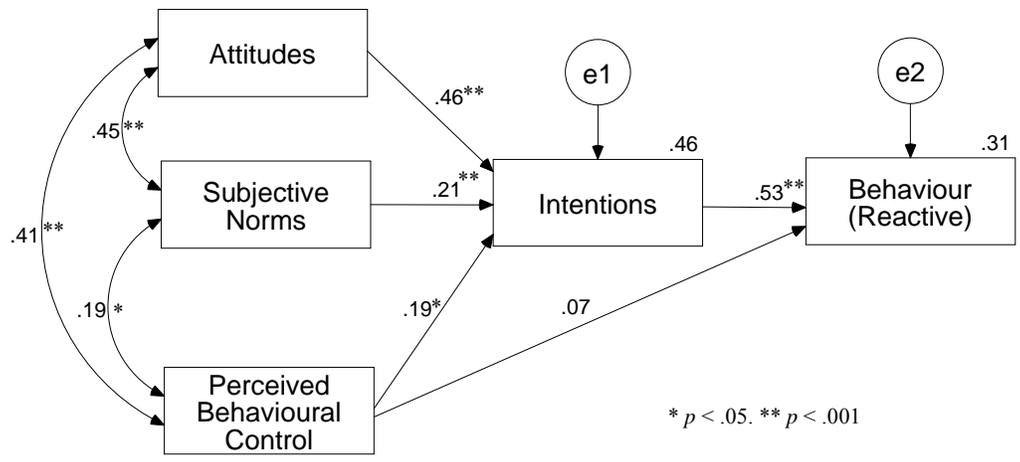


Figure 4-1. Path analytic model of The Theory of Planned Behaviour in a reactive aggression context

In the following analysis, PBC was substituted with self-efficacy. The resulting model (see Figure 4-2) was also found to fit the data well, $\chi^2 (2, N = 162) = 2.220, p = .330$; CFI = 1.00; NFI = .998. Like the model above, this model also accounted for 31% of the variance in reactive aggression. Again, behavioural intentions were found to be significant determinants of behaviour. Attitudes, subjective norms, and self-efficacy were also found to be significant determinants of intentions. Interestingly, inclusion of self-efficacy did not appear to have an impact on the overall model as compared to when PBC was used. Examination of the path coefficients revealed that self-efficacy had a larger influence on intentions, while attitudes and subjective norms had a reduced influence; however, these differences are not likely to be significant as the overall variance accounted for in intentions and behaviour is unchanged.

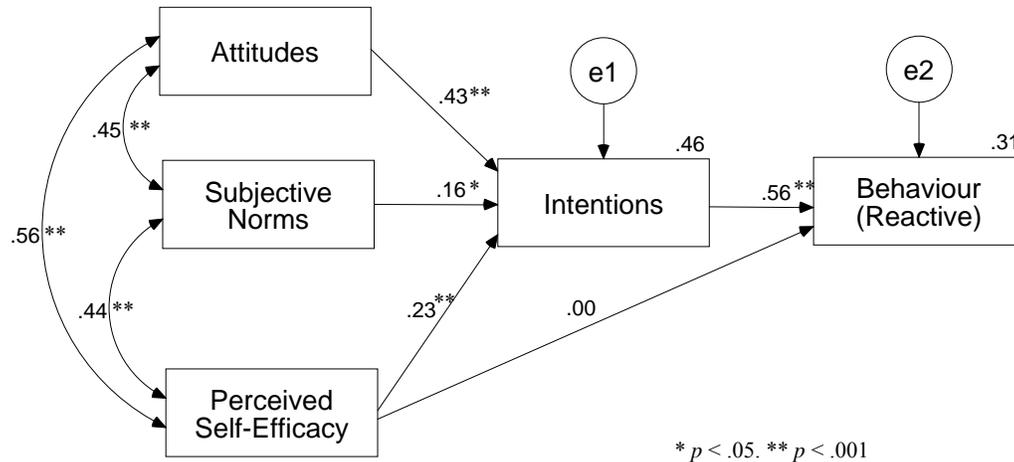


Figure 4-2. Path analytic model of The Theory of Planned Behaviour in a reactive aggression context, with perceived self-efficacy substituted for perceived behavioural control.

4.3.2 Instrumental Aggression

Path analysis of the TPB with respect to instrumental aggression (see Figure 4-3), indicated the theory fit the data well, $\chi^2(2, N = 162) = 0.423, p = .809$; CFI = 1.00; NFI = 1.00. Overall, this model accounted for 43% of the variance in instrumental aggression. The model also demonstrated that behavioural intentions serve as a significant determinant of aggressive behaviour. Attitude, subjective norms, and PBC were also found to have significant influences on behavioural intentions, with attitudes appearing to have the most influence on intentions.

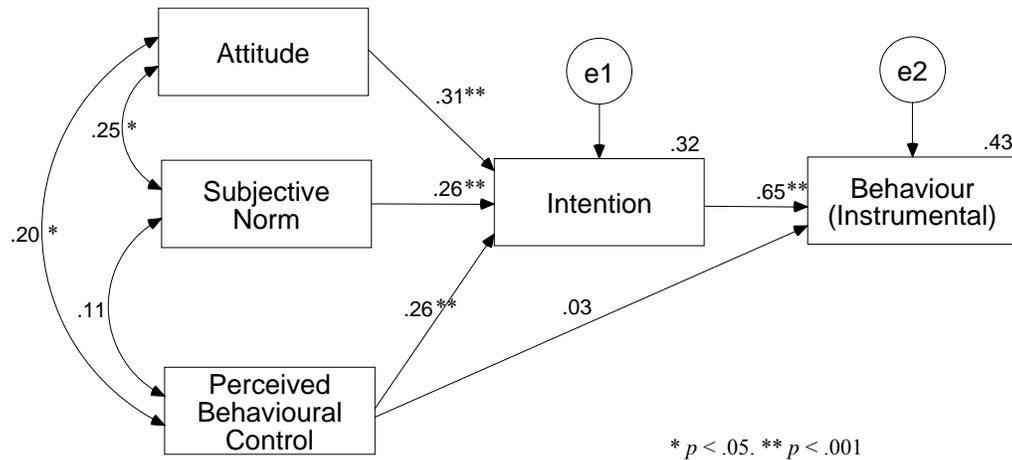


Figure 4-3. Path analytic model of The Theory of Planned Behaviour in an instrumental aggression context

Unlike with reactive aggression, substituting self-efficacy for PBC appears to have more of an impact on instrumental aggression. Overall, the model (see Figure 4-4) was found to provide a good fit to the data, $\chi^2 (2, N = 162) = .379, p = .827$; CFI = 1.00; NFI = 1.00. This model was found to account for 44% of the variance in aggressive behaviour. Similar to the previous models behavioural intentions was found to be a significant determinant of aggressive behaviour. Interestingly, while attitudes and social norms were still found to determine intentions, self-efficacy appeared to have the largest influence on intentions. In the previous model, attitudes, subjective norms, and PBC had relatively similar influences on behavioural intentions. However, in this model self-efficacy played a much larger role and ultimately 43% of the variance in intentions was accounted for; whereas, in the previous reactive model 31% of the variance in

intentions was accounted for.

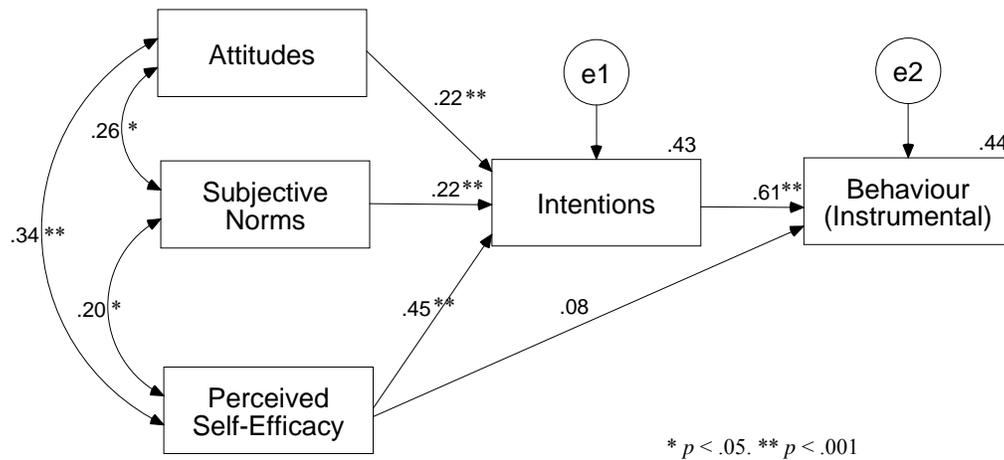


Figure 4-4. Path analytic model of The Theory of Planned Behaviour in an instrumental context, with perceived self-efficacy substituted for perceived behavioural control

4.4 Differences in Subjective Norms, Attitudes, and Self-Efficacy as a Function of Aggression

It was hypothesized that adolescents would identify more social pressure to behave aggressively in situations of provocation than in instrumental situations. A paired sample *t*-test was conducted comparing subjective norms between the two functions of aggression (Hypothesis 5). Results demonstrated that subjective norms were higher for reactive contexts ($M = 31.56$, $SD = 21.00$) than instrumental contexts ($M = 19.50$, $SD = 13.91$), $t(159) = 7.988$, $p < .001$. Based on these results, adolescents report stronger subjective norms to respond aggressively in situations of provocation.

It was also hypothesized that because instrumental aggression involves a focus on future rewards, attitudes were expected to be more positive in instrumental contexts

compared to reactive contexts (Hypothesis 6). Results from a paired sample *t*-test revealed the opposite. Adolescents were found to have more positive attitudes towards reactive aggression ($M = 49.72$, $SD = 19.92$) than instrumental aggression ($M = 27.31$, $SD = 13.99$), $t(159) = 15.47$, $p < .001$. These results suggest adolescents expect positive results when they retaliate aggressively against someone who perpetrated aggression towards them.

Although no specific hypothesis had been made, another paired sample *t*-test was conducted to see if there was a difference in self-efficacy with respect to the different contexts. Based on the analysis, adolescents perceived themselves to be more capable of behaving aggressive in reactive contexts ($M = 10.68$, $SD = 4.93$) than in instrumental contexts, $t(159) = 10.612$, $p < .001$. This result may be tied to the fact that overall the sample reported engaging in more acts of reactive aggression than instrumental aggression. If those acts were successful their self-efficacy towards such acts would be bolstered.

4.5 Exploratory Analysis of Sex Differences

Multiple independent *t*-tests were conducted to assess for sex differences in the indices used in the models. Because of the multiple comparisons a multistage Bonferroni procedure was used to obtain a new significance level, $\alpha = .006$. Table 4-10 provides the means, standard deviations, and results of the comparisons. Against the corrected alpha, only two comparisons were found to be significant. In detail, boys reported a high degree of self-efficacy towards instrumental aggression than girls. Boys also reported having more control over their aggressive behaviour than girls.

Table 4-10. Comparing Boys' and Girls' Mean Scores on The Models' Indices

Subscale	Sex	Mean (<i>SD</i>)	<i>t</i>	<i>df</i>	<i>P</i>
Intentions (Reactive)	Boy	9.70 (4.40)	2.603	157	.010
	Girl	7.97 (3.94)			
Intentions (Instrumental)	Boy	6.25 (3.85)	2.00	157	.047
	Girl	5.13 (3.20)			
Attitudes (Reactive) ^a	Boy	53.45 (20.45)	2.273	154	.024
	Girl	46.28 (18.97)			
Attitudes (Instrumental) ^a	Boy	30.18 (14.79)	2.701	154	.008
	Girl	24.29 (12.37)			
Subjective Norms (reactive) ^a	Boy	34.76 (23.81)	1.829	156	.069
	Girl	28.67 (17.57)			
Subjective Norms (Instrumental) ^a	Boy	21.05 (15.17)	1.249	156	.213
	Girl	18.29 (12.46)			
Self-Efficacy (Reactive)	Boy	11.63 (4.98)	2.360	154	.020
	Girl	9.79 (4.75)			
Self-Efficacy (Instrumental)	Boy	8.76 (4.78)	3.908	154	.000*
	Girl	6.12 (3.56)			
Perceived Behavioural Control ^a	Boy	14.45 (3.93)	3.514	154	.001*
	Girl	12.26 (3.83)			

^adirect measure.

* $p < .006$ significant after adjusting the significance level ($\alpha = .05$) with the multistage Bonferroni procedure.

4.6 Analysis of Demographic Differences

Because the study utilized a sample from two different regions (i.e., Saskatchewan and British Columbia) differences between the regions was assessed on each of the indices used in the Path analyses. Again the significance level was corrected

for using the multistage Bonferroni procedure. Table 4-11 provides the means, standard deviations, and results of the comparisons. From the table it can be seen that there were no difference between the regions on any of the indices.

Table 4-11. Comparing Regional Mean Scores on The Models' Indices

Subscale	Region	Mean (<i>SD</i>)	<i>t</i>	<i>df</i>	<i>p</i>
Intentions (Reactive)	Saskatoon	8.86 (4.08)	.103	159	.918
	Kelowna	8.79 (4.43)			
Intentions (Instrumental)	Saskatoon	5.55 (3.12)	-.537	159	.592
	Kelowna	5.86 (4.00)			
Attitudes (Reactive) ^a	Saskatoon	47.66 (19.58)	-1.36	156	.177
	Kelowna	51.95 (20.16)			
Attitudes (Instrumental) ^a	Saskatoon	26.77 (14.58)	-.505	156	.615
	Kelowna	27.89 (13.39)			
Subjective Norms (reactive) ^a	Saskatoon	30.35 (16.49)	-.775	158	.440
	Kelowna	32.93 (25.21)			
Subjective Norms (Instrumental) ^a	Saskatoon	18.87 (14.09)	-.608	158	.544
	Kelowna	20.21 (13.76)			
Self-Efficacy (Reactive)	Saskatoon	10.39 (5.01)	-.776	156	.439
	Kelowna	11.00 (4.85)			
Self-Efficacy (Instrumental)	Saskatoon	7.12 (4.03)	-.838	156	.403
	Kelowna	7.71 (4.79)			
Perceived Behavioural Control ^a	Saskatoon	13.31 (3.98)	-.396	155	.693
	Kelowna	13.57 (4.16)			
Past Behaviour (Reactive)	Saskatoon	6.24 (6.83)	-.718	158	.474
	Kelowna	7.07 (7.97)			
Past Behaviour (Instrumental)	Saskatoon	3.49 (5.69)	-1.747	158	.083
	Kelowna	5.35 (7.76)			

^adirect measure.

* $p < .005$ significant after adjusting the significance level ($\alpha = .05$) with the multistage Bonferroni procedure.

Collapsing across region additional analyses were conducted to assess for differences among grades on each of the indices. Results from the one-way ANOVA revealed only one difference, which was on instrumental behaviour, $F(2, 158) = 4.231, p = .016$. Post hoc analyses revealed that differences were between grade 10 and 11 ($p = .043$) and between grade 10 and grade 12 ($p = .035$). In both cases grade 10 reported engaging in more instrumental aggression than grades 11 and 12. Correlational analysis found age to be negatively correlated with both instrumental and reactive aggression, $r = -.175, p < .05$, and $r = -.237, p < .05$, respectively. These results indicate that adolescents engage in fewer incidents of aggression as they get older.

CHAPTER 5 DISCUSSION

The main purpose of this study was to evaluate using the TPB (Ajzen, 1985), and Bandura's concept of perceived self-efficacy (1986, 1997) whether or not adolescent aggression is an intentional behaviour. In particular, this study was designed to allow for the intentionality of aggression to be assessed in both instrumental and reactive contexts. It was believed that because previous studies have found adolescent aggression to be associated with positive attitudes and outcome expectancies (see Dodge et al., 1997, Fatum & Hoyle, 1996; Moeller, 2001), as well as subjective norms and social pressure (see Barkin et al., 2001; Lopez & Emmer, 2002; Poulin & Boivin, 2000), both instrumental and reactive aggression would be found to be intentional. Overall, the results of this study provide consistent evidence that both types of adolescent aggression may be intentional. That is, adolescents recognize aggression as a viable means to obtaining specific outcomes, whether it is through using aggression to respond to provocation, or using aggression instrumentally to obtain various goals. It is important to note, however, that due to limitations in this study's methodology (see section 5.3) cause and effect cannot be determined; therefore the conclusions must be interpreted with caution.

The TPB (Ajzen, 1985, 1991) posits that behaviour is determined by intentions. Analysis of this premise confirmed the presence of such a relation. In fact, behavioural intentions were found to function as a determinant of behaviour in all four separate PATH analyses. As predicted, the relation between intentions and behaviour was

present in both instrumental and reactive contexts indicating that increases in intentions to perform aggression in the future relates to increases in actual behaviour. It was also predicted that intentions would play a larger role in instrumental aggression compared to reactive aggression. Looking at the TPB models, the magnitude of the path coefficient between intentions and behaviour was larger ($\beta = .65$, see Figure 4-3) for instrumental aggression than the same path ($\beta = .53$, see Figure 4-1) for reactive aggression; however, it is important to note that path coefficient differences between models were not statistically assessed. While it appears as though intentions may have a more influential role in subsequent instrumental behaviour, both models indicate that intentions serve as a determinant of aggressive behaviour.

While such an association between intentions and behaviour comes as no surprise for instrumental aggression, some may be surprised at the significant role intentions appear to play in reactive aggression. Reactive aggression is identified as a heavily emotional response to frustration (Dollard et al., 1939) or negative affect (Berkowitz, 1989, 1990; Berkowitz & Thome, 1987). Other studies have reported that reactive aggression is associated with the inability to control one's emotions (Dodge et al., 1997). These results may lead one to think that reactive aggression is an uncontrollable, spontaneous reaction to anger; a behaviour that occurs without prior thought or intention. However, the results of this study indicate that adolescents have a preconceived notion of how they will behave if they are provoked.

Inspection of the measures of fit indicate that the TPB works well to explain adolescent aggression. This was the case regardless of whether or not a strict measure of controllability or perceived self-efficacy was used, as the fit indices of the two models

were relatively identical within each aggressive context. Further, whether instrumental or reactive aggression was being addressed, the fit indices indicated the models provided a good fit to the data. In fact, it was hypothesized that although the TPB would be applicable to both functions of aggression, there would be evidence of a better fit for instrumental aggression. While the fit indices did not provide clear support for this interpretation, examination of the squared multiple correlations for behaviour did provide some support. Depending on whether PBC or perceived self-efficacy was used, the model explained 43% or 44% of the variance in instrumental aggression, respectively. With respect to reactive aggression, both models (i.e., using either PBC or self-efficacy) accounted for 31% of the variance in behaviour. Therefore, the model appears to account for more variance in instrumental aggression than reactive aggression. However, in either case the models were able to account for a considerable amount of variance in aggressive behaviour.

Overall, this study has provided support for using either the original TPB model or a modified model incorporating self-efficacy to examine and explain adolescent aggression. In addition to demonstrating the applicability of the TPB to explain adolescent aggression are the findings that the proposed determinants of intentions (i.e., attitudes, subjective norms, PBC, and perceived self-efficacy) were all significant. Looking first at reactive aggression (refer to Figure 4-1), attitudes were found to have the largest influence on behavioural intentions; therefore, indicating that intentions to behave aggressively are influenced the most by evaluations as to whether performing a behaviour is good or bad. Subjective norms and PBC had similar significant influences on intentions. The significant findings of subjective norms are contrary to those

reported by Roberto et al. (2003), which indicated only attitudes were significant in predicting intentions to behave aggressively. However, as mentioned earlier, their study did not accurately measure subjective norms, as they did not ask participants about what they believed significant referents thought about their behaviour. The results of this study indicate that increased social pressure to respond aggressively to provocation was associated with increased reactive intentions.

Interestingly, when self-efficacy was substituted for PBC in looking at reactive aggression there appeared to be no large effect. It was hypothesized that self-efficacy would have the most influence on intentions than any other determinant. While the coefficient from self-efficacy to intentions ($\beta = .23$; see Figure 4-2) was larger than that from PBC to intentions ($\beta = .19$; see Figure 4-3) there was no change in the variance accounted for in intentions, or subsequent behaviour. This is not to say that self-efficacy did not have a significant impact on intentions. Rather the results suggest that increased beliefs in the ability to successfully act aggressively in a reactive situation were associated with greater intentions to behave aggressively in the near future. These results are in accordance with Bandura's (1997) argument that people are more motivated to engage in behaviour they think they can perform successfully.

The influential role of self-efficacy was more extensive in the instrumental context. When predicting intentions to behave instrumentally, the path coefficient from self-efficacy to intentions ($\beta = .45$, see Figure 4-4) appeared larger than the same path in the reactive context ($\beta = .23$; see Figure 4-2). Further, the coefficient was larger than the path from PBC to intentions ($\beta = .26$; see Figure 4-3) in the instrumental context. Along with a larger path coefficient, the substitution of PBC with self-efficacy resulted

in more variance being accounted for in intentions. Subsequently in this model, self-efficacy had the most influence on behavioural intentions. By demonstrating that self-efficacy accounts for more variance in intentions than PBC, the results of Cheung and Chan's (as cited in Ajzen, 2002a) meta-analysis are supported. However, when looking at the reactive aggression models, the effects of PBC and self-efficacy were similar. Therefore, the relation between PBC and self-efficacy appear to be contingent on the aggressive context.

The influence of self-efficacy on instrumental intentions was certainly expected. Instrumental aggression involves using aggressive behaviour to obtain rewards, such as gaining social status or financial resources (Bartol & Bartol, 2005; Feshbach, 1967). Therefore, the ability to perform that behaviour successfully would be a highly motivating factor. Or as Bandura would argue, the mere perception of being able to perform the behaviour successfully would be just as motivating (Bandura, 1997; Bandura, Adams, Hardy, & Howells, 1980). Comparing the role of self-efficacy in instrumental aggression to that in reactive aggression highlights a possible difference in the underlying motivations. In the reactive context individuals are responding to a situation in which they have been provoked, therefore, the most important factor may be to react and return the aggressive behaviour. Whether or not they are successful may not be as important as simply retaliating. Comparing the level of subjective norms towards engaging in instrumental or reactive aggression, adolescents were found to feel more social pressure to behave aggressively in reactive contexts. Further, adolescents reported expecting more positive outcomes from reactive aggression than instrumental aggression. Considering the behavioural beliefs comprising attitudes, these findings

indicate that not only do adolescents feel they are expected to retaliate, but also they will obtain positive rewards such as gaining a reputation and respect. In other words, adolescents may simply be motivated to stand up for themselves against people who harm them. It must be remembered, however, that the influence of self-efficacy was not completely absent, because it was found to also predict reactive intentions. Rather, the data suggest that other motivating factors, such as attitudes may be more important in terms of reactive aggression.

The TPB is also designed to examine the degree to which participants believe that a particular behaviour is under their control (Ajzen, 1985; Madden et al., 1992). This can be examined by looking at the indirect path from PBC to behaviour through intentions, and the direct path from PBC to behaviour. Madden et al. (1992) found that when participants perceived themselves to have little control over the behaviour the direct path was significant, indicating that intending to perform the behaviour did not have an impact. However, when participants perceived themselves to have control over the behaviour, the direct path was not significant, while the indirect path was. In this study, the direct path was not found to be significant for either instrumental or reactive aggression; thus, indicating adolescents believe they have control over their aggressive behaviour in either context. While again, this finding is certainly expected in the context of instrumental aggression it is more surprising in the context of reactive aggression. As mentioned earlier, reactive aggression is argued to involve a less controlled response to provocation (Berkowitz, 1989; Dodge et al., 1997). These results suggest that adolescents believe their responses to provocation can be controlled.

Looking at the same indirect and direct pathways with the self-efficacy

substitution, the results were as expected. It must be remembered that self-efficacy and PBC are not identical constructs, thus, similar associations entail different meaning. A significant indirect pathway, and nonsignificant path from self-efficacy to behaviour does not indicate that the behaviour is believed to be under volitional control. Rather, the relation indicates that perceiving one's self to be capable of performing aggressive behaviour successfully does not automatically mean one will be aggressive. Perceptions of self-efficacy were found to influence behavioural intentions, thus, those perceiving themselves to be able to successfully behave aggressive were more likely to intend to behave aggressive. However, it must be remembered that intentions were also significantly influenced by attitudes and subjective norms. Therefore, self-efficacy is not the only factor influencing decisions to behave aggressively. Evidently, this finding occurred in both instrumental and reactive aggression contexts.

5.1 Identifying The Presence of Two Functions of Aggression

The results discussed above were based on analyses that made two assumptions. First, that there are two distinct functions of aggression. Second, that when looking at the functions of aggression, analyses can be collapsed across sex. Making the first assumption was based on a multitude of studies on aggression in adults, adolescents, and children that reported two underlying functions of aggression (see Bartol & Bartol, 2005; Berkowitz, 1988, 1990; Dodge et al., 1997; Feshbach, 1967; Poulin & Boivin, 2000). It is believed that the results presented thus far confirm that while there are similarities in the two functions with respect to the constructs examined there are also differences highlighting the need to make the distinction. However, in addition to results produced from the Path analyses, the measurement system developed by Little, Jones et al. (2003) was also used to verify the presence of two functions of aggression in

this study's sample. Results from this study supported those reported by Little, Jones et al., in that the resulting instrumental and reactive indices are at best minimally correlated..

As for the second assumption, it was originally hypothesized that sex could be collapsed across when examining the functions of aggression, based on the results reported by Little, Jones et al. (2003). The authors found that there were no sex differences in either the instrumental or reactive aggression indices. In this study, analysis of the indices produced through the Little, Jones et al. measurement system also failed to yield any sex differences, thus replicating the earlier findings. Furthermore, analysis of the instrumental and reactive indices compiled to examine the TPB also failed to identify any sex differences. Therefore, it was with confidence that sex was collapsed across to examine the TPB in instrumental and reactive adolescent aggression. Results from not finding any sex differences with respect to aggressive behaviour, indicate that boys and girls engage in identical amounts of instrumental and reactive aggression. It is also important to note, however, that further analysis revealed that on average participants reported engaging in reactive aggression more often than instrumental aggression.

Interestingly, analysis of the pure scales of overt and relational aggression found that boys report using overt aggression more often than girls. However, with respect to relational aggression, there was no sex difference. These results do not support previous claims (see Chesney-Lind et al., 2002) that boys use overt aggression, while girls use relational aggression. Instead, the results imply that boys will use both forms, while girls tend to use mostly relational aggression. While these results may be used to

support the continued separation of boys and girls in the study of the forms of adolescent aggression, the results reported above support including both sexes in future studies examining why adolescents behave aggressively. This conclusion is further supported by the lack of significant sex differences found in the determinants of the TPB. In the analysis of intentions, attitudes, subjective norms, PBC, and self-efficacy, only PBC and self-efficacy towards instrumental aggression were significant. In both cases males were higher. Overall, these results suggest further similarities between boys and girls in why they behave aggressively.

5.2 Potential Application of The Findings

Results from this study suggest that aggressive behaviour, either instrumental or reactive, involves a rational choice. In order to minimize the engagement in such behaviour, the factors influencing behavioural intentions need to be addressed. An appealing aspect of the TPB is that it not only allows for multiple constructs to be evaluated in a single theoretical framework, but it also provides insight as to how future prevention and intervention programs can be developed. In particular, what areas the program should target. Huesmann and Reynolds (2001) stress that programs need to target multiple causes in order to successfully address adolescent aggression. The results of this study indicate that there are multiple factors influencing adolescents' decisions to engage in aggressive behaviour. For instance, attitudes, subjective norms, PBC, and self-efficacy were found to relate to behavioural intentions, which were in turn found to relate to behaviour. Because the effects of self-efficacy were similar to PBC in the case of reactive aggression and better in the case of instrumental aggression, this section will focus on self-efficacy rather than PBC.

When looking at both functions of aggression the three determinants of

intentions were found to have significant influences. Therefore, the development of prevention and intervention programs, must address all three elements. For example, targeting attitudes by trying to emphasize the negative outcomes of aggression is likely to have minimal success if subjective norms are not considered. Adolescents reported experiencing social pressure to behave in particular ways, which was shown to impact their behavioural intentions. In other words, the results from this study highlight that attitudes, subjective norms, or self-efficacy do not function in isolation.

The results obtained in this study indicate that all three determinants were significant, but most importantly, the pattern among these determinants were not found to be similar between instrumental and reactive aggression. As such, the results of this study suggest that future intervention and prevention programs need to distinguish between instrumental and reactive aggression. This conclusion supports other researchers who have made similar recommendations for developing programs that are tailored to address the specific aetiology of each function (McAdams, 2002; Smithmyer, Hubbard, & Simons, 2000).

In terms of reactive aggression, attitudes were found to have the largest influence on intentions. While there is value to saying that adolescents' attitudes towards reactive aggression need to be targeted, the TPB allows for an additional level of insight. Ajzen and Fishbein (1980) argued that in order to facilitate behavioural change the beliefs comprising attitudes and subjective norms must be targeted. Remember that it is the beliefs that form the foundation for the construct. In terms of attitudes, behavioural beliefs were comprised of four specific outcome expectancies (i.e., get what you want, gain respect, get a reputation, and get in trouble) and their evaluation. Therefore,

programs should begin by addressing these outcomes, which are often viewed as being rewarding (the likely exception would be getting in trouble). One possible solution would be to identify alternative behaviours that can produce similar rewarding outcomes. It is also important to not lose sight of the target behaviour and its function. In the context of this study reactive aggression involved a behavioural response towards another person who had caused previous harm. As a result, any suggested alternative behaviours would have to allow individuals to respond to situations of provocation while maintaining the potential for rewarding outcomes.

Not only did the analysis of reactive aggression indicate that focus should be placed on attitudes, but attention also needs to be paid to subjective norms and self-efficacy. Using the example of identifying alternative pro-social behaviours, it is important that new behaviours be identified that will elicit similar levels of social pressure. Important referents that were identified in this study were friends, parents, and teachers. These are significant referents that adolescents believe exert social pressure on them to behave certain ways. As a result, it would be imperative that any identified pro-social behaviours have the support of those individuals. With respect to self-efficacy it is important that adolescents perceive themselves as being capable of performing any alternative behaviours that are suggested.

Switching focus to instrumental aggression, the results from this study suggest that programs focus on self-efficacy. Similar, to the approach suggested for reactive aggression, pro-social alternative behaviours could be identified that would allow adolescents to obtain various goals such as gaining respect and a positive reputation. But most importantly, adolescents must perceive themselves as being able to perform

these behaviours. As mentioned earlier, people are motivated to perform behaviours they believe they are capable of performing (Bandura, 1999). Looking at aggression in general, Erdley and Asher (1996) found that aggressive children had low self-efficacy towards nonaggressive behaviour. Therefore, adolescents must not only be made aware of prosocial behaviour, but also given the opportunity to practice the behaviours in order to increase their self-efficacy towards the behaviour.

In addition to targeting self-efficacy, the results from this study suggest that attitudes and subjective norms towards instrumental aggression need to be addressed. In particular, programs should identify behaviours that have the potential to allow adolescents to obtain what they want, gain respect, acquire a positive reputation and not get them in trouble. However, as mentioned earlier with respect to reactive aggression, any alternative behaviour must also elicit positive support from friends, parents, and teachers.

In summary, the results of this study indicate that in order to reduce the general engagement in aggressive behaviour, aggression prevention and intervention programs need to address adolescents' attitudes, subjective norms, and perceived self-efficacy towards aggression. However, the study also identifies the need for programs to distinguish between instrumental and reactive aggression. Programs targeting instrumental aggression, need to ensure that they focus on perceptions of self-efficacy; whereas, programs targeting reactive aggression need to emphasize changes in attitudes towards reactive aggression.

In addition to having an impact on the development of prevention and intervention programs, the results of this study can also influence the further

development of theory. The main purpose of this study was to assess whether or not adolescent aggression was an intentional behaviour. Results have shown that in both instrumental and reactive contexts aggression may be an intentional behaviour (see section 5.3 for limitations to this conclusion). In other words, aggression does not simply appear out of thin air, rather it is a behaviour that is preconceived. As such, theory development can focus on adolescents' awareness and anticipation of future behaviour. Furthermore, this study identified four determinants (i.e., attitudes, subjective norms, PBC, and self-efficacy) of intentions. While all of these were found to be significant determinants of behavioural intentions, they did so to different degrees depending on context. In response, further development of adolescent aggression theory needs to continue to consider the unique functions of aggression, while simultaneously acknowledging that aggression is influenced by a multitude of factors that do not operate in isolation. In other words, theoretical development will need to employ a multifaceted approach.

5.3 Limitations and Directions for Future Research

In review of this study there are a number of important limitations that must be discussed. By discussing these limitations, recommendations for future research can be made in order to ensure that through continued research a more thorough and complete understanding of adolescent aggression is obtained. The first issue that must be addressed entails the self-report nature of this study. Throughout the literature on aggressive behaviour there are concerns that individuals underreport their engagement in aggressive behaviour. In order to protect against this many researchers employ methods of peer nomination, parental reports, and/or teacher reports (see Crick, et al., 1996; Dodge et al., 1997). Little, Brauner et al. (2003) argued that when looking at the forms

of aggression, multiple sources of information should be obtained. This would certainly make sense as forms entail behaviours that can be objectively observed. These authors identified that self-reports should be used when looking at the functions of aggression, because of the difficulty of others to judge the intentions and reasons as to why someone behaves aggressively. They also stated that older children have the cognitive capabilities to accurately judge the reasons behind their behaviour. Additionally, Prinstein and Cillessen (2003) reported that adolescents have a similar understanding of the functions of aggression as do teachers. Based on these arguments self-report is believed to be an accurate measure of the functions of aggression. However, it must be noted that this study did not utilize methods to corroborate the information gathered nor did it assess participant deception. As a result,, it is recommended that future examination of the functions of aggression, especially with young children, utilize multiple measures as younger children may not be able to accurately judge their behaviour, as well as to assess the truthfulness of the self-reports.

Another potential limitation of this study is that the sample was drawn from two regions (i.e., Saskatoon, Saskatchewan, and Kelowna, British Columbia) for purposes of convenience. While analyses between the two regions were conducted, the relatively small sample size, did not allow for the models to be assessed for each region separately in order to identify differences. However, comparisons between the two regions on each of the indices used in the path analyses did not yield any significant differences. This was the case despite a large difference in response rates between the two regions. It should be noted that for these comparisons the critical value was adjusted with a Bonferroni multistage procedure, however, none of the comparisons would have been

significant had an adjustment not been used (refer to Table 4-8). One notable difference was that the sample from Kelowna was younger. Astor et al. (2002) found that students in younger grades were more likely to be in a fight in the previous year than older grades. Results from this study, confirmed that participants in grade 10 reported engaging in more incidents of instrumental aggression than those in grades 11 and 12. However, this difference was isolated to instrumental aggression. Future research should utilize larger samples to explore in more detail the potential effects of such demographic characteristics.

Without question, the convenience sampling method used in this study warrants caution when generalizing the results. In this regard, consideration must also be given to the nature of those who participated in this study. Table 4-5 illustrates that this sample is likely at the low end of the spectrum of aggressive behaviour. For instance, participants reported engaging in a mean 6.64 reactive and 4.38 instrumental acts of aggression in the previous 30 days. While it is not clear exactly how these frequencies compare to other adolescent groups, it is believed these rates are much lower than would be found in a high risk adolescent population. As a result, future research is needed to examine the generalizability of these findings and their applicability to a more aggressive adolescent population.

With respect to demographics, there is a potential limitation in the procedure used to assess sex differences. Multiple *t*-tests were used to assess possible sex differences on the subscales of the Little, Jones et al. (2003) aggression instrument (refer to Table 4-1), as well as the compiled indices used in the path analyses (refer to Table 4-9). Because these analyses were not hypothesized and contained multiple comparisons,

the critical level ($\alpha = .05$) was adjusted to control for Type I error (reporting a difference when there is no difference). In particular, a multistage Bonferroni adjustment procedure was used (see Howell, 2002). Unfortunately, in the process of protecting against Type I error, the potential for committing Type II error (claiming there is no difference when there is) increases. Inspection of the results reported in Table 4-1 and 11 indicates a number of comparisons that given a less conservative critical value would have been significant. Future research should be designed so as to explore these comparisons *a priori*.

Another potential limitation of using the TPB in general involves the degree to which the beliefs being assessed are personally held. Cook, Moore, and Steel (2005) argued that if the beliefs used in the final questionnaire are not personally held, participants are merely providing an opinion of the items rather than reporting on their own personal beliefs. Therefore, it is important that the beliefs gathered through the elicitation study reflect those of participants in the final sample. Ajzen and Fishbein (1980) maintained that to protect against this nine or more items should be used to measure beliefs. Due to time constraints this study only used four belief-based items. To further exacerbate this issue, the elicitation study was conducted with a sample of participants from a single city. However, the differences between the two regions appear to be minimal. Furthermore, results indicated that belief-based measures correlated with the direct measures, which were used to test the models. These results provide confidence in the assumption that the belief-based measures were reflective of personally held beliefs in the main study's sample.

There are two procedures that could be used in the future to help protect against

such an issue. First, the final questionnaire could utilize more items as recommended by Ajzen and Fishbein (1980). Second, rather than obtain a limited number of belief-based items from an elicitation study, individual beliefs could be obtained from participants in the final questionnaire. For example, to assess attitudes, participants could be asked through an open-ended question to list what could happen if they hit someone. Participants could then be asked how likely each outcome is to happen and then whether or not that outcome would be good or bad. This approach would allow indices to be calculated and general beliefs to be identified for later discussion.

With respect to using the TPB, Cook et al. (2005) argued that the implied causality is problematic. One of the main criticisms is that the temporal order of cause and effect cannot be determined by the procedure. An aspect of causality entails that the cause occur before the effect. In the case of the TPB intentions would precede behaviour, while attitudes, subjective norms, and PBC would precede intentions. Often, and as in this study, participants' attitudes, subjective norms, PBC, intentions, and behaviour are assessed at the same time (see Ajzen & Driver, 1992; Evans & Taylor, 1995; Roberto et al., 2003). In particular, participants are asked what they intend to do in the near future and asked what they have done in the recent past. However, it is possible the current degree of intentions, attitudes, subjective norms, and PBC being reported are not identical to what led to the past behaviour being performed. Ideally, future research should inquire about the proposed determinants of the behaviour and then at a later date inquire about the performed behaviour.

5.4 Future Considerations in Operationally Defining Instrumental and Reactive Aggression

The final issue that should be addressed concerns the definitions of aggression.

In this study instrumental aggression was defined as behaviour intended to hurt another person, but for the purpose of obtaining other goals such as gaining respect. In other words, the actual goal of harming another person is secondary to the main goal.

Reactive aggression was operationalized as intending to hurt another person who had caused the actor previous harm. It is certainly recognized that researchers such as Berkowitz (1990) would argue that reactive aggression does not necessarily have to be targeted towards the source of the provocation or negative affect. While the definitions used in this study are believed to reflect the underlying characteristics identified in earlier research, there are additional characteristics presented in more recent research that were not addressed. For instance, some researchers add a temporal component and categorize reactive aggression as being immediate (Meloy, 2006; Porter & Woodworth, in press; Woodworth & Porter, 2002).

By incorporating a temporal element, the potential interpretation of a behaviour can change drastically. Take the following scenario for example. On a Friday night Bob is at a local bar when another man, Gerry, bumps into Bob spilling his drink. After exchanging heated words, Bob leaves only to return 3 hours later with a knife and stabs Gerry. In another scenario, all the elements remain the same, except rather than leaving and returning three hours later Bob immediately pulls out a knife and stabs Gerry. Comparing the two scenarios some might argue that the first reflects instrumental aggression as the three-hour time period indicates planning; whereas, the second scenario reflects reactive aggression, as it is a clear response to provocation. However, I would argue that both scenarios reflect reactive aggression, because the individual is responding to provocation. The question that needs to be raised is whether or not the

issue of time simply involves a form of aggression (i.e., how the aggression is carried out) or a function of aggression (i.e., why the aggression is carried out).

The example of physical aggression used above clearly highlights how the issue of time can influence the interpretation of the event. But when considering relational aggression the element of time appears less relevant. Take the following scenario for example. On his way to class Jeff is bumped by Harold in the busy school hallway. As a result, Jeff drops his books and the students around him begin to laugh. After school when Jeff gets home he posts hurtful rumours about Harold on his website. According to the operational definition used in this study, this behaviour would be considered reactive aggression. The actual nature of this behaviour limits its ability to be conducted immediately because a computer is required. In light of this example it is believed that the issue of time is more relevant to specific forms of aggression, thus, furthering the argument that time is related to form rather than function. However, it will be important for future research to explore the specific nature of time and how it may impact the underlying functions of aggression.

5.5 Conclusion

The results of this study demonstrate the applicability of using either the original model of the TPB or a modified model utilizing self-efficacy to explain and understand instrumental and reactive adolescent aggression. Furthermore, by using this theoretical framework, differences and similarities between the two functions of aggression have been identified. By acknowledging the differences and similarities future prevention and intervention programs can be developed that will not only be more applicable to the specifics of aggression, but also more successful. Finally, through addressing the limitations, future research can continue to build upon this study and those before it, in

order to accurately and fully understand adolescent aggression in all its forms and functions. Only through an accurate and full understanding can the adverse effects of adolescent aggression be minimized.

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APPENDIX A: ELICITATION STUDY QUESTIONNAIRE

Aggression Beliefs Survey

Instructions

Please Read Carefully

This survey will ask you questions about aggressive behaviour. Aggressive behaviour is any behaviour that is intended to hurt another person either physically or emotionally. Such behaviour can include things like hitting, kicking, threatening, or saying mean things about another person in order to hurt them.

Please remember that none of the answers that you give can be used to identify you. Please **DO NOT** put your name or any other identifying information on this survey.

This survey contains four sections and will take you approximately 20 minutes to complete. Please read the instructions carefully as you may be asked to answer the questions in a manner different from the previous section.

Your answers to the questions are private; please **DO NOT** put your name or any other identifying information on this survey. Please answer the questions as honestly as you can. We are interested in your answers, so please do not talk about the questions or your answers to anyone until everyone is finished.

Thank you for your help

SECTION 1. In this section you will be asked about what you think would happen if you behaved aggressively. Remember aggressive behaviour includes any physical or verbal behaviour intended to hurt another person either physically or emotionally. Please write down your response.

1. What do you think are the **ADVANTAGES** of ignoring or telling your friends to ignore someone who hurt you either physically or emotionally?

a. _____

b. _____

c. _____

1b. What would be the **DISADVANTAGES** of such behaviour?

d. _____

e. _____

f. _____

2. What would the **ADVANTAGES** of physically or verbally hurting someone in order to get what you want?

a. _____

b. _____

c. _____

2b. What would be the **DISADVANTAGES** of such behaviour?

d. _____

e. _____

f. _____

3. What do you think are the **ADVANTAGES** of behaving aggressively towards someone?

a. _____

b. _____

c. _____

3b. What do you think are the **DISADVANTAGES** of such behaviour?

d. _____

e. _____

f. _____

4. What do you think are the **ADVANTAGES** of physically or verbally hurting someone who hurt you either physically or emotionally?

a. _____

b. _____

c. _____

4b. What would be the **DISADVANTAGES** of such behaviour?

d. _____

e. _____

f. _____

5. What would be the **ADVANTAGES** of ignoring or telling your friends to ignore someone in order to get what you want?

a. _____

b. _____

c. _____

5b. What would be the **DISADVANTAGES** of such behaviour?

d. _____

e. _____

f. _____

SECTION 2. This section asks you to indicate people you think would approve or disapprove if you behaved aggressively. Please write down two types of people (e.g., Friends, Mom, Dad, Brother, Sister, Teacher, Relatives, Cousins, etc). Do not provide any names.

1. Are there any individuals or groups who would **APPROVE** of you physically or verbally hurting someone who hurt you?
 - a. _____
 - b. _____
- 1b. Which individuals would **DISAPPROVE** of such behaviour?
 - c. _____
 - d. _____
2. Are there any individuals or groups who would **APPROVE** of you ignoring or telling your friends to ignore someone who hurt you?
 - a. _____
 - b. _____
- 2b. Which individuals would **DISAPPROVE** of such behaviour?
 - a. _____
 - b. _____
3. Are there any individuals or groups who would **APPROVE** of you ignoring or telling your friends to ignore someone in order to get what you want?
 - a. _____
 - b. _____
- 3b. Which individuals would **DISAPPROVE** of such behaviour?
 - a. _____
 - b. _____
4. Are there any individuals or groups who would **APPROVE** of you behaving aggressively towards someone?
 - a. _____
 - b. _____

4b. Which individuals would **DISAPPROVE** of such behaviour?

a. _____

b. _____

5. Are there any individuals or groups who would **APPROVE** of you physically or verbally hurting someone in order to get what you want?

a. _____

b. _____

5b. Which individuals would **DISAPPROVE** of such behaviour?

a. _____

b. _____

SECTION 3. This section asks you to indicate what situations would enable or impede your ability to behave aggressively. Please write down two responses for each situation.

1. What factors or circumstances would **ENABLE** you to behave aggressively towards someone in the next 30 days?

a. _____

b. _____

1b. What factors or circumstances would make it **DIFFICULT** or **IMPOSSIBLE** for you to engage in such behaviour?

c. _____

d. _____

2. What factors or circumstances would **ENABLE** you to physically or verbally hurt someone in order to get what you want in the next 30 days?

a. _____

b. _____

2b. What factors or circumstances would make it **DIFFICULT** or **IMPOSSIBLE** for you to engage in such behaviour?

c. _____

d. _____

3. What factors or circumstances would **ENABLE** you to ignore or tell your friends to ignore someone in order to get what you want in the next 30 days?
- a. _____
 - b. _____
- 3b. What factors or circumstances would make it **DIFFICULT** or **IMPOSSIBLE** for you to engage in such behaviour?
- c. _____
 - d. _____
4. In the next 30 days, what factors or circumstances would **ENABLE** you to ignore or tell your friends to ignore someone who hurt you either physically or emotionally?
- a. _____
 - b. _____
- 4b. What factors or circumstances would make it **DIFFICULT** or **IMPOSSIBLE** for you to engage in such behaviour?
- c. _____
 - d. _____
5. In the Next 30 days, what factors or circumstances would **ENABLE** you to physically or verbally hurt someone who hurt you either physically or emotionally?
- a. _____
 - b. _____
- 5b. What factors or circumstances would make it **DIFFICULT** or **IMPOSSIBLE** for you to engage in such behaviour?
- c. _____
 - d. _____

SECTION 4. This section asks some general questions about you. The information you provide **cannot** be used to identify you.

1. How old are you?

- 14 15 16 17 18 19 20
Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ

2. What is your sex?

Male

Ⓜ

Female

Ⓕ

APPENDIX B: PARENT INFORMATION LETTER REGARDING ELICITATION
STUDY



Parent/Guardian Information Thoughts About Aggression Study

Jonathan Brown, a graduate student from the University of Saskatchewan is conducting a research study at your child's high school. Your child is invited to participate in this study, which is looking at some of the things adolescents think about aggression. The following provides some important information about the study. If you have any questions after reading this information please contact the researcher, Jonathan Brown, at (306) 653-2502.

WHAT:

- The study is looking at what adolescents think about aggressive behaviour
- The study will gather information about adolescents' attitudes and social norms towards aggression, and some of the things that may impact whether they behave aggressively or not.
- The study involves a questionnaire that will be given to participants.

WHO:

- Your child along with other high school students in Saskatoon is invited to participate in the study.

WHY:

- Information gathered from the study will help researchers to understand some of the factors that influence adolescents to either behave or not behave aggressively.
- The information gathered in this study will also help to develop a questionnaire to be used in another study with adolescents.
- Such information will help to develop future prevention and intervention programs that will help decrease the negative effects of aggression.

WHEN & WHERE:

- The study will take place in a couple of weeks at your child's school.
- The study will be administered during class time and will take approximately 20 minutes to complete.

WHAT YOU NEED TO KNOW:

- If you give consent it does not mean that your child will automatically take part in this study. **Each child will be asked whether or not he/she wants to participate** before they may participate in the study.
- This is **not a requirement** of your child's school and **your child may choose not to participate**. If your child does not participate, he/she will not be penalized.
- **Your child will not have to answer any questions he/she is uncomfortable with.**

- Because of the general nature of questions asked in the questionnaire there are no anticipated risks to your child.

THE QUESTIONNAIRE

- The questionnaire is **completely confidential**. Teachers, parents, school administrators, and other students will not see any of your child's responses.
- **Only the researcher** (Jonathan Brown) will have access to your child's completed questionnaire. Questionnaires will be kept in a protected and confidential manner.
- Participants **cannot be identified** by their completed questionnaire, because their names will not be on them and the questions are not specific enough to provide any identifying information.
- Participants will be asked about such things as what could happen as a result of aggressive behaviour, what other people think about aggression, and what could influence people to behave aggressively.

QUESTIONS?

- If you have any questions regarding the proposed study you can contact Jonathan Brown at (306) 653-2502.
- You may also contact Dr. Steve Wormith, supervisor of this research project, at (306) 966-6818, regarding the proposed study.
- If you have any general questions about your child's rights as a participant please contact the University of Saskatchewan Research Ethics Board through the office of Research Services at (306) 966-2084.

ADDITIONAL INFORMATION:

- Your child's school board has reviewed this study.
- This study has been approved on ethical grounds by the University of Saskatchewan Behavioural Sciences Research Ethics Board on April 14, 2005.
- The information collected will be used in Jonathan Brown's Master's Thesis.

MAY YOUR CHILD PARTICIPATE?

- If you **want** your child to participate then you don't need to do anything. The researcher will ask your child if he/she wants to participate and if they agree they will be able to participate.
- If you **do not want** your child to participate then please contact your child's school or the researcher, Jonathan Brown, by either phone (653-2502) or by e-mail (jonathan.brown@usask.ca). Please provide your child's name and his/her grade so the researcher can ensure that he/she does not participate in the study.

Thank you for your time.

Sincerely,
Jonathan Brown

APPENDIX C: ELICITATION STUDY PARTICIPANT ASSENT FORM

Participant Information

Aggression Beliefs Survey

You along with other students in Saskatoon are invited to participate in a study and share your thoughts about aggression. In the study you are going to be asked about some of the things you think about aggressive behaviour. Your responses will be used to help make a larger survey on aggression that will be given to other students.

The study is going to take place right now. In this study you will be asked to complete a survey that will take you approximately 20 minutes to complete. All of the answers that you give will be kept confidential. Only the researcher and his supervisor will have access to your completed survey. Your parents, teachers, or friends will **NOT** be able to see any of your answers. None of the responses that you give can be used to identify you.

Your participation in this study is voluntary. You may choose not to complete this survey. This survey is not part of your required schoolwork. If you decide to participate, remember that you do not have to answer any of the questions you do not feel comfortable answering. For any reason and at any time you are allowed to stop. You will **NOT** be penalized. If you decide to stop the researcher will not use your answers and your survey will be destroyed.

Your responses will be combined with those of other students and summarized. The researcher will report on only the summarized results, which will **NOT** allow you to be identified. Only summarized reports will be made available to your school and will be presented by the researcher at academic conferences and in academic journals.

Please take a moment to decide if you want to participate. When you have made a decision, please turn to the next page.

If you would like to participate, please print your name here:

If you would like to participate, please sign your name here:

Please write the date here:

APPENDIX D: MAIN STUDY QUESTIONNAIRE

Aggressive Behaviour Survey Instructions

Please Read Carefully

This survey will ask you about aggressive behaviour. Aggressive behaviour is any behaviour that is intended to hurt another person either physically or emotionally. Such behaviour can include things like hitting, kicking, threatening, or saying mean things about another person in order to hurt them.

Please remember that none of the answers that you give can be used to identify you. Please **DO NOT** put your name or any other identifying information on this survey.

This survey contains seven sections and will take you approximately 30 minutes to complete. Please read the instructions carefully as you may be asked to answer the questions in a manner different from the previous section.

Your answers to questions are private; please **DO NOT** put your name or any other identifying information on this survey. Please answer the questions as honestly as you can. We are interested in your answers, so please do not talk about the questions or your answers to anyone until everyone is finished.

Thank you for your help

SECTION 1. This section asks about your behaviour. Please fill in the circle that indicates how true each item is for you

	Not At ALL			Completely True
1. I'm the kind of person who often fights with others	①	②	③	④
2. I'm the kind of person who hits, kicks, or punches others	①	②	③	④
3. I'm the kind of person who says mean things to others.	①	②	③	④
4. I'm the kind of person who puts others down.	①	②	③	④
5. I'm the kind of person who threatens others.	①	②	③	④
6. I'm the kind of person who takes things from others	①	②	③	④
7. When I'm hurt by someone, I often fight back	①	②	③	④
8. When I'm threatened by someone, I often threaten back.	①	②	③	④
9. When I'm hurt by others, I often get back at them by saying mean things to them	①	②	③	④
10. If others make me upset or hurt me, I often put them down	①	②	③	④
11. If others have angered me, I often hit, kick, or punch them	①	②	③	④
12. If others make me mad or upset, I often hurt them	①	②	③	④
13. I often start fights to get what I want	①	②	③	④
14. I often threaten other to get what I want	①	②	③	④

- | | | | | |
|--|---|---|---|---|
| 15. I often hit, kick, or punch other to get what I want | ① | ② | ③ | ④ |
| 16. To get what I want, I often put others down | ① | ② | ③ | ④ |
| 17. To get what I want, I often say mean things to others | ① | ② | ③ | ④ |
| 18. To get what I want, I often hurt others | ① | ② | ③ | ④ |
| 19. I'm the kind of person who tells my friends to stop liking someone | ① | ② | ③ | ④ |
| 20. I'm the kind of person who tells others I won't be their friend anymore | ① | ② | ③ | ④ |
| 21. I'm the kind of person who keeps others from being in my group of friends | ① | ② | ③ | ④ |
| 22. I'm the kind of person who says mean things about others | ① | ② | ③ | ④ |
| 23. I'm the kind of person who ignores others or stops talking to them | ① | ② | ③ | ④ |
| 24. I'm the kind of person who gossips or spreads rumours | ① | ② | ③ | ④ |
| 25. If others upset or hurt me, I often tell my friends to stop liking them | ① | ② | ③ | ④ |
| 26. If others have threatened me, I often say mean things about them | ① | ② | ③ | ④ |
| 27. If other have hurt me, I often keep them from being in my group of friends | ① | ② | ③ | ④ |
| 28. When I am angry at others, I often tell them I won't be their friend anymore | ① | ② | ③ | ④ |
| 29. When I am upset with others, I often ignore or stop talking to them | ① | ② | ③ | ④ |
| 30. When I am mad at others, I often gossip or spread rumours about them | ① | ② | ③ | ④ |

- | | | | | |
|--|---|---|---|---|
| 31. I often tell my friends to stop liking someone to get what I want | ① | ② | ③ | ④ |
| 32. I often say mean things about others to my friends, to get what I want | ① | ② | ③ | ④ |
| 33. I often keep others from being in my group of friends to get what I want | ① | ② | ③ | ④ |
| 34. To get what I want, I often tell others I won't be their friend anymore | ① | ② | ③ | ④ |
| 35. To get what I want, I often ignore or stop talking to others | ① | ② | ③ | ④ |
| 36. To get what I want, I often gossip or spread rumours about others | ① | ② | ③ | ④ |

SECTION 2. This section will ask you questions about how likely certain things are to happen following your behaviour. You will also be asked to indicate how good or bad those outcomes would be.

1. If I were to ignore or tell my friends to ignore someone who had hurt me, I would....

- | | | | | | |
|---------------------------------|--------------------|---|---|---|------------------|
| | Extremely Unlikely | | | | Extremely likely |
| Gain Respect | ① | ② | ③ | ④ | ⑤ ⑥ ⑦ |
| | Extremely bad | | | | Extremely Good |
| Gaining Respect would be... | ① | ② | ③ | ④ | ⑤ ⑥ ⑦ |
| | Extremely Unlikely | | | | Extremely likely |
| Get what I want | ① | ② | ③ | ④ | ⑤ ⑥ ⑦ |
| | Extremely bad | | | | Extremely Good |
| Getting what I want would be... | ① | ② | ③ | ④ | ⑤ ⑥ ⑦ |
| | Extremely Unlikely | | | | Extremely likely |
| Become popular | ① | ② | ③ | ④ | ⑤ ⑥ ⑦ |

	Extremely bad		Extremely Good
Becoming Popular would be...	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely Unlikely		Extremely likely
Get in trouble	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely bad		Extremely Good
Getting trouble would be...	①	②	③ ④ ⑤ ⑥ ⑦

2. If I were to physically hurt someone who had not hurt me, I would...

	Extremely Unlikely		Extremely likely
Gain Respect	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely bad		Extremely Good
Gaining Respect would be...	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely Unlikely		Extremely likely
Get what I want	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely bad		Extremely Good
Getting what I want would be...	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely Unlikely		Extremely likely
Become popular	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely bad		Extremely Good
Becoming Popular would be...	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely Unlikely		Extremely likely
Get in trouble	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely bad		Extremely Good
Getting trouble would be...	①	②	③ ④ ⑤ ⑥ ⑦

3. If I were to say mean things or threaten someone who had hurt me, I would...

	Extremely Unlikely					Extremely likely
Gain Respect	①	②	③	④	⑤	⑥ ⑦
	Extremely bad					Extremely Good
Gaining Respect would be...	①	②	③	④	⑤	⑥ ⑦
	Extremely Unlikely					Extremely likely
Get what I want	①	②	③	④	⑤	⑥ ⑦
	Extremely bad					Extremely Good
Getting what I want would be...	①	②	③	④	⑤	⑥ ⑦
	Extremely Unlikely					Extremely likely
Become popular	①	②	③	④	⑤	⑥ ⑦
	Extremely bad					Extremely Good
Becoming Popular would be...	①	②	③	④	⑤	⑥ ⑦
	Extremely Unlikely					Extremely likely
Get in trouble	①	②	③	④	⑤	⑥ ⑦
	Extremely bad					Extremely Good
Getting trouble would be...	①	②	③	④	⑤	⑥ ⑦

4. If I were to say mean things or threaten someone who had not hurt me, I would...

	Extremely Unlikely					Extremely likely
Gain Respect	①	②	③	④	⑤	⑥ ⑦
	Extremely bad					Extremely Good
Gaining Respect would be...	①	②	③	④	⑤	⑥ ⑦

	Extremely Unlikely				Extremely likely
Get what I want	①	②	③	④	⑤ ⑥ ⑦
	Extremely bad				Extremely Good
Getting what I want would be...	①	②	③	④	⑤ ⑥ ⑦
	Extremely Unlikely				Extremely likely
Become popular	①	②	③	④	⑤ ⑥ ⑦
	Extremely bad				Extremely Good
Becoming Popular would be...	①	②	③	④	⑤ ⑥ ⑦
	Extremely Unlikely				Extremely likely
Get in trouble	①	②	③	④	⑤ ⑥ ⑦
	Extremely bad				Extremely Good
Getting trouble would be...	①	②	③	④	⑤ ⑥ ⑦

5. If I were to ignore or tell my friends to ignore someone who had not hurt me, I would...

	Extremely Unlikely				Extremely likely
Gain Respect	①	②	③	④	⑤ ⑥ ⑦
	Extremely bad				Extremely Good
Gaining Respect would be...	①	②	③	④	⑤ ⑥ ⑦
	Extremely Unlikely				Extremely likely
Get what I want	①	②	③	④	⑤ ⑥ ⑦
	Extremely bad				Extremely Good
Getting what I want would be...	①	②	③	④	⑤ ⑥ ⑦
	Extremely Unlikely				Extremely likely
Become popular	①	②	③	④	⑤ ⑥ ⑦

	Extremely bad		Extremely Good
Becoming Popular would be...	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely Unlikely		Extremely likely
Get in trouble	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely bad		Extremely Good
Getting trouble would be...	①	②	③ ④ ⑤ ⑥ ⑦

6. If I were to physically hurt someone who had hurt me, I would...

	Extremely Unlikely		Extremely likely
Gain Respect	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely bad		Extremely Good
Gaining Respect would be...	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely Unlikely		Extremely likely
Get what I want	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely bad		Extremely Good
Getting what I want would be...	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely Unlikely		Extremely likely
Become popular	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely bad		Extremely Good
Becoming Popular would be...	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely Unlikely		Extremely likely
Get in trouble	①	②	③ ④ ⑤ ⑥ ⑦
	Extremely bad		Extremely Good
Getting trouble would be...	①	②	③ ④ ⑤ ⑥ ⑦

7. For me to ignore or tell my friends to ignore someone who hurt me, would be...

Harmful	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Beneficial
Rewarding	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Punishing
Useless	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Useful
Bad	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Good
Cool	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Uncool

8. For me to physically hurt someone who hurt me, would be...

Harmful	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Beneficial
Rewarding	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Punishing
Useless	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Useful
Bad	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Good
Cool	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Uncool

9. For me to ignore or tell my friends to ignore who had not hurt me, would be...

Harmful	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Beneficial
Rewarding	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Punishing
Useless	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Useful
Bad	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Good
Cool	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Uncool

10. For me to say mean things to or threaten someone who had not hurt me, would be...

Harmful	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Beneficial
Rewarding	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Punishing
Useless	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Useful
Bad	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Good
Cool	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Uncool

11. For me to physically hurt someone who had not hurt me, would be...

Harmful	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Beneficial
Rewarding	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Punishing
Useless	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Useful
Bad	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Good
Cool	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Uncool

12. For me to Verbally hurt someone who had hurt me, would be...

Harmful	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Beneficial
Rewarding	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Punishing
Useless	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Useful
Bad	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Good
Cool	(A)	(B)	(C)	(D)	(E)	(F)	(G)	Uncool

SECTION 3. In this section you will be asked about what certain people think about specific behaviour and how likely you are to do what those people want you to do.

1. The following people think it is okay for me to say mean things or threaten someone who has hurt me.

My Mom

	Extremely Unlikely		Extremely likely
	① ② ③ ④		⑤ ⑥ ⑦

In this situation I want to do what my mom wants me to do.

	Extremely Unlikely		Extremely likely
	① ② ③ ④		⑤ ⑥ ⑦

My Friends

	Extremely Unlikely		Extremely likely
	① ② ③ ④		⑤ ⑥ ⑦

In this situation I want to do what my friends want me to do.

	Extremely Unlikely		Extremely likely
	① ② ③ ④		⑤ ⑥ ⑦

My Teachers

	Extremely Unlikely		Extremely likely
	① ② ③ ④		⑤ ⑥ ⑦

In this situation I want to do what my teachers want me to do.

	Extremely Unlikely		Extremely likely
	① ② ③ ④		⑤ ⑥ ⑦

My Dad

	Extremely Unlikely		Extremely likely
	① ② ③ ④		⑤ ⑥ ⑦

In this situation I want to do what my dad wants me to do.

	Extremely Unlikely		Extremely likely
	① ② ③ ④		⑤ ⑥ ⑦

Generally, most people important to me think it is okay.

	Extremely Unlikely		Extremely likely
	① ② ③ ④		⑤ ⑥ ⑦

Extremely Unlikely Extremely likely

In this situation I want to do what most people important to me want

① ② ③ ④ ⑤ ⑥ ⑦

2. The following people think it is okay for me to ignore or tell my friends to ignore someone who has hurt me.

Extremely Unlikely Extremely likely

My Mom

① ② ③ ④ ⑤ ⑥ ⑦

Extremely Unlikely Extremely likely

In this situation I want to do what my mom wants me to do.

① ② ③ ④ ⑤ ⑥ ⑦

Extremely Unlikely Extremely likely

My Friends

① ② ③ ④ ⑤ ⑥ ⑦

Extremely Unlikely Extremely likely

In this situation I want to do what my friends want me to do.

① ② ③ ④ ⑤ ⑥ ⑦

Extremely Unlikely Extremely likely

My Teachers

① ② ③ ④ ⑤ ⑥ ⑦

Extremely Unlikely Extremely likely

In this situation I want to do what my teachers want me to do.

① ② ③ ④ ⑤ ⑥ ⑦

Extremely Unlikely Extremely likely

My Dad

① ② ③ ④ ⑤ ⑥ ⑦

Extremely Unlikely Extremely likely

In this situation I want to do what my dad wants me to do.

① ② ③ ④ ⑤ ⑥ ⑦

Extremely Unlikely Extremely likely

Generally, most people important to me think it is okay.

① ② ③ ④ ⑤ ⑥ ⑦

	Extremely Unlikely		Extremely likely				
In this situation I want to do what most people important to me want	①	②	③	④	⑤	⑥	⑦

3. The following people think it is okay for me to say mean things or threaten to hurt someone who has not hurt me.

	Extremely Unlikely		Extremely likely				
My Mom	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
In this situation I want to do what my mom wants me to do.	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
My Friends	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
In this situation I want to do what my friends want me to do.	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
My Teachers	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
In this situation I want to do what my teachers want me to do.	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
My Dad	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
In this situation I want to do what my dad wants me to do.	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
Generally, most people important to me think it is okay.	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
In this situation I want to do what most people important to me want	①	②	③	④	⑤	⑥	⑦

4. The following people think it is okay for me to physically hurt someone who has hurt me.

	Extremely Unlikely		Extremely likely				
My Mom	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
In this situation I want to do what my mom wants me to do.	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
My Friends	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
In this situation I want to do what my friends want me to do.	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
My Teachers	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
In this situation I want to do what my teachers want me to do.	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
My Dad	①	②	③	④	⑤	⑥	⑦

	Extremely Unlikely		Extremely likely				
In this situation I want to do what my dad wants me to do.	①	②	③	④	⑤	⑥	⑦

Extremely Unlikely Extremely likely

Generally, most people important to me think it is okay. ① ② ③ ④ ⑤ ⑥ ⑦

Extremely Unlikely Extremely likely

In this situation I want to do what most people important to me want ① ② ③ ④ ⑤ ⑥ ⑦

SECTION 4. This section will ask you question about what you might do in the next 30 days. Please fill in the circle to indicate the degree to which you will or will not do the behaviour.

In the Next 30 days I will...	Definitely Will not			Definitely will			
1. Hit, kick, or punch someone in order to get what I want.	(A)	(B)	(C)	(D)	(E)	(F)	(G)
2. Ignore or tell my friends to ignore someone who hurts me.	(A)	(B)	(C)	(D)	(E)	(F)	(G)
3. Say mean things about someone who hurts me.	(A)	(B)	(C)	(D)	(E)	(F)	(G)
4. Ignore or tell my friends to ignore someone in order to get what I want.	(A)	(B)	(C)	(D)	(E)	(F)	(G)
5. Hit, kick, and/or punch someone who hurts me.	(A)	(B)	(C)	(D)	(E)	(F)	(G)
6. Say mean things about someone in order to get what I want.	(A)	(B)	(C)	(D)	(E)	(F)	(G)

SECTION 5. In this section you will be asked about your behaviour in the past 30 days. Please indicate the number of times in the past 30 days you have done the behaviour.

1. In the past 30 days I said mean things and/or threatened another person _____ times, because he/she hurt me.
2. In the past 30 days I hit, kicked, and/or punched someone _____ times, even though he/she had not hurt me.
3. In the past 30 days I ignored or told my friends to ignore someone _____ times, because he/she hurt me.
4. In the past 30 days I said mean things and/or threatened someone _____ times, even though he/she had not hurt me.
5. In the past 30 days I hit, kicked, and/or punched someone _____ times, because he/she hurt me.
6. In the past 30 days I ignored or told my friends to ignore someone _____ times, even though he/she had not hurt me.

SECTION 6. In this section you will be asked to indicate the degree to which you feel you could perform the behaviour.

- | | Very
Unlikely | | | | | | Very
Likely |
|---|------------------|-----|-----|-----|-----|-----|----------------|
| 1. If I was to be hurt I would be able to say mean things and/or threaten to hurt someone | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
| 2. If I was to be hurt I would be able to physically hurt someone | (A) | (B) | (C) | (D) | (E) | (F) | (G) |

3. If I was to be hurt I would be able to ignore or get my friends to ignore someone. (A) (B) (C) (D) (E) (F) (G)
4. I would be able to get what I want by saying mean things or threatening someone (A) (B) (C) (D) (E) (F) (G)
5. I would be able to get what I want by physically hurting someone (A) (B) (C) (D) (E) (F) (G)
6. I would be able to get what I want by ignoring or telling my friends to ignore someone. (A) (B) (C) (D) (E) (F) (G)
7. I would be able to please people important to me by doing what they want me to do (A) (B) (C) (D) (E) (F) (G)

SECTION 7. In this section you will be asked about the ease or difficulty in behaving aggressively. Remember that aggressive behaviour involves any actions that are intended to cause harm to another person.

1. I expect that someone will provoke me to be aggressive in the next 30 days.

Extremely
Unlikely

Extremely
Likely

(1) (2) (3) (4) (5) (6) (7)

Being provoked will make it.... to aggressively hurt someone in the next 30 days.

Much More
Difficult

Much
Easier

(1) (2) (3) (4) (5) (6) (7)

2. If I wanted to I could easily aggressively hurt someone in the next 30 days.

Strongly disagree

Strongly Agree

① ② ③ ④ ⑤ ⑥ ⑦

3. I expect to be at school in the next 30 days.

Extremely Unlikely

Extremely Likely

① ② ③ ④ ⑤ ⑥ ⑦

Being at school will make it... to aggressively hurt someone.

Much More Difficult

Much Easier

① ② ③ ④ ⑤ ⑥ ⑦

4. For me to aggressively hurt someone in the next 30 days would be?

Very Difficult

Very Easy

① ② ③ ④ ⑤ ⑥ ⑦

5. I expect to be with my family in the next 30 days.

Extremely Unlikely

Extremely Likely

① ② ③ ④ ⑤ ⑥ ⑦

Being with my family will make it... to aggressively hurt someone.

Much More Difficult

Much Easier

① ② ③ ④ ⑤ ⑥ ⑦

6. How much control would you have over behaving aggressive in the next 30 days?

Absolutely
No Control

Complete
Control

①

②

③

④

⑤

⑥

⑦

SECTION 8. This section asks you some general questions about you. The information you provide **cannot** be used to identify you.

3. What grade are you in?

10

11

12

Ⓐ

Ⓑ

Ⓒ

4. How old are you?

14

15

16

17

18

19

20

21

22

Ⓐ

Ⓑ

Ⓒ

Ⓓ

Ⓔ

Ⓕ

Ⓖ

Ⓗ

Ⓘ

5. What is your sex?

Male

Female

Ⓜ

Ⓕ

APPENDIX E: PARENTAL INFORMATION LETTER REGARDING THE MAIN
STUDY (SASKATOON VERSION)



Parent/Guardian Information *Adolescent Aggression Study*

Jonathan Brown, a graduate student from the University of Saskatchewan is conducting a research study at your child's high school. Your child is invited to participate in this study that is looking at some of the things adolescents do and think about aggression. The following provides some important information about the study. If you have any questions after reading this information please contact the researcher, Jonathan Brown at (306) 653-2502.

WHAT:

- The study is looking at what adolescents think about aggressive behaviour and how these thoughts may affect their behaviour.
- The study will gather information about adolescent attitudes and social norms towards aggression, along with the types of aggressive behaviour adolescents engage in.
- The study involves a questionnaire that will be given to participants.

WHO:

- Your child along with other high school students in Saskatoon is invited to participate in the study.

WHY:

- Information gathered from the study will help researchers to understand some of the factors that influence adolescents to either behave or not behave aggressively.
- Such information will help to develop future prevention and intervention programs that will help decrease the negative effects of aggression.

WHEN & WHERE:

- The study will take place in a couple of weeks.
- The study will be administered during class time and will take approximately 30 minutes to complete.

WHAT YOU NEED TO KNOW:

- If you give consent it does not mean that your child will automatically take part in this study. **Each child will be asked whether or not he/she wants to participate** before they may participate in the study.
- This is **not a requirement** of your child's school and **your child may refuse to participate**. If your child does not participate, he/she will not be penalized.
- **Your child will not have to answer any questions he/she is uncomfortable with.**

- Because of the general nature of questions asked in the questionnaire there are no anticipated risks to your child.

THE QUESTIONNAIRE

- The questionnaire is **completely confidential**. Teachers, parents, school administrators, and other students will not see any of your child's responses.
- **Only the researcher** (Jonathan Brown) will have access to your child's completed questionnaire. Questionnaires will be kept in a protected and confidential manner.
- Participants **cannot be identified** by their completed questionnaire, because their names will not be on them and the questions are not specific enough to provide any identifying information.
- Participants will be asked about such things as their attitudes towards aggression, what other people (e.g., their friends) think about aggressive behaviour, and what types of aggressive behaviour they have engaged in.

QUESTIONS?

- If you have any questions regarding the proposed study you can contact Jonathan Brown at (306) 653-2502.
- You may also contact Dr. Steve Wormith, supervisor of this research project, at (306) 966-6818, regarding the proposed study.
- If you have any general questions about your child's rights as a participant please contact the University of Saskatchewan Research Ethics Board through the office of Research Services at (306) 966-2084.

ADDITIONAL INFORMATION:

- Your child's school board has reviewed this study.
- This study has been approved on ethical grounds by the University of Saskatchewan Behavioural Sciences Research Ethics Board on April 14, 2005.
- The information collected will be used in Jonathan Brown's Master's Thesis.

MAY YOUR CHILD PARTICIPATE?

- If you **want** your child to participate then you don't need to do anything. The researcher will ask your child if he/she wants to participate and if they agree they will be able to participate.
- If you **do not want** your child to participate then please contact the researcher, Jonathan Brown, by either phone (653-2502) or by e-mail (jonathan.brown@usask.ca). Please provide your child's name and his/her grade so the researcher can ensure that they do not participate in the study.

Thank you for your time.

Sincerely,
Jonathan Brown

APPENDIX F: MAIN STUDY PARTICIPANT ASSENT FORM

Participant Information

Aggressive Behaviour Survey

You along with other students in Saskatoon are invited to participate in a study and share your thoughts about aggression. In the study you are going to be asked about some of the things you do along with what you think about aggressive behaviour. You are also going to be asked about what your friends, parents, and teachers think about aggressive behaviour.

The study is going to take place right now. In this study you will be asked to complete a survey that will take you approximately 30 minutes to complete. All of the answers that you give will be kept confidential. Only the researcher and his supervisor will have access to your completed survey. Your parents, teachers, or friends will **NOT** be able see any of your answers. None of the responses that you give can be used to identify you.

Your participation in this study is voluntary. You may choose not to complete this survey. This survey is not part of your required schoolwork. If you decide to participate, remember that you do not have to answer any of the questions you do not feel comfortable answering. For any reason and at any time you are allowed to stop. You will **NOT** be penalized. If you decide to stop the researcher will not use your answers and your survey will be destroyed.

Your responses will be combined with those of other students and summarized. The researcher will report on only the summarized results, which will **NOT** allow you to be identified. Only summarized reports will be made available to your school and will be presented by the researcher at academic conferences and in academic journals.

Please take a moment to decide if you want to participate. When you have made a decision, please turn to the next page.

If you would like to participate, please print your name here:

If you would like to participate, please sign your name here:

Please write the date here:

APPENDIX G: MAIN STUDY PARENT INFORMATION LETTER (KELOWNA
VERSION)



Parent/Guardian Information *Adolescent Aggression Study*

Jonathan Brown, a graduate student from the University of Saskatchewan is conducting a research study at your child's high school. Your child is invited to participate in this study, which is looking at some of the things adolescents do and think about aggression. The following provides some important information about the study. If you have any questions after reading this information please contact the researcher, Jonathan Brown at (250) 763-3503.

WHAT:

- The study is looking at what adolescents think about aggressive behaviour and how these thoughts may affect their behaviour.
- The study will gather information about adolescent attitudes and social norms towards aggression, along with the types of aggressive behaviour adolescents engage in.
- The study involves a questionnaire that will be given to participants.

WHO:

- Your child along with other high school students in Saskatoon is invited to participate in the study.

WHY:

- Information gathered from the study will help researchers to understand some of the factors that influence adolescents to either behave or not behave aggressively.
- Such information will help to develop future prevention and intervention programs that will help decrease the negative effects of aggression.

WHEN & WHERE:

- The study will take place in a couple of weeks.
- The study will be administered during class time and will take approximately 30 minutes to complete.

WHAT YOU NEED TO KNOW:

- If you give consent it does not mean that your child will automatically take part in this study. **Each child will be asked whether or not he/she wants to participate** before they may participate in the study.
- This is **not a requirement** of your child's school and **your child may refuse to participate**. If your child does not participate, he/she will not be penalized.
- **Your child will not have to answer any questions he/she is uncomfortable with.**

- Because of the general nature of questions asked in the questionnaire there are no anticipated risks to your child.

THE QUESTIONNAIRE

- The questionnaire is **completely confidential**. Teachers, parents, school administrators, and other students will not see any of your child's responses.
- **Only the researcher** (Jonathan Brown) will have access to your child's completed questionnaire. Questionnaires will be kept in a protected and confidential manner.
- Participants **cannot be identified** by their completed questionnaire, because their names will not be on them and the questions are not specific enough to provide any identifying information.
- Participants will be asked about such things as their attitudes towards aggression, what other people (e.g., their friends) think about aggressive behaviour, and what types of aggressive behaviour they have engaged in.

QUESTIONS?

- If you have any questions regarding the proposed study you can contact Jonathan Brown at (250) 763-3503.
- You may also contact Dr. Steve Wormith, supervisor of this research project, at (306) 966-6818, regarding the proposed study.
- If you have any general questions about your child's rights as a participant please contact the University of Saskatchewan Research Ethics Board through the office of Research Services at (306) 966-2084.

ADDITIONAL INFORMATION:

- Your child's school board has reviewed this study.
- This study has been approved on ethical grounds by the University of Saskatchewan Behavioural Sciences Research Ethics Board on April 14, 2005.
- The information collected will be used in Jonathan Brown's Master's Thesis.

MAY YOUR CHILD PARTICIPATE?

Please take a moment to decide if you would like your child to participate in this study. Please fill out the attached form and have your child return it to his/her teacher immediately.

Thank you for your time.

Sincerely,

Jonathan Brown

Parent Consent Form

Adolescent Aggression Study

Please complete this form and have your child return this form to his/her teacher immediately.

Please check one of the following boxes:

- I **WOULD** like my child to participate in the Adolescent Aggression Study.
- I **DO NOT** want my child to participate in the Adolescent Aggression Study

Parent/Guardian signature: _____

Date:

Please print your name:

Please print your child's name:
