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Psychosocial Sources of Aggression in Young Adults with Intellectual Disabilities

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Mental Health and Wellbeing

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Abstract

BACKGROUND: Aggression can have a wide range of damaging consequences for both perpetrators and victims. Theoretical and empirical studies into problems of aggression increasingly show the importance of social and cognitive factors in aggressive behaviour. Such research has commonly been approached through the framework of the Social-Information Processing (SIP) model. SIP explains social behaviours by the sequence of cognitive processes that occur between encountering a social stimulus and enacting a response to it. Crucially, it is apparent that particular processing styles, such as the way in which people interpret others' behaviour, play important roles in aggression. However, while SIP has long been used to explain aggression in the non-disabled population, it is only in more recent years that this approach has been applied to people with intellectual disabilities (IDs). This is important because a significant minority of people with IDs demonstrate frequent aggressive behaviour. Although several studies have already indicated that particular cognitive processing tendencies and aptitudes contribute to aggression in adults with ID, no research has considered younger people in the transition to adulthood. To this end, the present thesis sought to investigate the possible influences of certain psychosocial factors on this group of young people with mild to moderate IDs.

OBJECTIVES: To identify which specific factors to investigate, a systematic review was conducted of existing research into SIP and aggression with people who have IDs. On the basis of these findings, the thesis examined 1) the social interactions that typically elicit anger, 2) experiences of parental aggression 3) ability to discern affect from dynamic social cues and 4) beliefs about the consequences of aggressive and submissive behaviour. With the review also stressing the importance of examining aggression at specific developmental stages, the studies focused on individuals in the transition from adolescence to adulthood (between 16 and 20 years). Although this stage is thought to be important in the development of cognitive factors associated with aggression, there is little or no research in this area with young adults with IDs.

METHODS: The thesis comprised four distinct research studies. Each adopted a group-comparison design, comparing aggressive and non-aggressive young people with IDs. To evaluate the extent to which findings were specific to people with IDs, additional comparisons were conducted between aggressive and non-aggressive individuals without IDs. For Study 1, 26 young adults with IDs and 20 non-disabled young adults completed a semi-structured interview about a recent experience of interpersonal conflict. Participants were asked to describe their beliefs and feelings about the event and their subsequent response. Studies 2, 3 and 4 used data from a second phase of data collection involving 46 young people with and 48 people without IDs. Study 2 used a task in which participants were asked to rank different types of social conflict in order of provocativeness. The author developed these scenarios to reflect the experiences of conflict reported by participants in

Study 1. Participants also indicated how recently they had encountered each type of scenario. Study 3 used motion-capture stimuli of people walking in different emotional states to examine whether groups differed in how they encode dynamic social cues. Study 4 used provocative vignettes to examine whether aggressive young people with IDs expect different outcomes from aggressive and submissive responses to such scenarios.

RESULTS: Study 1 found that participants with IDs were more likely to encounter conflict with strangers or peers outside their friendship group. They were also more likely to describe incidents of aggression and to characterise people with whom they were in conflict globally as "bad" and to perceive their actions as being personally directed at them. Study 2 did not suggest that experiences of being victimised by peers were more common for people with IDs, but did show that aggressive individuals were more likely to encounter incidents of physical aggression from peers. Parental conflict was the most recently encountered, but was perceived to be the least provocative form of conflict for all groups. In Study 3, no group differences were found in accuracy or response tendencies for the emotion recognition task. Aggressive and non-aggressive participants with IDs in Study 4 did not predict different outcomes form aggression and submission. However, the aggressive participants without IDs predicted more positive outcomes from aggression and more negative outcomes for submission. While aggressive participants with IDs were more likely to give aggressive responses, they were just as likely as the non-aggressive group to respond actively (assertively or aggressively) rather than passively.

CONCLUSION: The findings of this thesis, viewed from the perspective of the SIP model, suggest that there are key cognitive and contextual differences between individuals who show frequent aggression, both with and without IDs. Although, somewhat surprisingly, emotion recognition skills did not appear to be associated with a tendency toward aggressive behaviour, the non-ID aggressive and non-aggressive groups differed in their anticipated outcomes for aggressive and submissive behaviour. The context in which conflict occurred also appeared to differ between those young people with and without IDs.   However, the absence of some predicted findings from these studies may be related to methodological shortcomings; these possible limitations are considered, and directions for future work are suggested. Applications for clinical practice and policy are also discussed and recommendations for future research are given.

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Declaration

"I hereby declare that I am the sole author of this thesis, except where the assistance of others has been acknowledged.

This thesis has not been submitted in any form for another degree or personal qualification"

Peter Larkin. August 2011

Contents

PART I

THEORETICAL INTRODUCTION AND REVIEW

Chapter 1 Introduction & Overview

A significant minority of people with mild to moderate intellectual disabilities (IDs) display frequent aggressive behaviour (Sigafoos et al, 1994, Murphy et al, 1993; Gardener & Moffat, 1990). It is becoming increasingly clear that these problems arise from a variety of psychological tendencies and social factors (Jahoda et al, 2001; Lemerise & Arsenio, 2000). However, while psychosocial models have long been used to explain aggression in the non-disabled population, it is only in more recent years that such an approach has been applied to people with IDs (Dodge, 1980). Consequently, further research in this area is required for a clearer picture of aggression in this group to be developed. To this end, the present thesis seeks to examine how certain psychosocial factors might underpin aggression in people with IDs.

In order to provide a context for the main research chapters, Chapters 1 to 6 offer an introduction to the aggression literature and outline how aggressive behaviour typically manifests in people with IDs. The points raised in these chapters are then used to develop a rationale for the theoretical approach and general research focus of the thesis.

The main body of the thesis comprises one systematic review and four research studies. The review evaluates the existing evidence for psychosocial sources of aggression in this group. It also makes recommendations for future research in this field which, in turn, provide the research aims of the four subsequent studies. The first study reports on data from semi-structured interviews of 46 young adults with and without IDs. The remaining studies use data from a second phase of data collection involving 93 young people with and without IDs. For these final studies, the author developed a number of innovative measures, including vignette and computer-based tasks. The development of these tasks will be outlined. Finally, the findings of the research studies will be discussed in the context of the existing empirical and theoretical literature and relevant conclusions for theory and practice will be drawn.

It is thought that the nature of aggressive behaviour and underlying factors might be different for people with more severe IDs (Emerson et al, 1997; Jahoda et al, 2001). For this reason, this project concentrates on people with milder IDs. It also focuses on people during the transition from adolescence to adulthood, a key developmental stage underrepresented in the existing literature.

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Chapter 2. Interpersonal Aggression

People can be aggressive for a great many reasons. Accordingly, researchers have attempted to explain human aggression from a wide range of perspectives. Generally, these theories and models have focused on particular aspects of aggression such as predisposing factors, how aggressiveness might be learned and how cognitive processing might underpin social behaviour. However, the reality is that aggressive behaviour will typically stem from a combination of these different factors.

The present thesis is specifically concerned with aggression in people with IDs. However, given the complex nature of aggression, this initial chapter will be spent offering a general account of the theoretical and empirical literature regarding aggression. This will provide an appropriate context for discussing the literature on aggression in people with IDs.

2.1 What is Aggression?

Broadly, aggression can be defined as any behaviour intended to hurt or harm someone. This applies to physical or verbal acts and generally includes attempts to cause either psychological or physical harm. However, aggression is a term used regularly in research, and everyday language, to describe a wide range of human behaviours. These can range from subtle interpersonal acts, such as scowling, to large-scale group behaviours like gang violence and warfare. As such, it is worth clarifying the usage of several common terms pertaining to aggression before discussing the existing research literature.

VIOLENCE: The term violence is often applied to acts of aggression, normally of a physical nature, where there is the intention to cause severe harm to another person. As violence is a class of aggressive behaviours, all acts of violence are aggressive but not all incidents of aggression are violent (Anderson & Bushman, 2002). For example, most would view attempted murder as an act of both aggression and violence because of the intent to inflict severe physical harm on the other person. On the other hand, an incident where one person pushes another may be considered physical aggression but not violence.

SOCIAL AGGRESSION: In some definitions of aggression, it is stipulated that there must be an intent to cause harm as a proximate result of the action (e.g. Anderson & Bushman,

2002). However, the term can also be extended to social aggression where rather than hurting the victim directly, the aggressor attempts to damage their relationships or status with others through non-confrontational means (Heibron & Prinstein, 2008). For example, spreading malicious rumours about another person might be considered a form of social aggression.

REACTIVE & PROACTIVE AGGRESSION: It is clear that aggression can refer to actions that seek to exact different forms of harm on others. It is also commonly classified by the underlying motivation behind the given action. In particular, aggressive behaviour is sometimes viewed as being either reactive or proactive. Reactive or hostile aggression stems from anger with an underlying goal of harming another person (Myers et al, 2002). In proactive, or instrumental aggression, the immediate aim is still to hurt but purely as a means to achieving another goal (Myers et al, 2002). An example of reactive aggression would be if one person felt insulted by another and, purely out of anguish and anger, punched the second person in the face. In this situation, the underlying motive behind the action could be to hurt the other person. Whereas, if the individual had punched the other person to achieve another goal (e.g. to steal his hat) then hurting him might be considered an instrumental act to achieve this goal.

In the existing literature, these two forms of aggression are sometimes presented as wholly distinct phenomena (Barker et al, 2006). To an extent, this view is supported by animal studies where different parts of the brain have been related to offensive and defensive behaviours (Adams, 2006). Moreover, in humans, evidence suggests that proactive and reactive aggression may be underpinned by different patterns of cognitive processing (Lansford et al, 2006).

However, it could also be argued that all acts of aggression are in fact instrumental to different extents. It is thought that an individual is being reactively aggressive when their behaviour is in response to perceived provocation and that harming the other person is the ultimate aim of the behaviour. However, it might be argued that there remains a question of why perceived provocation would make the individual want to hurt the other person. It might be that in a state of anger, the reactively aggressive individual feels that lashing out would make him feel better in some way, perhaps by allaying a sense of insecurity (Jahoda et al, 2001). It is possible then that even in acts of aggression that are essentially reactive in nature, there are actually underlying reasons why one person is trying to hurt the other. Certainly, it is clear that there is some overlap between so-called proactive and reactive

forms of aggression. However, while they may not be distinct phenomena, they remain useful typologies for describing underlying differences between aggressive behaviours (Jahoda et al, 2001).

COALITIONARY AGGRESSION: It is worth acknowledging that as well as referring to the behaviours of individuals, aggression can be collective actions by groups of people, such as in warfare or gang violence. However, given that this thesis only aims to examine factors underpinning problems of aggression in individuals, coalitionary aggression will not be discussed.

ANGER: Anger is a term that can be commonly confused with aggression. Where aggression is an action with the intent to cause harm, anger is a feeling of antagonism towards another, normally in responses to perceived insult or provocation (Merriam-Webster, 2011). In research, anger is often defined as a state of emotional and physiological readiness to aggress, generally accompanied with hostile cognitions towards another person (Novaco, 1994). As such, it often plays a crucial mediating role in reactive aggression. This important relationship between anger and aggression will be discussed in greater detail later in this chapter.

USAGE OF 'AGGRESSION' IN THIS THESIS: As illustrated above, the term aggression can refer to physical actions or to verbal acts, to actions directed at the target or indirect acts of 'social sabotage', to individual behaviours or to group behaviours and to actions enacted for an array of different reasons. However, in the present thesis, the term aggression will generally be used to convey a narrower meaning.

As the remit of the thesis is to examine interpersonal aggression in people with IDs, the term aggression will be intended to mean acts of aggression by individuals rather than groups. Unless stated otherwise, aggression will refer to both proactive and reactive forms of aggression. This reflects the precedent set in previous studies into aggression in people with IDs, where little concern has been given to distinguishing between proactive and reactive aggression. That said, the thesis will address the question of such distinctions at certain points.

For the most part, the term 'aggression' will refer to direct aggression rather than social aggression. One reason for this is that it is difficult to obtain an accurate measure of social aggression due to the indirect nature of such behaviour. It might be predicted that those

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who are more covert in their aggression may be less forthcoming about admitting to such behaviours in self-report measures. Similarly, parent or staff-report measures may be of limited use as social aggressors might tend to avoid demonstrating their behaviour in front of authority figures. In addition to the methodological challenges of measuring indirect aggression, some researchers argue that social aggression and direct aggression should perhaps be seen as distinctive phenomena (Crick & Grotpeter, 1995).

2.2 Why are People Aggressive?

It can safely be said that the term aggression can be applied to a wide variety of behaviours. Similarly, the reasons why people enact such behaviours are equally numerous and varied. Research has taken a multitude of approaches to examining why some people are more aggressive than others including several biological, developmental and information-processing accounts. In this section, the main theoretical conceptualisations of aggression will be discussed.

2.2.1 Aggressive Behaviour Across The Lifespan

In most cases where people present with problems of aggression, there will have been evidence of behavioural problems at earlier stages in their development (Brame et al, 2001). Although there are important exceptions to this, it is clear that aggressiveness commonly develops over the lifespan rather than suddenly emerging with no preceding symptoms. As such, a fitting starting point to this overview of aggression is to examine how aggression manifests at the various stages of human development.

2.2.1.1 Infancy

From around three months of age, babies start to express facial configurations comparable with those of adults experiencing anger (Izard et al, 1995). A few months later, babies begin to develop concepts of causal relations and by 12 months, events that cause conflict in older children produce protest or retaliation (Caplan et al, 1991). Babies with a "difficult temperament" (particularly difficult to soothe, seem unsettled) are more likely to have a

conflictive relationship with their mother by toddlerhood (Thomas et al, 1968; Lee and Bates, 1985). Weinberg & Tronick (1997) found that boys were more emotionally labile than girls, even at very early infancy, and express their positive and negative emotions more frequently than girls. Furthermore, they suggested that at this early stage, girls are already better at regulating their emotional states.

2.2.1.2 Toddlerhood

Aggressive behaviour towards peers and adults is typically observed by the time a child is two or three years of age. Conflict, often in the form of temper tantrums is evident but not particularly frequent (Shantz, 1987). Aggression at this early stage is rarely of a personal nature and toddlers rarely express strong emotions before conflict (Caplan et al, 1991). Through small group studies, Caplan et al (1991) also revealed that groups of toddlers with a female majority are more likely to come to conflict than groups with a male majority. Interviews with parents suggest that they may sometimes be gender-biased when identifying bad behaviour in toddlers. While they tend to report more bad behaviour in boys, teacher reports suggest no major gender differences (Fagot & Kavanagh, 1990).

2.2.1.3 Early School Years

At the time when children are typically starting school (between 3-6 years old), gender differences in levels and styles of aggression becoming more apparent. Boys start to show more physical aggression than girls and it is possible that females start to use more indirect or relational aggression such as ostracism and alienation (Coie & Dodge, 1997; Bjorkqvist et al, 1992). However, remote recordings of playground interactions suggest that girls do employ physical aggression but are more likely than boys to hide it from adults (Pepler & Craig, 1995). These authors also found that bullying was just as frequent in girls as in boys but that girls are less likely to admit to it.

Interpersonal aggression in girls tends to decrease during the transition from early to middle childhood as they hone their interpersonal skills. However, while many boys follow the same trend as their female peers, some continue to have problems controlling aggression (Loeber & Hay, 1997). It is also at this stage that symptoms of conduct disorder

may present themselves through severe aggression like cruelty to animals or other children (A.P.A., 1994).

2.2.1.4 Adolescence and Adulthood

Adolescence is seen as a period of major change in the nature and severity of human aggression. An increase in physical strength during adolescence results in an increase in the capacity to harm through physical aggression. This coincides with an increase in the use of weapons in aggressive acts. A likely consequence of this is that rates of serious violence also increase during this period (Berkowitz, 1994; Reiss & Roth, 1993; Arria et al 1995). Certainly, the marked increase in juvenile homicide in the US during the 1990s seemed to stem from the increase in gun-related killings (Snyder & Sickmund, 1995). This trend is particularly apparent in males living in inner city areas, possibly a result of differences in norms between sub-cultures and peer groups (Sheley & Wight, 1993; Moffitt, 1993).

A second, and probably related change, is the marked increase in collective violence by peer groups, often involving coercing younger children into doing things against their will. There is a tendency for members of school peer groups to share similar antisocial tendencies and levels of aggression (Cairns & Cairns, 1994). Early adolescence also sees the emergence of organized gangs that nurture a strong in-group identity and engage in violence, often with other gangs (Howell, 1995; Klein, 1995). Group fighting is more likely than fights between individuals to result in injuries (Farrington 1982). Adolescent gangs operate both in school as well as their neighbourhoods with 40% of US ninth graders reporting the presence of gang activity in their schools. The presence of gangs in an area increases the rates of delinquency and violence as well as the availability of guns (Bjerrgaard & Lizotte, 1995; Howell, 1995).

There is also a rise in the rates of violence towards parents and teachers in mid to late adolescence (Callahan & Rivera, 1992). Another development is an increase in cross-gender aggression. At previous stages, boys and girls would typically have socialised in same-sex peer groups and would therefore have tended to engage in same-sex conflict, with girls' conflicts growing less violent over time (Cairns & Cairns, 1994). However, with adolescence heralding the dawn of dating, cross-gender conflict increases, though girls report this more than boys. Cross-gender violence, including sexual assault, also increases.

Some evidence suggests that adolescence may also see the onset of aggression in individuals that were previously not observed to be aggressive (e.g. Nash & Kim, 2007; Loeber & Stouthamer-Loeber, 1998; Loeber & Hay, 1997). In part, this could be a result of the increased influence of peer group norms and the emergence of collective aggression at adolescence (Cairns & Cairns, 1994; Howells, 1995; Klein, 1995). It has also been argued that the emergence of aggression in previously non-aggressive individuals may be related to exposure to life stressors and to mental ill health (Loeber & Hay, 1997). Late-onset aggression has also been linked to school drop-out and marital instability (Windle & Windle, 1995). However, despite these findings, other studies examining the developmental trajectories of aggression have failed to find sizeable subgroups of participants with an adolescent onset of aggression (Nagin & Tremblay, 1999; Brame et al, 2001).

2.2.2 Models of Aggression

2.2.2.1 Biological and Evolutionary Theories

Although this thesis focuses on the psychosocial sources of aggression, it is important to acknowledge other factors in aggression. Some of the most influential theories of aggression are rooted in human biology and how we have evolved as a species. Not only do they provide a historical context to psychosocial perspectives but they permit a more comprehensive understanding of aggressive behaviour.

INSTINCT

The English philosopher Thomas Hobbes argued that without the civilising influences of society, humans would be essentially wild and violent in nature (Hobbes, 1651). Hobbes' proposal of an innate propensity in humans to be aggressive is sometimes seen as a starting point for several influential ethological accounts of aggression.

Freud postulated that aggression stems from a deeply rooted self-destructive urge, sometimes called thanatos or the 'death drive' (Freud, 1920). The death drive can be

defined as an urge towards returning to inorganic matter. He suggested that forces generated by the death drive can build up, like the air pressure inside an inflating balloon, to a point where they must release. He argued that aggression was a release of this urge to self-destruction redirected at others. This idea that aggressive energy builds up, exerting increasing pressure to be released is often termed a 'hydraulic model' of aggression.

Konrad Lorenz (1966) also believed that aggressiveness was an underlying drive or instinct and defined aggression as 'the fighting instinct in beast and man which is directed against members of the same species'. However, Lorenz's model differed from Freud's in that it stressed that aggressive behaviour was always contingent on the environment. In other words, aggression is not simply the random spilling out of psychic energy as Freud proposed but a reaction to particular circumstances. He also approached aggression from a more ethnological viewpoint, stressing that aggression was an adaptive propensity that had evolved in humans and other animals to facilitate survival. Animal studies show that aggressiveness could be a way of demonstrating a willingness and capacity to provide safety or protect resources; both attractive traits to a prospective mate (Lorenz, 1976; Verner, 1977).

The popularity of instinctive explanations of human aggression has faded in recent decades. This is largely because such theories explain the existence of human aggression but are rather less adept at explaining individual and group differences in aggressiveness. Furthermore, some have questioned the value of such theories arguing that it is impossible to measure a drive (Baron, & Richardson, 1994). Berkowitz (1993) added three further criticisms, pointing out that a) neuroscience has provided no evidence that aggressive energy collects within the body b) aggression is rarely found to be spontaneous and c) there is more than one type of aggression (Buss & Shakelford, 1997).

Although instinct theories of aggression may stop well short of offering a comprehensive account of human aggression, this should not detract from the contribution that they make to the understanding this phenomenon. At the very least, they demonstrate that deeply rooted psychological factors have a substantial influence on aggressive behaviour.

EVOLUTIONARY THEORY

Whereas instinct theories sought to describe the propensity to be aggressive, evolutionary theories account for why humans might have developed such propensities in the first place. It is widely accepted that humans have evolved to be aggressive because aggression has proven to help survival and procreation. If our more aggressive ancestors had a better chance of procreating and passing on their genes, aggressive traits would, thereby, have become increasingly widespread and pronounced in our species (Buss & Duntley, 2006).

Buss & Shakelford, (1997) have suggested several key functions of aggression that might have contributed to its emergence in humans. Historically, humans have demonstrated the tendency to stockpile valuable resources such as food, water and weapons (Buss & Duntley, 2006). Aggression might be one effective way of appropriating the resources from rival groups or individuals. Physical aggression would also be a way of inflicting costs on rivals, diminishing their ability to compete for mates and for resources (Buss & Duntley, 2006). Aggression could also become a means of defense for those under attack and provide a deterrent from future attacks. In addition to competing with rivals, the threat of aggression could deter mates from infidelity and thus reduce the resources spent on genetically unrelated children (Buss & Shakelford, 1997). In some cases, it may also be a means of reproducing with unwilling mates. Finally, aggression can be a way to cultivate social status and power. Historically, a large proportion of societies have viewed exposure to danger and the killing of enemies as courageous and even virtuous (Chagnon, 1983; Hill & Hurtado, 1996).

While the evolutionary roots of aggression are apparent, it is equally clear that the potential functionality of aggression is not limited to the historical context. Acts of instrumental aggression such as muggings and territorial gang violence are modern day examples of aggression as a means to an end. Indeed, one of the main functions of Criminal Justice is to deter such criminal acts of aggression by reducing their apparent utility (Shelling, 1966). For instance, if a would-be mugger feels that the potential negative consequences of mugging outweigh the potential benefits, they might decide that mugging is not so adaptive after all.

At a more subtle level, aggressiveness can still be an effective way of obtaining social status. Again, this can be observed in modern gang cultures where social capital is often gained through violence (Campbell, 1993). However, it can also be seen in the wider

population. Evidence suggests that some preadolescents and adolescents successfully use aggression to obtain peer approval and social status (Hawley, 2003). Indeed, in other research, a degree of aggressiveness was reportedly considered socially attractive to peers (Hawley and Vaughn, 2003). In short, while most people might accept that aggression is harmful to society, for some people, it may continue to be an effective way to get what they want.

GENETIC INFLUENCES

Given the evolutionary roots of aggressiveness, it is perhaps not surprising that there is a degree of heritability to aggression. For centuries, humans have demonstrated this is true of other animals, such as cocks and dogs, by intentionally breeding them for aggressiveness. This has been replicated in the laboratory in mice and other animals (Lagerspetz, 1979). In humans, identical twins have been found to be more likely to report having similar violent tendencies than non-identical twins (Coccaro et al, 1997). There is also evidence that aggression is linked to specific genetic deficiencies. It appears that people who are genetically deficient in enzymes that catalyse the breakdown of a number of neurotransmitters are less averse to being aggressive (Shih & Thompson, 1999).

BIOCHEMICAL FACTORS

It is important to acknowledge the long list of hormones, neurotransmitters and neuromodulators that appear to influence human aggression (Nelson & Chiavegatto, 2001). For a long time, people have associated the male sex hormone testosterone with aggression in men. Indeed, there is some evidence that testosterone levels have some influence on aggressiveness (Geen, 1998). However, while the case for its influence on aggression in other mammals is well supported, evidence for its influence in human males is surprisingly equivocal. Testosterone levels tend to be higher in prisoners convicted of unprovoked violent crimes than those convicted of non-violent crimes (Dabbs et al, 1995). Investigations have shown that teen boys with higher testosterone are more prone to delinquency and to responding aggressively to provocation (Archer, 1991; Olweus et al, 1988). Yet a review by Martin Ramirez (2003) implies that testosterone's influence on aggression is subtle, perhaps affecting aggression indirectly by increasing dominant or competitive behaviour and that it is dependent on psychosocial effects.

Among other proposed biochemical influences, it appears that the neurotransmitter Serotonin plays a role, with low levels often being found in violent children and adults (Bernhardt, 1997). Finally, intoxicants such as alcohol and illicit drugs appear to have a major role in facilitating violent aggression. In Scotland, 70% of all Accident and Emergency admissions for assaults have been related to alcohol (NHS, 2006).

2.2.2.2 Emotion

FRUSTRATION AND ANGER

In one of the earliest general theories of aggression, John Dollard proposed that frustration (blocking of goal directed behaviour) inevitably leads to aggression; be it towards the source of frustration or towards another target via displacement (Dollard et al, 1939). However, studies did not support this absolute causality, showing that frustration only sometimes resulted in aggression (Burnstein & Worchel, 1962). Berkowitz (1978) proposed that when we feel a frustrating situation could (or should) have been avoided, our frustration turns to anger. In that anger is by definition "an emotional readiness to aggress", he suggested that frustration can indeed lead to aggression, but through anger.

Anger is still seen as having a key mediating role in reactive aggression. However, anger can not fully explain aggression as it does not account for why 1) a situation might elicit anger in one person and not in another, and 2) why one person might control his anger while another might resort to aggression. One factor in these individual differences is emotional regulation, a skill that is usually in development by middle childhood. The relevance of this skill is apparent when one considers the effectiveness of anger-management training on reducing aggression (Beck & Fernandez, 1998).

An individual's ability to control how they react to their emotions is mitigated by their temperament or how inherently 'emotionally reactive' they are. As mentioned previously, the strong genetic influence on aggression is obvious in the effects of selective breeding of animals. Furthermore, individual differences in human temperament emerge in infancy (Thomas et al, 1968).

EXCITATION TRANSFER MODEL

Dolf Zillman, criticized the 'drive' theories of Lorenz and Freud, claiming that drives were intrinsically un-testable constructs (Baron & Richardson, 1994). He proposed a similarly hydraulic model where an accumulation of emotion, rather than forces associated with innate drives, resulted in aggressive behaviour (Zillman, 1983). His excitation-transfer model stresses that individuals carry physiological arousal resulting from one stimulus forward into other situations. The transfer is dependent on three conditions 1) the emotional arousal from the initial stimulus has not dissipated, 2) the emotional arousal is misattributed to the second stimulus and 3) the levels of arousal has not already reached an excitatory threshold before encountering the second stimulus.

EMPATHY AND GUILT

In addition to anger and frustration, it is thought that other emotions may have a role to play in aggression. In particular, it has been suggested that a sub-group of aggressive individuals demonstrate less empathy or guilt. This view builds on the idea that some aggressive people are more goal-driven (instrumental) in their aggressiveness while others act more reactively to their surroundings. It may be that anger is an important mediator of more reactive forms of aggression but is less important in cases of 'cold and premeditated' forms of aggression. Instead, proponents suggest that this very coldness is an affective factor in cases of more instrumental forms of aggression. They argue that individuals whose aggressive behaviour is more instrumental in nature demonstrate less guilt or empathy (Orobio de Castro et al, 2005). Conceptually, for an individual to be mindfully aggressive to someone in order to achieve a goal, that goal must matter more to them than the harm that they expect to inflict on the other person. It would therefore follow that if a person had diminished levels of empathy or guilt, they may attach less value to the potential harm to others caused by aggressive behaviour and, thereby, be more likely to see aggression as a viable way of attaining goals. Evidence suggests that boys who behave in a proactively aggressive manner show lower levels of guilt and have more favourable views of aggression than boys that demonstrate reactive aggression (Arsenio et al, 2009).

2.2.2.3 Environment

So far, this section has discussed how innate factors might contribute to aggression in some people. However, several models have sought to portray aggressiveness as a result of an individual's environment and experience.

COGNITIVE NEO-ASSOCIATION THEORY

In a sense, Cognitive Neo-association theory of aggression can be seen as an extension of emotion-based theories of aggression. However, rather than implying a direct causal relationship between emotion and aggression, it stresses the importance of the experiences that lead to the emotions (Berkowitz, 1993). The theory states that aversive events commonly elicit negative feelings, thoughts and memories linked to deep rooted "fight or flight" tendencies. It suggests that cues present during an aversive event can then become associated with these negative feelings and thoughts (Anderson & Bushman, 2002). Over time, aversive experiences increase the number and the strength of the associations between particular environmental cues and tendencies towards aggression (fight) or fear (flight) (Anderson & Bushman, 2002). Consequently, exposure to particular aversive events increases the likelihood that future experiences of such events will elicit aggressive impulses.

SOCIAL LEARNING

In its earliest conceptions, Social Learning theory built on the behavioural notion of conditioning. Rotter (1954) proposed that aggressiveness is dependent on the outcomes experienced by the actor as a result of aggressive behaviour. If aggressive behaviour reaps largely positive results, then the aggressive behaviour is reinforced. Equally, if aggressive behaviour results in negative consequences, the behaviour is inhibited

Albert Bandura (1997) developed this theory, stating that people learn aggression by observing others' behaviours and evaluating the consequences. He famously showed that children who observe an aggressive attack on an inflated doll by the experimenter are likely to replicate the attack when frustrated and left in a room with several toys including the doll. This revision of the Social Learning theory is important not only because it

introduces the idea of modelling the behaviour of others, but it give some consideration to more cognitive forms of learning.

FAMILY: MODELLING AND ATTACHMENT

A large body of research shows that family can influence an individual's aggressiveness in a number of different ways. The majority of studies have focused on the parent-child dyad where the parents' higher social status and power gives their behaviour enormous influence over their child's development (Williams et al, 2007). The insecure attachment of a mother to her infant predicts later behavioural problems, frequently taking the form of aggression. Maternal depression at this stage may also affect a child's aggressiveness, as rated by their parents (Sharp et al, 1995). Studies frequently show that child-parent relationships involving frequent coercion or hostility result in more aggressive and antisocial behaviour from the child (e.g. Conger et al, 1994). This fits with studies into disciplinary styles which suggest that physical punishment and coercive interaction are related to later aggression (e.g. Farrington, 1978). Covariance in aggression between siblings suggests that the sibling dyad also has an influence (Bullock & Dishion, 2002). Specifically, same-sex dyads are more likely to have frequent conflicts than mixed-sex dyads (Hay et al, 1993). However, extensive quarrelling is frequent between mixed and same-sex siblings and is not necessarily an indicator of problematic aggression in itself (Dunn, 1993).

SOCIAL DEPRIVATION

There are several other potentially important environmental factors that are not necessarily a part of any cohesive model of aggression. For example, social deprivation has been associated with aggressiveness. Theoretically, societal poverty in and of itself may influence instrumental aggression by increasing competition for limited resources (Wilkinson, 2004). From a social learning viewpoint, individuals living in environments where there are frequent threats to their wellbeing might find aggression to be the most effective way of avoiding harm (Richters & Cicchetti, 1993). For example, some pupils at schools where fighting and victimization are common might find that demonstrating aggression prevents them from being bullied. Over time, the successfully elimination of threats through aggression might reinforce the use of such behaviours as a means to resolve interpersonal problems.

In addition to these factors, recent research suggests that much of the association between social deprivation and aggression might be accounted for by the low social status ascribed to members of socially deprived groups. In having low social status, an individual is deprived of social affirmation that can buffer self-esteem during difficult times (Wilkinson, 2004). They may, therefore, become more vulnerable to perceived threats to their self-esteem and perhaps more likely to retaliate through aggression. This may be exacerbated by, and perhaps even be a contributing factor to, the relative prominence of aggressive norms in socially deprived groups (Wilkinson, 2004).

2.2.2.4 Cognitive Processing Models

The models discussed to this point have sought to explain either the human propensity to be aggressive (e.g. instinct, evolution) or how individuals become aggressive (e.g. social learning). Other recent approaches to aggression have focused on how the cognitive processing of an individual in the moments leading up to an act of aggression, might underpin their behaviour.

SOCIAL INTERACTION THEORY

Drawing on evolutionary accounts of aggression, Tedeschi & Felson (1994) suggested that acts of aggression might be viewed as exertions of social influence. In their Social Interaction theory, aggression or 'coercive behaviour', is seen as a means to changing the behaviour of others, generally to obtain a desired outcome. These outcomes can include the procurement of objects of value, exacting revenge and the actualisation of social and self-identities (e.g. toughness; Anderson & Bushman, 2002). The individual weighs up the predicted costs, benefits and probabilities of achieving the coercive behaviour before deciding whether or not to enact it.

SOCIAL INFORMATION PROCESSING

Recent research into the cognitive factors that lead to aggressive behaviour has often been approached through the framework of a model called Social Information Processing (SIP). SIP aims to explain social behaviours by the sequence of cognitive processes that occur between encountering a social event and enacting a response (Crick and Dodge, 1994; Huesmann, 1998; Lemerise and Arsenio, 2000). In the first two steps, the individual encodes and interprets the available social information (i.e. "what happened" and "why it happened"). Next is the clarification of goals (i.e. "what I want to happen now") followed by the generation and retrieval of possible responses. Finally, the individual chooses and then enacts their response.
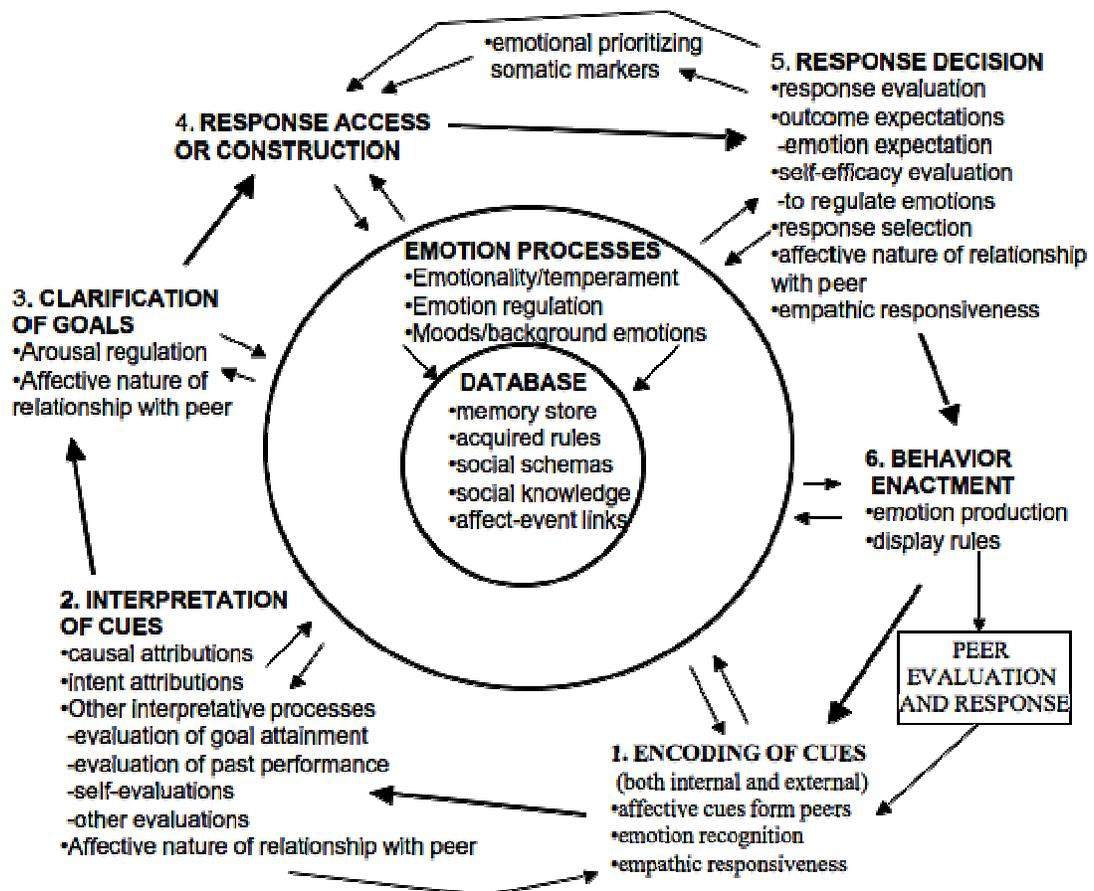
Figure 2.1 Lemerise & Arsenio's (2000) social information processing model of children's social adjustment (redrawn form original image). This relatively recent formulation of SIP incorporates temperament and emotional states into the earlier cyclical model of Crick & Dodge (1994), Psychological Bulletin, 115, p.74

Using this framework, studies have identified specific cognitive tendencies and biases that underpin aggression. Each of these factors is associated with one of the six main stages of processing depicted in the model (see Figure 2.1 above). For example, at the first stage of

SIP, when the information present in a social interaction is encoded, it is thought that aggressive individuals may demonstrate biases towards negative cues including angry or negative facial expressions (Dodge, 1980). Furthermore, many studies have shown that aggressive individuals are then more likely to interpret the actions of others as being hostile (e.g. Dodge, 1980, Dodge, 1986; Orobio de Castro et al, 2002).

Once they have developed their own impression of a social event, aggressive individuals may be more motivated to achieve instrumental goals than to seek a fair outcome (Pert et al, 2008). Then, on considering how to respond to the situation, aggressive individuals may expect more positive outcomes from aggression in terms of how it would make them feel, whether it would resolve the situation and how it would be appraised by others (Fontaine & Dodge, 2006). It is also thought that beliefs about the moral acceptability of response options might affect decision-making (Fontaine & Dodge, 2006; Arsenio et al, 2009). Similarly, an individual's beliefs about how easily they could enact certain response options is also likely to affect how they choose to respond to social situations (Fontaine & Dodge, 2006).

The SIP model thus provides a framework on which to build a coherent picture of the various cognitive tendencies that underlie aggression. It also takes into consideration that all individuals enter into social situations with predispositions and knowledge from previous experiences. These schema and tendencies guide each of the six steps of processing. Furthermore, each new experience will be adding further to this 'database' and thus affecting future processing. More recent formulations of SIP also account for the mediating roles of temperament and emotional arousal in processing (Lemerise and Arsenio, 2000). As such, the model offers an account of how an individual might develop the cognitive tendencies that it identifies as underpinning aggression.

One final and defining feature of current SIP models is that they are non-linear in nature. Since real social encounters tend to involve multiple and overlapping social events, the model is depicted as cyclical, with the sequence constantly recycling and updating (see Figure 2.1). Also, 'feedback loops' between stages reflect continued bi-directional interaction between the different cognitive processes as the social interaction develops. This reflexive dimension to SIP, combined with its neat structure on which different factors can be mapped, allows for a powerful heuristic model of the complex array of cognitive processes that underlie aggressive behaviours.

2.2.2.5 General Aggression Model (GAM)

There are, then, a great many models of aggression, that generally offer useful accounts of certain aspects of aggression. Bushman & Anderson, (2002) have offered a model that attempts to integrate biological, developmental, social and cognitive dimensions of aggression in one unified model. At the core of the model is the idea that environmental and personality factors (inputs) combine to produce cognitive, emotional, physiological and behavioural outcomes (Anderson & Carnagey, 2004). Figure 2.2 below shows how these factors culminate in the enactment of a chosen behaviour:
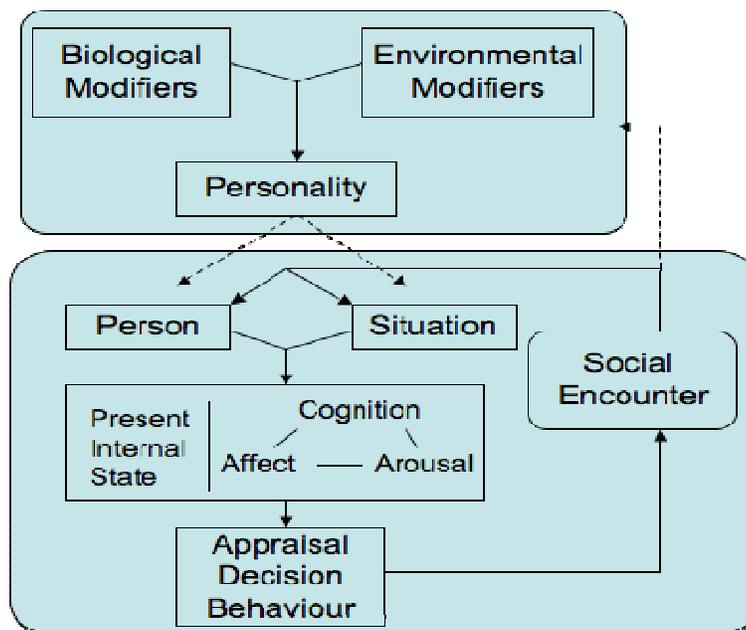
Figure 2.2 The Overall View of the General Aggression Model (redrawn from original figure in Bushman & Anderson, 2002)

As Figure 2.2 illustrates, the most general schematic of GAM has a lot in common with the SIP model. It is a dynamic, cyclical representation of how the various processes at play during a social interaction lead to behaviour. However, The GAM model also includes additional diagrams expanding on the personality and the appraisal/decision boxes in Figure 2.2. These give a more detailed explanation of how underlying biological factors as well as experiences can shape the schema that steer an individual's processing during a social situation. In doing so, they also add a developmental element to their model.

The GAM model is a rather complicated model requiring several domain-specific diagrams to explain fully. However, the model can be seen as a thoughtful way of considering how

existing biological, developmental, social and cognitive models of aggression might interact with each other.

2.3 Problems of Aggression

2.3.1 When Does Someone Have a Problem of Aggression?

It can be concluded that the propensity to be aggressive is a natural phenomenon that is intrinsic to the human experience. Indeed, recent researchers have gone to pains to stress the potentially adaptive nature of aggressiveness in certain domains of the modern human world (Hawley and Vaughn, 2003). For example, it has been found that a degree of aggression in school pupils can yield peer approval and social status (Hawley, 2003; Hawley and Vaughn, 2003). Certain forms of aggression might also be considered acceptable or, indeed, desirable, in some sports and business settings. On the other hand, because acts of aggression concern intentional harm to others, they are generally viewed as moral transgressions that must, therefore, be considered to be conventionally maladaptive (Arsenio & Lemerise, 2004).

With somewhat conflicting social norms regarding the acceptability of aggression, agreeing on the point at which an individual's aggression should be considered a problem it is a delicate task. This is, of course, a particularly pertinent concern when writing a thesis about people with problems of aggression. Although aggression is a key symptom of specific disorders such as Oppositional-Defiant Disorder and Conduct Disorder, it is not a diagnosable disorder in itself and can be a significant problem for a broad range of individuals with and without any diagnosis (APA, 2000). Perhaps the simplest answer then is that an individual has a problem of aggression when their behaviour becomes a recurring source of significant difficulty for themselves or for others.

Although it is not a diagnosable disorder in and of itself, researchers interested in people with problems of aggression have to find meaningful criteria for including participants in their studies. It is common for the 'aggressive' groups of studies to be individuals enrolled in anger-management classes. The benefit of this recruitment method is that to be enrolled in such programmes, each individual will have been identified as having problems with anger or aggression. However, it also means that the resultant sample will only include

individuals who seek help. The sample may also exclude those whose aggressive behaviour is of a more instrumental nature and consequently do not have particular problems with anger.

Other researchers concentrate on offenders, often those that have committed violent crimes (e.g. Taylor and Novaco, 2004). However, as aggression can be a significant problem without ever being likely to lead to criminal prosecution, such research is best seen as examining aggression in a specific subpopulation.

A third way of classifying the aggressiveness of participants is through post-hoc measures including self-report and family-report questionnaires. Using such measures, researchers can gain an indication of the nature, the severity and the frequency of aggression. Such measures are inevitably subject to response biases but do give a first hand account of levels of aggressiveness. The criteria for what constitutes problematic levels of aggressiveness are in a sense arbitrary but are normally set a priori by the researcher and generally adhere to conventional guidelines.

Often, the extent of problems of aggression are measured by the frequency of incidents rather than the severity. Evidence suggests that frequency of aggressive behaviour is closely correlated with severity (Harris & Russell, 1989; Lowe & Felce, 1995). In that there is no absolute way of measuring the severity of aggression, frequency may be seen as a reasonable indicator of both aspects of aggression. It might be argued that such a criterion would be most appropriate for examining people with more reactive forms of aggression. Those people that are frequently observed being aggressive are perhaps more likely to have difficulties controlling their behaviour.

However researchers choose to define 'problems' of aggression, it is clear that aggressive behaviour can have devastating consequences for the victim as well as the perpetrator. A victim of aggression can suffer any number of forms of physical and psychological injury. As well as the pain and trauma associated with such experiences, many victims will have to pay the economic costs for treating their injuries and face long-term or permanent disability. However, problems of aggression can also come with great costs to the aggressor. For example, if an individual is typically aggressive with people with whom they are in close relationships, there can be serious damage to these relationships. Problems of aggression can also jeopardize employment opportunities or, in extreme cases, lead to criminal prosecution. These are just a few examples of the potential consequences

of aggression. However, they demonstrate the importance of using the theories of aggression, outlined in this chapter, to developing effective ways to treat problems of aggression.

Chapter 3. Intellectual Disabilities and Problems of Aggression

3.1 Intellectual Disability

The main purpose of this chapter is to give and account of frequent aggression in people with intellectual disabilities (IDs) and how researchers have typically approached this area. However, it is first necessary to clarify what is meant by intellectual disability and to consider what it might mean for someone to have an ID. To this end, this chapter begins with a brief introduction to several basic points regarding intellectual disabilities.

3.1.1 What is an Intellectual Disability?

The terms Intellectual Disability (ID) and Learning Disability (LD) are used to describe a wide range of developmental disabilities. Although different governing bodies offer subtly different definitions, people are generally considered to have IDs if they meet all three of the following criteria:

1) Demonstrate a significantly reduced ability to understand new or complex information, to learn new skills (impaired intelligence).
2) Demonstrate a reduced ability to cope independently (impaired adaptive function)
3) Impairments started before adulthood with a lasting effect on development
(DoH, 2001).

As these criteria demonstrate, when researchers and clinicians refer to people with IDs or LDs, they do not simply mean anyone with a relatively low score on a measure of intelligence. In addition to a significantly low IQ (normally 2 standard deviations below the mean, or, below 70 on a standardised measure), a person with IDs will have difficulties with their everyday functioning that necessitate support from others (Carnaby, 2007). Also, criterion 3 stipulates that impairments must have been present before adulthood. It is this developmental aspect that differentiates Intellectual Disabilities from other forms of acquired intellectual impairments with an adult onset, such as post-adolescent head injury.

Within the UK, the terms ID and LD can be used interchangeably. In other countries however, including the USA, the term Learning Disability connotes a more specific developmental difficulty, such as dyslexia, and not the more global impairments implied by the term in the UK. The research literature in this area shows that a multitude of other terms have been used in the recent past, including Mental Retardation, Learning Difficulty, Mental Handicap and Mental Impairment. Some of these terms are now considered outdated or politically incorrect while others are still used on occasion.

It is the opinion of the author that while the term Intellectual Disability may be no more or less apt than some other terms, it is one of the least ambiguous in current usage. For this reason, the term Intellectual Disability or ID will be used exclusively in this thesis.

3.1.2 Classifying Intellectual Disability

Although ID is defined by three quite distinct criteria, the severity of an individual's impairment is often classified on the basis of IQ scores alone. Table 3.1 below illustrates the classifications of ID and the corresponding range of IQ scores:

Table 3.1

Classifications of ID by IQ score

IQ score	Classification
50-70	Mild
35-50	Moderate
20-50	Severe
Below 20	Profound

IQ measures may offer a convenient indicator of ID, but many have stressed the importance of taking social functioning and adaptation into consideration when classifying ID (e.g. British Institute of Learning Disabilities, 2011). For a start, any IQ test will only measure certain aspects of intelligence. Each individual has different strengths and abilities that are not necessarily well represented by an IQ score. Perhaps more importantly, the most common purpose for assessing ID is to inform the provision of some form of support, be it education, home care or other services. To do so effectively will generally require more information than an IQ score. Specifically, it is necessary to identify the areas of an

individual's life where they struggle to function independently and may benefit from support.

This point is perhaps of particular pertinence in clinical services and education where classifications may reflect or have a direct impact on the life of an individual with ID. However, in research, with large numbers of participants, it may either be impractical or inappropriate to explore an individual's capacities and needs in greater detail. It is also true to say that in the research setting, IQ scores tend to be collated and averaged over groups rather than being used for diagnostic purposes with individuals. It could be argued that in such instances, IQ measures can provide an adequate indication of the presence and severity of ID.

3.1.3 How Common is Intellectual Disability?

Given that many people with IDs may never come in contact with services in their lifetime, it is difficult to get an accurate picture of the actual number of people in a given population that have IDs. Instead, the prevalence is often seen as a more accurate indicator of how common IDs are. Using IQ scores as a guideline, it has been estimated that around 2-3% of the population have an intellectual disability (IDs), including 3-4 people per 1000 with moderate to severe IDs (Gates, 1997; Emerson et al, 2001; DoH, 1992).

3.1.4 What Causes Intellectual Disability?

A hugely diverse range of factors can cause IDs. Broadly, these can be divided into three categories: prenatal causes (occurring before birth), perinatal causes (occurring during birth) and postnatal causes (occurring after birth). ID also arise genetically as the tail of a normal distribution of intelligence in the general population. The table below, reproduced from Carnaby (2007), highlights some of the most common sources of ID:

Table 3.2

Causes of Intellectual Disability (redrawn from Carnaby, 2007)

Cause	Syndrome	Examples
Prenatal causes	Genetic syndromes	Down's Syndrome; Fragile X Syndrome
	Other syndromes	Spina bifida; cerebral palsy
	Environmental factors	Malnutrition; drugs; alcohol; diseases
Perinatal causes	Biomedical factors	Infections in the womb (such as toxoplasmosis)
	Environmental factors	Asphyxia; premature birth; other difficulties during labour/delivery
Postnatal causes	Biomedical factors	Epilepsy; meningitis; Rett's syndrome
	Environmental factors	Head injury; lead/mercury poisoning; malnutrition; social deprivation

3.2 Problems of Aggression in People with IDs.

3.2.1 Incidence and Nature of Aggression in People With IDs

Current evidence suggests that between 2 to 40% of individuals with IDs have problems with aggression (Sigafoos et al, 1994; Lowe et al, 2007). The wide range in the reported prevalence of aggression may be due to methodological inconsistencies between studies. For example, the types of aggressive behaviour that the studies included is found to vary, with some studies including self-injurious behaviour or property destruction and others focussing purely on direct or physical aggression (McClintock, 2003). Studies have also included samples with differing levels of intellectual disability. Given that aggressive behaviour may typically manifest differently in individuals with different levels of impairment, this too may have influenced the wide range of findings (Emerson et al, 1997; Borthwick–Duffy, 1994). Finally, the samples of some studies have been predominately from an institutional setting while others, particularly in more recent studies, were from community settings. Although it does not appear that deinstitutionalisation necessarily

reduces aggressiveness, there is evidence that rates of aggression are higher in institutional settings than community settings (Nottestad & Linaker, 2001; Borthwick–Duffy, 1994).

In one study with people with milder IDs and problems of aggression, approximately 44% of participants were found to be involved in outwardly directed aggression (Tenneij and Koot, 2008; Antonacci et al, 2008). Such incidents were typically directed at care staff in response to denial of requests. About half of such incidents were of a verbal nature with 4% having more serious consequences for the victim. Another study including adults of a wider range of disability found that around 24% of aggressive incidents involved physical aggression with 5% having a major impact on the victim (Crocker et al, 2006). In general, incidents of physical aggression are commonly limited to individual slaps, punches, pushes and kicks (Emerson et al, 1988). However, evidence suggests that between 17% and 29% of acts of physical aggression by people with IDs involve some form of weapon (Harris & Russell, 1989; Sigafoos et al, 1994).

3.2.2 Consequences of Aggression in People With IDs

As mentioned in the previous chapter, aggressive behaviour can have a broad range of costs to society, the perpetrator, their victims and those closest to them. There is every reason to expect aggressive behaviour by people with IDs to have a similar range of consequences. However, not only is aggression particularly common in people with IDs, but problems of aggression in this group can have other characteristic outcomes. The following section considers some of these additional concerns.

Presently, one of the primary objectives of services for people with IDs is to meaningfully integrate members of this group into the wider community (SE, 2000). Unfortunately, aggression is one of the most common causes of breakdown in community placements and for hospitilisation or re-institutionalisation (Gardener & Moffat, 1990; Nosttestad & Linaker, 2001). Problems of aggression might also be expected to hinder attempts to secure and maintain work experience. On the whole, aggressiveness can be a major obstacle for many individuals' hopes of successful community integration and life development (Bruininks et al, 1994).

Given that people with IDs typically require some degree of external support, aggressive behaviour by people in this group can add additional costs to services. Not only do service users with problems of aggression often require extra support from staff, their behaviour can also result in increased staff turnover, staff sickness and potentially compensatory payouts for injuries to staff (Sigafoos et al, 1994 as reported by Allen, 2000). Indeed, around half of referrals to a clinical service for people with IDs at a local health authority were related to physical assault (Murphy et al, 1993).

3.2.3 Aggression: A Direct Result of Cognitive Deficits?

Given the prevalence of aggression in people with IDs, it is fair to ask whether there are certain underlying factors common to this group that predispose them to aggression. One obvious possibility is that the cognitive deficits per se can make people more likely to be aggressive.

It has been suggested that deficits in several key areas may be linked to aggression. Some people with IDs may have poor socio-emotional understanding and struggle to interpret complicated social information (Matson & Zeiss, 1978; Hunter et al, 2010). As a result, they may be more likely to misinterpret aspects of social situations. Opportunities to rectify such misunderstandings may well be diminished by a lack of communicative ability and difficulties in taking the perspectives of others (Carr & Durand, 1985). If individuals also have deficits in emotion regulation, then it may be particularly difficult to prevent anger or frustration, aroused by difficult social situations, from driving them towards an aggressive reaction (Musher-Eizenman et al, 2004). Finally, some people with IDs may struggle to generate non-aggressive responses to social situations making them more likely to respond to challenging situations with aggression (Gardner & Cole, 1989).

Gardner & Moffat (1990) offered a multi-modal explanation of aggression in people with IDs that stressed the importance of individual setting conditions, environmental setting conditions, and maintaining factors. Amongst individual factors, Gardner & Moffat stressed the importance of physiological difficulties such as poor attention span, impulsivity and memory impairment, as well as skill deficits in areas such as communication (Antonacci et al, 2008). Environmental setting factors included overcrowding, high staff turnover and inadequate staff training. Finally, they argued that

aggressive behaviour would likely be maintained by positive and negative reinforcement of aggressive behaviour. Consequently, they recommended a largely behavioural intervention for aggression in people with IDs with emphasis placed on positive and negative punishment (Antonacci et al, 2008).

There is, then, evidence that some cognitive deficits common to people with IDs may contribute to aggression. Given that levels of aggression increase with severity of IDs, it would seem feasible that deficits themselves may well play some role in aggression in this group (Emerson et al 1997). However, whether or not deficits partly explain the high levels of aggression in people with IDs, there is no reason to think that they offer a comprehensive explanation of aggression in this population.

If deficits do underpin problems of aggression in this group, one might anticipate that the more aggressive individuals would show more marked deficits than their less aggressive peers. However, the few studies that have examined this area have recovered little evidence that aggressive individuals with IDs have particular cognitive deficits (e.g. Jahoda et al, 2006a; Basquill et al, 2004). What is more, evidence for the efficacy of largely behavioural treatments supported by the deficit model are also far from conclusive (Whitaker, 2001).

In conclusion, existing evidence suggests that 'deficit' theories fall well short of explaining aggression in this group. Instead, recent research has begun to demonstrate that the factors underlying aggression in this group may be as varied and multifaceted as those underlying aggression in the wider population.

3.2.4 Other Risk Factors

There are certain features common to the lives of people with IDs that may predispose some members of this group to be aggressive. For one, mental health problems are disproportionately prevalent in people with IDs (Cooper & Bailey 2001; Deb et al, 2001). It has been proposed that certain mental health problems may in and of themselves predispose people to aggressiveness (Antonacci et al, 2008). For example, affective disorders have been associated with higher levels of aggression in this group (Hemmings et al, 2006). In other studies, symptoms of anxiety, psychosis, depression and hypomania

were all found to be higher in participants demonstrating problematic behaviours (Holden et al, 2003; Moss et al, 2000).

People with IDs are also more likely than the wider population to be ascribed low social status and to encounter stigmatisation by their peers (Crocker et al, 1998; Dovidio et al, 2000). Moreover, people with IDs are more likely to be exposed to more severe forms of maltreatment. They are at increased risk of being bullied and of facing verbal and physical aggression (Nabuzoka & Smith, 1993; Fuchs and Benson, 1995; Emerson, 2005). People with IDs are also more likely to be physically or sexually abused (Tjaden and Thoennes, 2000; Furey, 1994). Crucially, there is evidence that exposure to bullying and other forms of abuse increases the likelihood of an individual becoming aggressive (Marini et al, 2006; Burgess et al, 1987).

A further point is that many individuals with IDs, particularly those with more severe disabilities, remain in residential care. As mentioned previously, it appears that levels of aggression are higher in residential care settings (Borthwick–Duffy, 1994). Indeed, some evidence suggests that resettling previously aggressive individuals into the community setting significantly can reduce their aggressiveness (Bhaumik et al, 2009). In addition to self-injurious behaviours, reductions were observed in physical and verbal aggression directed at others. Albeit resettling may not have positive outcomes in all cases, these findings do seem to support the philosophy of community integration that underpins current service provision in the UK (Nosttestad & Linaker, 2001; DoH, 2001; SE, 2000).

The key difference might be that people living in a community setting are able to live richer lives with more autonomy. It is possible that increased independence might reduce levels of frustration and anger which can contribute to aggression. However, as outlined earlier, a defining feature of ID is the requirement of some degree of support. It is perhaps not surprising then that a large percentage of people with IDs, living in the community as well as in residential settings, feel disempowered (Emerson, 2005). This might be particularly pertinent for people with milder IDs who may be more aware of the limitations of their independence.

Theoretically, the high levels of exposure to negative life experiences such as stigmatisation and abuse in this group may fuel this sense of disempowerment and dissatisfaction (Emerson, 2005). In turn, the negative views that people in this group hold about their lives appear to be reflected in their views of themselves, with low self-esteem being commonplace in people with IDs (Dagnan and Waring, 2004). With impoverished

quality of life, people with IDs may also lack resources that typically buffer self-esteem from negative comparisons with those around them (Dagnan and Sandhu, 1999). Being poorly equipt to bolster their own self or social identities could make people with IDs more sensitive to social threat. For example, they may be more sensitive to being rejected or belittled by others. In order to protect their self image, individuals in such circumstances may be compelled to resort to aggression (Jahoda et al, 2001).

3.2.5 Cognitive Sources of Aggression

It appears that a wide range of factors may predispose people with IDs to be aggressive. However, to understand why some individuals in this group are frequently aggressive, it is necessary to identify what differentiates them from their peers without problems of aggression. In the general population, a large body of literature has been gathered charting a variety of important cognitive factors in aggression (e.g. Dodge, 1980; Lansford et al, 2006; Fontaine et al, 2009). Typically, such research has been has been approached and discussed from the framework of the Social Information-Processing model, outlined in the previous chapter. One crucial implication of this evidence is the support it lends to the applicability of cognitive based therapies for treating problems of aggression. If there are particular biases or cognitive styles that lead to aggression then it would follow that a treatment that can identify and rectify maladaptive thinking, such as CBT, could be of some use.

Until quite recently, potential cognitive factors, such as attributional biases, had been more or less overlooked by research into aggression in people with IDs. It may be that researchers believed that the cognitive deficits implicit to IDs prevented the influence of higher order factors such as cognitive biases. However, much of the recent research regarding aggression in people with IDs has focused on identifying psychosocial factors in the frequent aggression of people with IDs. Consequently, it is becoming increasingly apparent that many of the cognitive tendencies thought to underpin aggression in the wider population play similar roles in the aggressive behaviour of people with IDs.

As the final paragraph of the previous section described, a heightened sensitivity to apparent hostility in others may contribute to aggression. Indeed, several studies have found that frequently aggressive people with IDs could be more likely to interpret the intent of others as being hostile (Jahoda et al, 2006b; Basquill et al, 2004; Pert et al, 1999).

Aggressive individuals may also be more likely to attribute negative emotions to facial expressions (Walz and Benson, 2005; Matheson and Jahoda, 2005).

In situations of conflict, people with problems of aggression may be motivated by different social goals. Where people without problems of aggression often seek a fair outcome, aggressive individuals are found to be motivated to demonstrate strength (Pert & Jahoda, 2008). On deciding how to deal with conflict, aggressive people may be more likely to come up with aggressive solutions and to have more positive expectations of the consequences of aggression (Fuchs & Benson, 1995; Basquill et al, 2004; Kirk et al, 2008; Pert & Jahoda, 2008). Finally, aggressive individuals may also be less likely to attempt assertive responses to situations of conflict (Jahoda et al, 1998)

These studies have begun to show how the ways in which aggressive people with IDs deal with social situations might contribute to their aggression. Such findings offer insights into the specific psychological mechanisms that lead an individual to act aggressively. In doing so, they also strengthen the theoretical argument for considering cognitive based treatments of frequent aggression in people with IDs.

Chapter 4. A Theoretical Framework: The Social Information Processing Model

4.1 Criteria

In previous chapters, the author illustrated that there are many different theoretical frameworks from which to approach research into aggression. In general, theories of aggression concentrate on certain aspects of aggression rather than offering comprehensive explanations of all factors that underpin the phenomenon. For example, evolutionary and ethological theories offer insight into the human propensity to be aggressive but perhaps offer less information about why certain individuals are aggressive while others are not. Similarly, social learning theory explains one way by which behaviours are learned but essentially ignores person-specific traits as well as more conscious forms of learning and decision-making. Emotional arousal theories demonstrate how anger and frustration can drive an individual to aggression. However, they fail to explain how most people do not act aggressively when angry or why some people do act aggressive without feeling angry. The one existing model to integrate several domains of factors underlying aggression, the General Aggression Model, can perhaps best be seen as a map of where different models of aggression intersect and how they interact. As such, the process of choosing a model of aggression for the present thesis should be less about deciding which theory is 'best' per se, but rather which theory is the most 'fit for practice'.

Three main factors were considered when deciding criteria for the theoretical framework for the present thesis.

1. Research Remit: Firstly, and most simply, the model must meet the remit of the doctorate which is to further the understanding of "psychosocial" sources of aggression in this group. Although there is considerable research into the factors that might predispose people in this group to being aggressive, it is only in the last decade that research has begun to explore the actual psychological mechanisms that lead some people to act aggressively. Given the present interest in cognitive based treatments of aggression in this group, improving the understanding of these mechanisms will also help evaluate the

appropriateness of such interventions. Similarly, it may suggest how specific aspects of existing treatments might be better tailored to adults with IDs.

2. Relevance to existing research: It is practical to have a well-evidenced theoretical context in which to interpret one's findings. By doing so, it is easier to understand the wider implications of findings and how they might interact with other factors. Therefore, it was important to find a model that accounted for the existing research in the field.

3. Relevance to potentially salient factors for future research: Although it is advantageous to conduct research in the context of existing research, it was also vital to choose a model that accounts for factors most worthy of future research. In the present case, this equates to factors that might help to explain problems of aggression in people with IDs.

4.2 The Social Information Processing Model

It was decided that the model that best met these criteria was the SIP model. The reasoning behind this will now be outlined in relation to how the model satisfies each of the criteria. Additional benefits and possible limitations of the model will also be discussed.

1. Research Remit

To meet the remit of this project, it was essential to use an approach that gives a useful account of how an individual's social experiences contribute to their behaviour. Psychosocial sources of aggression can be seen as encompassing 1) social experiences that contribute to the development of aggressive behaviour or 2) ways in which person-specific factors interacts with aspects of the social environment to lead to aggression. On this basis, biological or ethological models were immediately excluded as they do not touch upon this area.

At this point, several models that address how behaviour is learned from social experiences, such as Social Learning Theory, Social Cognitive Neo-association theory and Social Interaction theory, remained in consideration. Rather than focusing on how aggressiveness develops, the SIP model details the cognitive processes that occur during

social interactions that might lead individuals to respond aggressively (see Figure 2.1 on p.18). Finally, there is the General Aggression Model which describes both how behaviour is learned as well as the processing during a social interaction in some detail.

2. Relevance to existing research

The majority of research into psychosocial sources of aggression in people with IDs has focused on several cognitive tendencies observed in aggressive individuals with IDs (see p.18). This new wave of research has generally been approached through the framework of the SIP model. One reason for the popularity of this model is that it categorises the various internal processes that occur from the onset of a social event to the subsequent enactment of a response (see Figure 2.1 on p.18). For example, the increased tendency to attribute hostile intent observed in aggressive individuals can be seen as mapping onto the "interpretation of cues" step of the SIP model (Jahoda et al, 2006b). A further example would be instrumental goals observed in aggressive individuals which maps neatly onto the "Clarification of goals" step (Pert & Jahoda, 2008). The model is thereby able to give a detailed schematic of how the various cognitive processes at play in social interactions might combine to result in certain behaviours. As outlined previously, SIP also incorporates emotionality and emotional arousal as well as an individual's acquired knowledge and traits.

Given the historical links between cognitive deficits and aggression in this group, it is also useful that the SIP model clearly accounts for such deficits. For example, it has been proposed that difficulties making sense of socio-emotional information, such as facial expressions, might contribute to aggression in this group (Gardner & Moffat, 1990). In that these difficulties relate to identifying social cues, they would map onto the initial stage of SIP where the individual encodes the cues present in a social scenario. Problem-solving difficulties are also commonly associated with aggression in this group (Gardner & Moffat, 1990). They are generally conceptualized as difficulties generating appropriate responses to situations and can thus be seen as part of the "response access/construction" step of SIP.

In terms of finding a model that best represents the existing research in this field, SIP would appear to be at an advantage over Social Learning Theory, Social Cognitive Neo-association theory and Social Interaction theory. It accounts for all the cognitive processing factors linked to aggression by previous research, including the cognitive impairments.

Moreover, SIP offers an intuitive and cohesive model of how these various cognitive factors might interact during actual social interactions and lead aggression.

The remaining alternative model, the General Aggression Model, also offers an account of online processing within the decision-making part of its model (see p.19). However, its account of cognitive processing is somewhat abbreviated in comparison to the SIP model. More to the point, it does not describe interlinking stages that map directly onto the cognitive tendencies and deficits that have been examined by previous studies. The additional detail in SIP means that it gives a more nuanced account of the existing psychosocial research which has been predominately concerned with processing during social interactions.

3. Relevance to areas of need within the field

SIP has been shown to meet the first two criteria in that 1) it addresses psychosocial factors in aggression and 2) it offers a useful model of aggression based on existing evidence in this field. There still remains the question of whether SIP can be used to address salient research questions in the field of aggression in people with IDs.

The simple answer is yes; both in terms of the aspects of SIP that remain unexplored in this population and those aspects that research has already touched upon. There are many factors implied by the SIP model that have been discussed or researched in the context of the general population but have yet to be considered for adults with IDs. These include social self-efficacy, response efficacy and moral beliefs (e.g. Arsenio, 2010).

Also, some of the mechanisms of SIP have been addressed by no more than one or two papers (e.g. social goals and outcome expectancy). Furthermore, studies into more thoroughly researched areas, such as the attribution of hostile intent, are still continuing to hone the sensitivity of their research methods and explore more nuanced aspects of the SIP mechanisms in question. For example, recent research has examined whether differences in hostile attribution style only exist when the participants imagine themselves encountering provocation (Jahoda et al, 2006b). It is also true to say that the findings of studies regarding psychosocial factors of aggression are not always conclusive. In short, there are clearly a wide range of factors associated with the SIP model and aggression in people with IDs that warrant further research.

4.3 Applicability of SIP to People with IDs

There is perhaps one potential concern about using SIP to explain aggression in people with IDs. This is that proponents of SIP have often stressed that the model is a representation of 'competent' information processing in social circumstances (e.g., Crick & Dodge, 1994; Lemerise & Arsenio, 2000). This implies that processors that are in some way less than cognitively competent may not engage in all of the steps implied by SIP. This could involve pre-emptive processing where some, or all, steps of SIP are skipped. In such cases, the individual might simply 'jump' from an emotional state or early level interpretation to a strongly reinforced behaviour. An immediate concern is that the cognitive deficits implicit in ID might lead many individuals with IDs to engage in pre-emptive processing.

A retort to such concerns is that there is already evidence linking SIP related factors to aggression of people with IDs (e.g. Jahoda et al, 2006b; Pert et al, 1999; Kirk et al, 2008). It appears then that factors associated with SIP do play a part in aggression in people with IDs. As the research literature in this area grows, it may become apparent that the relationships between SIP and aggression are different for people with and without IDs. Indeed, one study, using structural equation modelling, has already found that patterns of SIP in children with IDs aged between 10 and 14 is different from that of non-disabled children (van Nieuwenhuijzen et al, 2006). If SIP can be used to identify cognitive factors in aggression that are specific to people with IDs, it might provide useful evidence for tailoring future treatment of aggression to people in this group.

It is to be acknowledged that most, if not all, research into SIP in people with IDs has focused on people within the borderline to moderate range. It would be a mistake to presume that cognitive factors play no role in aggression in people with more severe IDs. However, having limited expressive and receptive communicative ability might prevent them from being able to engage in many of the research tasks. With this in mind, the research studies in the present thesis will focus on individuals with mild to moderate IDs.

4.4 Conclusion

The SIP model has been found to meet the three criteria set by the author and can therefore be seen as a suitable model of aggression for this thesis. As discussed in the preceding section, the present thesis will address SIP in people with milder IDs as the cognitive aspects of SIP would appear to be particularly pertinent to people with disabilities in this range.

Chapter 5. People with IDs in the Transition to Adulthood

5.1 SIP and Aggression over the Lifespan

As discussed in Chapter 2, aggression typically develops over the lifespan, manifesting itself in different ways at different stages of development (p.6). It is also the case that certain factors may have greater influences at particular stages in development. For example, it might be expected that parental aggression might influence the behaviour of young children more than it would the behaviour of older adults (Bandura, 1997). For this reason, research into aggression in people with IDs has typically focused on children at specific developmental stages (e.g. van Nieuwenhuijzen et al, 2006).

Although research with children has acknowledged that factors in aggression may vary between specific developmental stages, studies examining aggression in adults with IDs have tended to include adults of any age. Perhaps because childhood and early adolescence are seen as the key stages in the development of aggressiveness, there has been a presumption that aggression remains the same throughout adulthood. However, life is dynamic and individuals and their circumstances continue to change throughout adulthood.

There is then no reason to presume that the same factors that commonly underlie aggression in eighteen year olds will be exactly the same as those that affect adults of retirement age. Specifically, one might expect that the most common environmental and interpersonal triggers of anger and aggression might depend on the particular stage of an individual's life. While many younger adults with IDs might report spending a large percentage of their time in education settings or at home with their parents, older adults might be more likely to spend a larger proportion of their time with other service-users or carers. There is then every reason to expect people of different ages would report different environmental triggers to their aggressive behaviour.

To date, three studies have examined the experiences of conflict that typically evoke aggression in adults with IDs. They all found that incidents of conflict were frequently with peers and often involved aggression (MacMahon et al, 2006b; Hunter et al, 2010; Benson & Fuchs, 1999). It appeared that conflict with fellow service-users may have been

particularly common (MacMahon et al, 2006b). However, the experiences of adolescents and younger adults that spend the majority of their daytime at school or college, rather than adult resource centres or work settings, do not appear to be well represented in these studies.

Also, aging and maturity generally bring shifts in priorities and outlook. Attachments to parents and other people may change. Social goals and interests may also develop. One driving force behind such changes can be the different challenges that are characteristic of different stages of development. Social affirmation, employment and financial independence may be prominent in the minds of young adults but less important to people of older generations. Although limitations in autonomy may diminish some of these changes for people with IDs, there can be no doubt that age will have a substantial effect on what matters to people with IDs.

As people's thought processes mature, the way that they deal with situations may change. In the context of SIP, this might mean that the roles of certain processes in aggression may also vary for people of different ages. Longitudinal research with non-disabled participants suggest that it is only during adolescence that decision making processes of SIP become important factors in aggression (Fontaine et al, 2009). This is seen to coincide with the maturing of executive functioning at this developmental stage (Fontaine et al, 2010).

Interestingly, discrepancies have also been identified between the SIP of aggressive children with IDs and aggressive adults with IDs. Van Nieuwenhuijzen et al (2006) found that factors associated with the decision-making stages of SIP, such as predicted outcomes of aggression, might not help explain aggression in children with IDs. However, it appears that by adulthood, aggressive individuals with IDs expect more positive outcomes from aggression and more negative outcomes from submissive behaviour (Kirk et al, 2008). The evidence suggests that adolescence may be a time of important shifts in how SIP mediates aggression in people with IDs, as it is for the non-disabled population. However, few, if any, studies have examined patterns of SIP in aggressive older adolescents or young adults with IDs.

5.2 Transition to Adulthood

As we have seen, research into the experiences that might trigger anger and aggression in adults with IDs may not represent the experiences of younger adults. Moreover, although there is reason to expect important developments in the relationships between SIP and aggression at this stage, research has thus far failed to explore SIP in aggressive young adults with IDs. With this in mind, the author decided that the present thesis would focus on exploring the psychosocial sources of aggression in young adults with IDs.

5.2.1 Challenges and Limitations of the Transition to Adulthood of People with IDs

In addition to this theoretical rationale, there are other reasons why it might be particularly useful to understand aggression in people with IDs at this stage. The transition to adulthood can often be a challenging enough period for non-disabled young people with changes in hormone levels, a newly matured body and a heightened social awareness to name but a few common concerns. It has been argued that at no other life stage will an individual have to deal with so many changes, transitions and developmental tasks, nor will these ever occur again at such a rapid rate (Jessor, 1984).

By definition, the transition to adulthood involves the progression towards a more autonomous and adult lifestyle. To this end, adolescents must develop the knowledge and skills necessary to function independently from their families. Over these years, young people are typically allowed increasingly more choice in what they do so that they can learn how to cope with risk and make decisions (Shepperdson, 2001). Indeed, it is thought people brought up in a more risk-tolerant setting are more likely to develop the key living skills inherent to independent adult living (Heyman & Huckle 1993).

Unfortunately, young people with IDs, who might be expected to require more practice of basic life skills, might have fewer opportunities to develop these key skills. One reason for this might be that parents of children with IDs may be more protective of their children, who they may view as being more vulnerable than their typically developing peers. Perhaps for this reason, parents of young people with IDs may be more restrictive of their children's behaviour (Conway, 1998). They may also be more likely to intervene where

other parents might allow their child to learn from experience (Conway et al, 1998). Moreover, while it is common for non-disabled young people to act against the instruction of their parents, many of their peers with intellectual disabilities may not have the assertiveness to do the same (Shepperdson, 2001). In being less able to push the boundaries of their parents' authority, young people with IDs may be slower to attain autonomy. As a likely consequence of these factors, young people with IDs tend to have less say in their basic everyday choices such as which clothes they wear and their finances (Shepperdson, 1994; Shepperdson, 2001). They can also remain restricted in their social lives including who they spend their time with and the pursuit of romantic relationships (Heyman & Huckle 1993).

In addition to having less scope to develop autonomy in the family setting, the employment and education opportunities available to young people with IDs are somewhat limited in comparison to their non-disabled peers. For many young people, employment is viewed as an integral part of becoming an adult. Not only does it allow an individual financial independence from their family, but taking on a responsible and adult role might help them embrace a more adult self-image. Historically, it has been suggested that around half of young people with IDs might have expected to be in employment (Ferguson & Kerr, 1955; 1958). Many of these jobs would have been unskilled work in traditional industries (May, 2001). However, with the loss of many of these industries and the modernisation of the labour market, the majority of entry-level jobs now require a greater degree of skill and cognitive sophistication. Consequently, it is now far more difficult for school-leavers with IDs to secure employment (May, 2001; Caton & Kagan, 2007). Indeed, recent governmental research indicates that 16% of people with IDs in Scotland are in some form of employment, with less than 5% in open employment (Scottish Executive, 2007).

Similarly, school-leavers with IDs will typically find their training and education opportunities to be limited. Also, while many young people are able to use their training as a route to a career, people with IDs may find it more difficult to progress beyond training (Caton & Kagan, 2007). Instead, many young people with IDs find themselves repeating similar courses without any meaningful development towards work. May (2001) argued that these difficulties do not reflect an incapacity to work on the part of school-leavers with IDs. Instead, he stresses that the focus of recruitment procedures is typically on the employability of applicants rather than on which applicant would benefit the most and that people with IDs are inevitably disadvantaged by such a system.

5.2.2 Self-Image and Aggression

Young adults with IDs may not only have less freedom to develop the basic life-skills associated with adulthood, but also find fewer opportunities to secure employment and meaningful qualifications. In spite of this, adolescents with IDs often have similar aspirations for the future as their non-disabled counterparts (Corrie & Zaklukiewicz, 1983; Riddell et al, 1993; Todd et al, 1991). Indeed, this optimistic outlook is shared by the parents of many adolescents with IDs. It may be that it is only in the later years of adolescence that young people with IDs develop an awareness of the disparity between their prospects and those of their non-disabled peers (Byrne et al 1988). This may be a particularly painful revelation to people with milder IDs who might develop a keener awareness of the implications of such differences.

Theoretically, it might be expected that an emerging awareness of limited autonomy and prospects in comparison to non-disabled peers could result in some individuals perceiving themselves in a more negative light. In turn, this might prime such individuals to interpret the social acts of others as being disrespectful or hostile. In order to protect their vulnerable self-image, some individuals might become more likely to respond aggressively to these perceived threats (Jahoda et al, 2001). This argument is supported to some degree by recent evidence from social information processing research. It appears that aggressive people with IDs might only exhibit a heightened sensitivity to hostility when they perceive the action of the other person as being directed at them (Jahoda et al, 2006b). This could suggest that cognitive tendencies that underlie aggressiveness in people with IDs might stem, in part, from a vulnerability to ego-threat.

Sadly, young people with IDs may also be particularly likely to encounter the sorts of social interactions that might provoke aggression. For example, people in this group in full-time education may be particularly likely to encounter bullying, social exclusion and stigmatisation (Nabuzoka & Smith, 1993; Lunsky and Benson, 2001; Harris, 1995). In addition to triggering aggressive behaviours, difficult social experiences such as bullying and social exclusion may compound the vulnerable self-image that underlies such behaviours. Faced with victimisation and a lack of peer affirmation, it would be even more difficult for young people to cultivate a positive self-image (Shepperdson, 2001). Thereby, these experiences could also lead to the use of aggression as a form of ego-defence. There is already evidence from non-disabled young people that peer rejection can lead to

externalising behaviour in adolescence (Laird et al, 2001). Similarly, it appears that many people who experience bullying go on to bully others (Marini et al 2006).

At a stage where most young people are struggling to establish themselves as young adults, people with IDs may face an array of additional challenges to their self-esteem and self-image. Alarmingly, it seems possible that these challenges could contribute to the development of aggressiveness. In the non-disabled population, late onset-aggression has been associated with life stressors, school-drop-out and the relationship instability (Windle & Windle, 1995; Loeber & Hay, 1997). It appears that similar experiences of victimization and unsatisfactory circumstances in respect to education and social life could also constitute stage-specific factors in aggression of people with IDs. Unfortunately, this may be a particularly damaging time for people with IDs to have problems of aggression. As employment and education opportunities for people with IDs are often limited to school-leavers, problems of aggression at this stage might prevent individuals from pursuing and maintaining such opportunities (Caton & Kagan, 2007).

5.3 Conclusion

The preceding sections have established that there is a need to further the understanding of aggression in young adults with IDs. Longitudinal research with non-disabled youths and studies with adults and children with IDs suggest this may be a key stage in the development of 'aggressive' styles of cognitive processing. However, there is little or no research conducted into SIP in aggressive young adults with IDs. Additionally, there is reason to expect stage-specific factors that could contribute to more people developing aggression in late adolescence. Finally, it appears that having such difficulties may have particularly far reaching consequences for individuals at transition. For these four reasons, the present thesis concentrates on developing an understanding of the psychosocial factors underlying aggression in young adults with IDs.

Chapter 6. Research Rationale

Over the course of these initial chapters, the reader has been introduced to the key issues regarding aggression and people with IDs. However, these chapters have also been used to develop a rationale for examining psychosocial sources of aggression in young adults with mild to moderate IDs. In this brief chapter, this rationale will be summarised and a strategy set out for how the specific research objectives of the main research studies will be selected.

Chapter 3 demonstrated that frequent aggression is a problem for a significant minority of people with IDs, often with far-reaching consequences (Sigafoos et al, 1994; Lowe et al, 2007; Gardener & Moffat, 1990; Nosttestad & Linaker, 2001). We have also seen how the Social Information Processing (SIP) model has provided a useful framework for exploring the psychosocial factors that underpin these problems. In particular, this approach has been successful in improving the understanding of aggression in people with mild to moderate IDs (e.g. Jahoda et al, 2006, Pert et al, 1999; Kirk et al, 2008). However, the overall picture of aggression in this group is far from complete, with the role of potentially crucial factors remaining unclear. Furthermore, although it may be a key period in the development of aggression, very little is known about the factors underlying aggression in this group during the transition to adulthood (Fontaine et al, 2009). Problems of aggression at this stage may also have particularly damaging consequences (Caton & Kagan, 2007). For these reasons, the thesis adopted a SIP framework to explore the psychosocial sources of aggression in young adults with mild to moderate IDs.

With this general rational in place, attention can turn towards selecting the specific factors that will be explored in the four studies for this thesis. Already, a sizeable body of research has shown that several psychosocial factors associated with SIP might contribute to aggression in adults with IDs (e.g. Jahoda et al, 2006b; Pert & Jahoda, 2008). However, the Social Information Processing model implicates a wide array of potentially salient cognitive factors in aggression, many of which remain unexplored (Lemerise & Arsenio, 2000). In order to identify the areas of greatest need in this field, the first research chapter of this thesis is a systematic review of the existing research into SIP of aggressive adults with IDs. The findings of the review are then used to inform the selection of the specific research objectives of the subsequent research studies.

Chapter 7. SYSTEMATIC REVIEW:

The Social Information Processing model as a framework for explaining the frequent aggression of adults with mild to moderate intellectual disabilities: a critical evaluation of the existing literature

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7.1 Introduction

7.1.1 Social Information Processing Model of Aggression (SIP)

Research into the psychosocial sources of aggression in the wider population is generally discussed through the framework of Social Information Processing (SIP) models. SIP aims to explain social behaviours, such as aggression, by charting the mental states and processes that occur during a social interaction (Crick and Dodge, 1994; Huesmann, 1998; Lemerise and Arsenio, 2000; see Figure 2.1, p.18). Prevalent models propose six stages of processing that are mediated by the 'database' of personal experiences and predispositions that each individual brings into social interactions. The six processing stages span the moment that a social event is encountered to the point where a response to this event is enacted. In the first steps, the individual encodes and interprets the available social information (i.e. "what happened" and "why it happened"). Next comes the clarification of goals (i.e. "what I want to happen now") followed by the generation and retrieval of possible responses. Finally, the individual chooses and enacts their response.

To an extent, the processing stages are to be viewed as occurring consecutively, progressing from making sense of a situation to responding to that situation. However, the model also reflects the reflexive, non-linear nature of real-life social interactions. Firstly, an individual's 'database' of memories and knowledge have a constant or "online" influence on each step of the sequence. Secondly, since real social encounters tend to involve multiple and overlapping social events, the model is depicted as cyclical, with the sequence constantly recycling and updating. Also, 'feedback loops' between stages reflect continued bi-directional interaction between the different cognitive processes as the social interaction develops.

Also, decades of research have demonstrated the role of emotions in aggression, with particular importance being placed on anger and frustration (e.g. Dollard, 1939; Berkowitz,

1978). The recent Lemerise and Arsenio (2000) model includes important amendments to initial formulations of SIP by incorporating temperament and emotional state (see p.18).

The SIP model can be seen then as a reflexive sequence of processing steps mediated by stable and circumstantial personal dimensions. Each of these stages and dimensions implies certain cognitive processes, some of which are outlined in Figure 2.1 (p.18). In turn, each of these processes can have a bearing on the individual's final response to a situation. By identifying idiosyncrasies in the cognitive processes of aggressive people, researchers can use the SIP model as a way of developing an integrated picture of how different factors interact and culminate in aggression.

7.1.2 SIP and People with IDs

As evidence gathers of factors associated with SIP that underpin aggression in people with IDs, there remains a degree of reluctance to adopt SIP as the predominant model of aggression in this group. Proponents of SIP often stress that the model represents the sequence of cognitive processes by which a "competent" processor develops a response to a social event (Crick and Dodge, 1994; Dodge, 1986; Huesmann, 1988). It is plausible that impulsive or emotional states might result in shallower or pre-emptive processing. Equally, it is possible that impaired or insufficiently developed cognitive abilities might render some groups of people incapable of performing some of the processes described by the model. Indeed, one study suggested that a model excluding response-decision processes explained aggression in children with IDs better than the full standard model (van Nieuwenhuijzen et al, 2006). Yet, many of the findings from existing research regarding aggression and SIP in this group are contradictory or inconclusive (e.g. Woodcock & Rose, 2006; Jahoda et al, 2006a; Walz & Benson, 2005). Consequently, it was thought that a systematic review would help synthesise the available literature and indicate the relevance of each SIP mechanism to adults with IDs. The relative scientific rigour and objectivity of a systematic approach were seen as preferable to the benefits of taking a more discursive approach.

7.2 Aims

The present chapter systematically reviews studies found to address the relationship between SIP and aggression in adults with IDs. In doing so, this review aims to critically evaluate the use of social information processing as a theoretical framework for explaining aggression in adults with intellectual disabilities, and consider how the model might be reformulated to better represent SIP this group.

7.3 Method

7.3.1 Search Strategy

The following search terms were used to search PsycINFO (1806-present), Ovid Medline (1948-present), ERIC (1965-present):

1. "Intellectual disabilit" or "Learning Disabilit*" or "Developmental Disabilit*" or "Mental* Retard*" or "Cognitive* Impair*"*

2. "Aggression" or "Anger" or "violence"

3. "Attribution" or "Social Cognition" or "Social Perception" or "Information Processing Model" or "social information processing"

4. 1 and 2 and 3

Further hand-searches were conducted of Journal of Applied Research in Developmental Disabilities, American Journal on Intellectual and Developmental Disabilities (formerly the American Journal on Mental Retardation) and Journal of Intellectual Disability Research (issues published between 2000 and 2011).

7.3.2 Inclusion Criteria

Articles were considered if they addressed the relationship between SIP or associated mechanisms and aggression, anger or violence in adults with intellectual disabilities. Factors commonly described in the literature as being directly linked to stages of the SIP model include: emotional understanding, emotion recognition, cognitive biases, social goals (instrumental vs relational), beliefs about aggression, problem solving skills (response construction and choice), self-efficacy (of enacting given response behaviours and response decision. Articles focusing on factors that are indirectly linked to the SIP model, such as social self-efficacy and vulnerable self/self-esteem were also considered for inclusion. Only articles published in peer-reviewed journals were considered.

As the patterns of SIP in children have been shown to be different from those of adults, only studies with participants aged sixteen years or over were considered (van Nieuwenhuijzen et al, 2006). Articles including intellectually disabled participants of all levels of severity were considered. Although it has been suggested that SIP may be more applicable to people with less severe disabilities, it was thought better to evaluate this suggestion than to exclude people with more severe disabilities.

Studies that included participants with autism spectrum disorder (ASD) in the main sample of people with IDs were excluded. People with ASDs typically display patterns of social processing and behaviours that vary from those of the wider population in characteristic ways. Thus, only articles that clearly differentiated between individuals with and without ASDs were considered.

7.4 Results

7.4.1 Article Selection

Figure 7.1 below shows a flow chart of the processes by which articles were selected. Electronic searches using the Ovid search engine retrieved 50 articles from PsycINFO, 28 articles from Ovid MEDLINE and 18 articles from ERIC. Of these 96 articles, 16 duplicates were identified leaving 80 articles from the electronic searches. No further articles were identified by hand-searching journals. Of the remaining 80 articles, eleven were deemed to meet inclusion criteria and were included in the review. Thirty-one articles were removed because they did not include adult samples. A further thirteen articles did not include participants with IDs, fourteen studies did not address anger or aggression, nine studies did not address SIP directly or indirectly, one study included individuals with ASDs in their sample and two papers were not published in peer-reviewed journals.

The reference sections of the eleven identified articles were searched for other relevant articles that may have been missed by previous searching. A further two suitable articles were identified in this process, amounting to thirteen articles that met inclusion criteria. These consisted of twelve cross-sectional studies and one single-case experimental design. No prospective longitudinal studies were identified.

Result of electronic literature
searches
(PsycINFO, Ovid MEDLINE,
ERIC)
(N=80)

Did not meet
inclusion criteria
(N=69)

Papers retained after initial
screening
(N=11)

Papers identified from
hand searches (Journal of
Applied Research in
Developmental
Disabilities, American
Journal
on Mental Retardation
and
Journal of Intellectual
Disability Research)
(N=0)

Papers identified
from the
reference sections
of
retained papers
(N=2)

13 papers included
in review

Figure 7.1 Flow Diagram of the process of selecting articles for inclusion.

7.4.2 Quality Criteria

The selected studies were graded on the basis of five factors: study-type, whether ID was measured by a validated assessment, whether SIP was addressed directly or indirectly, whether aggression was clearly defined and sample size. Using these criteria, the following quality gradings were developed:

Level Ia- N based on power calculation, diagnosis of intellectual disability through validated assessment, aggression clearly defined.

Level Ib- as Ia but N not based on power calculation. However, relatively large sample size (Group N>20).

Level Ic - as Ib but with smaller sample size (Group N<20).

Level IIa- large sample size, diagnosis of intellectual disability through validated assessment, aggression is not clearly defined.

Level IIb- as IIa but with smaller sample size.

Level IIc- as IIa but indirectly addresses SIP.

Level IIIa- As Ib but diagnostic method for ID is unclear.

Level IIIb - as IIIa but with smaller sample size.

Level IV - Single case experimental design addressing the SIP model.

Level V - Single case descriptions addressing the SIP model.

7.5. Review

The thirteen studies that met criteria for inclusion in the review addressed seven distinct aspects of SIP: Socio-Emotional Understanding, Socio-situational Understanding, Attribution of Hostile Intent, Social Goals, Outcome Expectancy, Predicted Response

Decision. Each of these seven factors maps onto one of the six sequential stages of the SIP model depicted in Figure 2.1, p.18.

The review addresses the factors individually in order of the SIP stages with which they are associated. Below, Figure 7.2 charts the particular mechanisms that each study addresses and the stage of Lemerise & Arsenio's (2000) model that each of the mechanisms is associated with:

4. RESPONSE ACCESS/ CONSTRUCTION

•Problem Solving Skills
- *Basquill et al (2004)*
- *Pert & Jahoda (2008)*
- *Fuchs & Benson (1995)*

5. RESPONSE DECISION

•Outcome Expectancy
- *Pert & Jahoda (2008)*
- *Kirk et al (2008)*

•Predicted Response Decision
- *Jahoda et al (1998)*
- *Pert & Jahoda (2008)*
- *Pert et al (1999)*
- *Fuchs & Benson (1995)*

3. CLARIFICATION OF GOALS

•Social Goals
- *Pert & Jahoda (2008)*

6. BEHAVIOURAL ENACTMENT

2. INTERPRETATION OF CUES

•Socio-situational Understanding
- *Binzley et al (1986)*

•Attribution of Hostile Intent
- *Jahoda et al (2006b)*
- *Basquill et al (2004)*
- *Pert et al (1999)*
- *Fuchs & Benson (1995)*

1. ENCODING OF CUES

•Socio-Emotional Understanding
- *Jahoda et al (2006a)*
- *Walz & Benson (2005)*
- *Matheson & Jahoda (2005)*
- *Woodcock & Rose (2006)*
- *Pert et al (1999)*

Figure 7.2 Schematic diagram of the studies included in the present review and the mechanisms of SIP that they address.

In cases where studies address more than one mechanism of the model, the findings regarding each mechanism are discussed separately in the appropriate subsection. Consequently, some studies appear in more than one table.

7.5.1 Encoding of Cues

When responding to a social event, the first step of processing is to encode social cues present in the situation. Five studies were found that examined SIP at this stage, including two rated Ib, another two rated Ic, and one rated IIa.

7.5.1.1 Socio-emotional Understanding

Each of the five studies that examined encoding was concerned with the relationship between socio-emotional understanding and aggression. Difficulties understanding the emotions of others has been posited as a possible factor in the aggression problems of people with and without IDs (Benson, 1994; Rojahn et al, 1995). It might be expected that those who are less sensitive to emotional cues or less disposed to empathise with other people's point of view would be more likely to misinterpret their intentions. This could increase their likelihood of encountering social conflict which can in turn provoke aggressive responses.

Details of the five studies found to address emotional understanding are outlined below in Table 7.1.

Table 7.1 SOCIO-EMOTIONAL UNDERSTANDING (p.1 of 3)

Study	Qua lity	Type of study	Participants	Main measures	Procedures	Findings	Limitations
Jahoda et al (2006a)	Ib	Cross-sectional; Agg and NAgg groups.	People with Mild-moderate IDs (43 aggressive people, 46 non-aggressive people).	Study 1: Twelve photos of faces (six male and six female) expressing happiness, sadness, fear, anger, surprise and disgust. Study 2: Introductory clips of characters reacting in angry or calm manner to provocative and ambiguous scenes. Three ambiguous and two provocative scenes with each character without footage of their reactions	Study 1: Participants asked to identify emotions depicted in photos. Study 2: Participants familiarised with an angry and a calm character. Participants shown test scenes and asked to describe what had happened. Participants then asked to predict the characters' reactions to test scenes.	Study 1:No difference in ability to label facial affect. Study2: No significant differences were found in ability to differentiate between the feelings and behaviours of the two characters. Agg group better at predicting characters' attributions.	No control condition for task complexity in facial expression labelling task. Did not indicate whether a power calculation was used.
Pert et al (1999)	Ib	Cross-sectional; Agg and NAgg groups.	People with mild to moderate IDs (22 aggressive people, 22 non-aggressive people).	Provocative and ambiguous scenarios as per Jahoda et al (2006a) plus 2 positive' scenarios.	Role-taking ability task as per Jahoda et al (2006a) Study 2.	Aggressive group better at role-taking in both angry and calm character conditions.	Did not indicate whether a power calculation was used.

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Table 7.1 SOCIO-EMOTIONAL UNDERSTANDING (p.2 of 3)

Study	Quality	Type of study	Participants	Main measures	Experimental Procedures	Findings	Limitations
Walz and Benson (2005)	Ic	Cross-sectional; Agg and NAgg groups.	People with borderline to moderate IDs (18 aggressive people, 21 non-aggressive people).	Task1: Photos as per Jahoda et al (2006a). Task2: Images of digitally standardised faces expressing basic emotions.	Task1: Facial emotion recognition task as per Jahoda et al (2006a). Task2: Participants were asked to match standardised faces to one of five other faces. Four of the options included one feature identical to that of the test stimulus (e.g. eyes, hair, mouth) and the fifth option was either an identical face or a face composed of different features expressing the same emotion to the test stimulus.	No group differences in response accuracy found for either measure. Aggressive participants were more likely to mislabel expressions with a negative emotion.	Small N; all male sample.
Matheson and Jahoda (2005)	Ic	Cross-sectional; Agg and NAgg groups	People with mild-moderate IDs, (19 aggressive people, 15 non-aggressive people)	Task1: Photos as per Jahoda et al (2006a). Task2: Photographs of people expressing emotions in context (e.g. fear at seeing a spider). Task 3:= Six cartoon drawings depicting individuals with no facial features in scenes typical of basic emotions.	Task1:Facial emotion recognition task as per Jahoda et al (2006a). Task2: Emotion recognition using context rich photos. Task3: For each scene, participants were asked to choose from a selection of faces displaying different emotions.	No group differences found for facial expression recognition. Agg participants poorer at labelling emotions in context rich scenes and more likely to mislabel characters' emotions by choosing the angry face in the cartoon task.	Small N, several Agg group members had not exhibited significant inter-personal aggression.

Table 7.1 SOCIO-EMOTIONAL UNDERSTANDING *(p.3 of 3)*

Study	Quality	Type of study	Participants	Main measures	Experimental Procedures	Findings	Limitations
Woodcock & Rose (2006)	IIa	Cross-sectional; correlation based on self-reported anger.	30 people with IDs	40 black and white photos of faces demonstrating main emotions and neutral affect.	Participants asked to imagine that they were talking to person in image and identify emotion depicted in images.	Groups did not vary in emotion attribution accuracy. The high-anger group did not attribute more anger than the low-anger group. High-anger Ps were less accurate at identifying neutral expressions.	Addresses anger rather than aggression; Small N; convenience sampling used; groups not matched for gender, age or IQ. No control for task complexity in facial expression labelling task

Quality Rating Ib

Two studies achieved a quality rating of 1b. Jahoda et al (2006a) compared the abilities of adults with and without problems of aggression to identify emotion from black and white photographs of male and female faces conveying affect. The study also compared the role-taking abilities of the two groups using a video-based task. Participants were first familiarised with angry and calm characters and then asked to predict how each character would react to ambiguous or provocative scenarios.

As Table 7.1 shows, no significant differences in accuracy of emotion recognition were identified between the groups. Aggressive participants were not more likely to identify negative emotions and no gender differences were found. In the role-taking task, no significant group differences were found in the ability to differentiate between the emotions and behaviours of characters. However, there were a number of non-significant trends. A larger proportion of the aggressive group predicted that the 'angry' protagonist was more likely to attribute hostile intent in ambiguous scenarios. Also, more male participants predicted that the calm character would attribute hostile intent and that the angry character would respond aggressively.

Groups were well matched for age, verbal and nonverbal reasoning as well as IQ. There was a slightly larger proportion of males in the aggressive group, however, this difference was not found to be significant. The sample was relatively large in comparison to the four other studies, with groups of 43 and 46 participants. However, authors did not indicate whether a power calculation was conducted or whether the final sample size satisfied the recommendations of such a calculation.

Pert et al (1999) examined the role-taking abilities of aggressive and non-aggressive participants utilising the same task outlined by Jahoda et al (2006a). Only the aggressive group predicted that the angry character would attribute more hostile intent than the calm character. They demonstrated that in some scenarios, the groups predicted significantly different attributions and reactions of the aggressive and calm characters. A larger proportion of aggressive participants predicted that the angry character would attribute hostile intent and that the calm character would not. There were no such proportional differences in the predictions of the non-aggressive group. As such, the aggressive group were better at taking on the viewpoint of angry and calm characters. However, direct

comparisons were not made between the role-taking of aggressive and non-aggressive groups. As such, although results show that only participants with problems of aggression took on the viewpoint of different characters, they can not show whether there are statistically significant differences in the abilities of aggressive and non-aggressive groups.

Quality Rating Ic

In addition to using a facial expression recognition task similar to that of Jahoda et al (2006a), Walz and Benson (1996) included a task testing perception of specific facial cues. Table 7.1 shows that significant group differences were not found in response accuracy for either measure. However, comparisons of the groups' incorrect responses revealed that aggressive participants were more likely to mislabel expressions with a negative emotion (angry, sad) than non-aggressive participants.

With groups of 18 aggressive and 21 non-aggressive participants, the sample was relatively small. However, groups were well matched for age and vocabulary. Given that only male participants were included, it cannot be presumed that findings are representative of emotional understanding of females with IDs.

Matheson and Jahoda (2005), a second study to be rated 1c, examined emotion recognition using the same facial expression stimuli as Jahoda et al (2006a). With a view to a more ecologically valid investigation of emotion recognition, the authors included two additional tasks using more naturalistic stimuli. One task, similar to the facial expression task, included photographs of people expressing emotions in contexts typical of that emotion (e.g. fear at seeing a spider). In the other task, participants were shown cartoon images of similarly emotion-typical scenarios. In each example, the faces of the protagonists were blank and participants were asked to choose from a number of faces showing various emotions. While no group differences were found in the recognition of facial expression, aggressive participants were poorer at labelling emotions in context rich scenes. They were also more likely to mislabel characters' emotions by choosing angry faces in the cartoon task.

The authors themselves highlighted that several aggressive group members had not exhibited significant inter-personal aggression. Also, all measures other than the de-contextualised facial emotion items (Ekman, 1976) were developed for the study and remain untested in other research studies. While all new measures attained moderately high

to high inter-rater agreement, the reliability and validity of the measures are yet unproven. A ceiling effect in the non-emotion control tasks was also reported and the authors indicated that the cartoon task requires further development, revealing that it was difficult to develop scenes that clearly conveyed one specific emotion. Finally, the sample was relatively small limiting the power of the study.

Quality Rating IIa

Woodcock and Rose (2007) used a similar facial emotion recognition task to examine the relationship between self-reported anger and emotion recognition. In order to increase the likelihood of detecting group differences, participants were asked to imagine that they were talking to the character in each picture while it was being presented. As Table 7.1 shows, correlations were not found between anger and facial emotion recognition. There was a notable trend where high-anger participants were less accurate at identifying neutral expressions. In the context of this review, a clear limitation of this study is that group membership was on the basis of self-reported levels of anger rather than aggressive behaviour. As such, the study only indirectly examined problems of aggression in adults with IDs.

SOCIO-EMOTIONAL UNDERSTANDING: DISCUSSION

Most notably, none of the selected studies supported the hypothesis that deficits in role-taking ability is related to aggression in people with IDs. Indeed, the results of Jahoda (2006a) and Pert (1999) suggest that aggressive people with IDs may have slightly better role taking abilities than their non-aggressive peers. Aggressive participants were at least as good as their peers at differentiating between the possible reactions of a calm character and an angry character.

There was no clear evidence that aggressive people with IDs were deficient at facial emotion recognition. However, all of the studies that examined facial emotion recognition employed two-dimensional pictorial stimuli. Findings in neuropsychology suggest that real-time cues play an important part in facial emotion identification (LaBar et al, 2003). It

has also been shown that individuals with autism do not show the same degree of improvement in facial emotion recognition as individuals without ASDs when dynamic stimuli are used instead of static stimuli (Pelphrey et al, 2007). It is possible that other previously undetected differences between other groups, such as aggressive and non-aggressive individuals, would be detected by comparing emotion recognition of dynamic cues.

Two studies, both rated Ic, found that aggressive individuals were more likely to mislabel facial expressions as a negative emotion than non-aggressive individuals. However, two other studies, including the study assigned a quality rating of Ib, failed to find this difference. It is possible then that while aggressive people with IDs are as accurate as their peers at recognising static facial expressions, they may tend to interpret expressions more negatively. However, results are inconclusive at this point.

Matheson and Jahoda (2005) found group differences in emotion recognition ability when contextually rich stimuli were used. These findings suggest that while acuity to static facial expressions of aggressive and non-aggressive people with IDs appears to be comparable, there may indeed be other differences in other emotional perception abilities. It is feasible that rather than simple deficits in recognising emotional cues, people with aggression problems may have difficulties weighing up the complex array of social cues, often conflicting, that are present in real-life situations. It is equally possible that there are group differences in the ability to identify emotion from other specific types of social cues that were presented in Matheson and Jahoda's (2005) stimuli.

There is perhaps enough evidence to suggest that there may be interesting differences in socio-emotional processing between adults with IDs with and without problems of aggression. However, it would appear unlikely that such differences include a straightforward deficit in facial emotion recognition. Further research would be required to clarify the nature of any relationship between aggression and emotional perception.

7.5.2. Interpretation of Cues

Once social information has been encoded, the next step of SIP is to interpret this information. Six studies were identified that examine how meaning is ascribed to encoded social information. One study examined the abilities of aggressive individuals with IDs to interpret social situations while the other five explored how intent is attributed to others.

7.5.2.1. Socio-situational Understanding

Table 7.2. illustrates the main details of the one study that examined socio-situational understanding.

Table 7.2. SOCIO-SITUATIONAL UNDERSTANDING

Study	Quality	Type of study	Participants	Main measures	Procedures	Findings	Limitations
Binzley, V. A; Shah, P; Polomsky, P (1986)	IIc	Cross-sectional; Agg and NAgg groups.	People with mild to moderate IDS; (16 aggressive people, 16 non-aggressive people.)	Test of Social Influence: 14 pictures depicting various social situations.	Participants asked to describe what was happening in pictures.	No group difference in social perception accuracy.	All participants lived in hospitalised setting. As study also investigated group differences in other environmental and cognitive factors (e.g. social deprivation, depression) none of these factors were controlled for. No controls for verbal ability; authors did not report use of power calculation.

Quality Rating IIc

Binzley et al (1986) asked participants to describe pictures depicting a variety of social situations. The accuracy of their inferences were used as a measure of overall "social perception accuracy". No difference in social perception accuracy was identified between participants with and without problems of aggression. While their study was not conducted from the framework of SIP, it can be seen as pertaining to the "cue interpretation" stage of the SIP model. However, while SIP depicts cue interpretation as a number of separate processes and aptitudes (e.g. causal attribution, intent attribution), the study in question treated social perception as one, general, ability.

Groups were well matched for IQ, gender and social age. The authors conceded that because the staff who conducted the tests knew the participants, they were not blind to group-membership. While there was acceptable inter-rater agreement (87.5%) on responses, this still leaves the possibility of experimenter bias. It is perhaps only fair to say that this limitation may apply to other studies under review where no information about blinding was presented.

As Table 7.2. shows, all participants lived in a hospitalised setting. Given the recent move towards community integration of people with IDs, the number of people living in hospitalised settings has reduced dramatically (SE, 2000; DoH, 2001). Hence, it is not possible to conclude whether the results from this group would generalise to the large proportion of individuals with IDs living in other residential settings. Notably, the researcher found that the aggressive group were institutionalised earlier and suffered more social deprivation which could suggest that social context may be related to aggression in this group. Finally, the task ultimately tested participants' ability to describe social situations and from this, participants' ability to understand social situations was extrapolated. As there were no specific controls for verbal ability, communication abilities may have been a confounding influence.

No evidence of differences in socio-situational understanding was found. Furthermore, limitations in the design of the study and the simplified conceptualisation of social perception may limit the value of findings.

7.5.2.2 Attribution of Hostile Intent

In total, five of the fourteen articles included in this review examined cognitive biases associated with the interpretation stage of the SIP. Specifically, they focused on whether aggressive people interpret others' behaviour as intentionally hostile more often than less aggressive people.

To examine perceptions of intent, studies often use tasks that utilise illustrated vignettes of social encounters. Often, vignettes depict scenarios where the protagonist is either being hostile or is behaving in a non-provocative manner. Additionally, some studies include scenarios where the intent of the other person is ambiguous. Such conditions allow a study to explore whether any observed sensitivities towards perceiving hostility in others are limited to clearly provocative scenarios or whether aggressive individuals are more likely to perceive hostility in other situations where the protagonist's intentions are unclear.

Commonly, some scenarios will be presented as if they are actually happening to the participant (self-referent condition) while others will be presented in the third person or as if they are happening to someone else (other-referent condition). The inclusion of such conditions makes it possible to explore whether differences in how aggressive and non-aggressive people perceive hostility are only found when the perceived hostility is felt personally.

Table 7.3 ATTRIBUTION OF HOSTILE INTENT (p.1 of 2)

Study	Quality	Type of study	Participants	Main measures	Procedures	Findings	Limitations
Jahoda et al (2006b)	Ib	Cross-sectional; Agg and NAgg groups.	People with Mild-moderate IDs (43 aggressive people, 46 non-aggressive people).	Three provocative stories, four ambiguous stories and three positive stories	Participants were asked to indicate whether the characters' behaviour in the stories was hostile. A self-referent condition was included where participants were asked to imagine themselves as the character in the scenes.	Agg group attributed hostile intent significantly more often than the NAgg group but only in the self-referent condition. Agg group identified provocative scenes more accurately. No group differences were observed in ambiguous scenes.	Authors do not indicate the use of power calculation.
Basquill et al (2004)	Ib	Cross-sectional; Agg and NAgg groups.	Males with mild IDs (22 aggressive people, 23 non-aggressive people).	Vignettes as per Jahoda et al (2006b)	Attribution task as per Jahoda et al (2006b) without self-referent condition.	Agg Ps significantly poorer at identifying non-hostile situations than Nagg participants. No group differences in attribution for hostile and ambiguous scenes.	Authors do not indicate the use of power calculation.; no self-referent conditions; all male sample.
Pert et al (1999)	Ib	Cross-sectional; Agg and NAgg groups.	People with mild to moderate IDs (22 aggressive people, 22 non-aggressive people).	Two provocative stories, three ambiguous stories and two positive stories.	Attribution task as per Jahoda et al (2006b) Including self-referent condition. In other-referent condition, participants asked to imagine being either an angry or a calm person.	Agg participants displayed a hostile bias in their attribution of intent in ambiguous scenarios for the self-referent condition. Group differences not found for calm persona or angry persona conditions or for provocative stories.	Authors do not indicate the use of power calculation.

Table 7.3. ATTRIBUTION OF HOSTILE INTENT (p.2 of 2)

Study	Quality	Type of study	Participants	Main measures	Procedures	Findings	Limitations
Fuchs and Benson (1995)	IIIb	Cross-sectional; Agg and NAgg groups.	Men with borderline to moderate IDs (16 aggressive people 19 non-aggressive people)	Four ambiguous and four hostile vignettes.	Attribution task as per Jahoda et al (2006b) without self-referent condition.	No group differences in attribution of hostile intent.	ID not verified by validated assessment; small N; no self-referent condition; did not control for role-taking ability; all male sample, authors do not indicate the use of power calculation
MacMahon et al (2006a)	IV	Single-participant.	44-year old man with mild IDs and history of frequent aggression.	The vignettes developed for Jahoda et al (2006b). Autobiographical mood induction procedure.	Attribution task as per Jahoda et al (2006b), including self-referent condition. Levels of anger arousal were varied between trials.	No difference in hostile attribution was found between self-referent and other-referent conditions. Anger induction increased hostile attribution in self-referent condition but not in the other-referent condition. Inducing calmness reduced hostile attribution.	As single participant design, only descriptive analysis was possible. Non-standard anger measures used.

Quality Rating Ib

Jahoda et al (2006b) used illustrated vignettes depicting social encounters to examine attribution of intent. Participants were read provocative, ambiguous and positive stories and then asked if a particular character was being hostile. In half of the vignettes, participants were asked to imagine themselves as the protagonist. The aggressive group attributed hostile intent significantly more often than the non-disabled group and this effect was only observed in the self-referent condition. Aggressive people with IDs were more accurate at identifying provocative scenes than their non-aggressive peers while no group differences were observed for the ambiguous scenes. When the results of four outliers (that had attributed hostile intent for every scene) were removed, aggressive participants were found to attribute more hostile intent in both provocative and ambiguous scenes than the non-aggressive group.

Basquill et al (2004) examined attribution of intent in 22 aggressive and 23 non-aggressive males with mild IDs. As illustrated above in Table 7.3, the authors found that the aggressive group were significantly poorer at identifying intent in non-hostile situations but found no group differences in attribution for the hostile and ambiguous scenes. The sample was larger than that of many other studies. However, all participants were male and, consequently, it is not possible to say whether findings can be generalised across gender.

Pert et al (1999) included a self-referent condition as well as an additional condition where participants were asked to imagine themselves as an 'angry' or a 'calm' person. Aggressive participants were more likely than the non-aggressive group to attribute hostile intent in ambiguous scenarios but this effect was only found for the self-referent condition. Differences in attribution of intent between aggressive and non-aggressive participants were not found for calm persona or angry persona conditions or for provocative stories.

Conditions where participants were asked to assume the role of angry or calm characters were included at the expense of the other-referent condition used by Jahoda et al (2006a) and Basquil et al (2004). This was in order to examine participants' insight into the likely responses of the characters. However, there was, consequently, no condition where the participant was a neutral observer. It is thereby impossible to draw conclusions about whether biases observed in aggressive participants are limited to situations where they feel personally threatened or whether there is a more general difference in the way that they interpret social information. Groups were well matched for gender. All participants

displayed sufficient verbal reasoning to participate in the study and groups were found to have similar IQ conversion scores. However, although the sample was relatively large, authors did not indicate whether a power calculation had been conducted. Also, no information was given of how well matched the groups were for age.

Quality Rating IIIb

Using similar methods as Jahoda et al, (2006b), Fuchs and Benson (1995) examined several social-information processing skills, including perceived intent of others, in 16 aggressive and 19 non-aggressive men with borderline to moderate IDs. They did not find significant differences in attribution of hostile intent between aggressive and non-aggressive groups.

Fuchs and Benson (1995) did not include a self-referent condition in their study. Since two of the studies discussed previously only found group differences for self-referent vignettes, it is possible that the inclusion of such a condition may have yielded different results. Although records from services suggested that all participants were in the range of moderate to borderline IDs, the authors did not indicate that this was verified by a validated assessment. As outlined above in Table 7.3, the sample size was relatively small. Furthermore, as the whole sample was male, it is not possible to say whether results would generalise to females with IDs. It is also worth noting the range in the severity of participants' IDs. Since the relationship between SIP and aggression may differ between people of different levels of ID, the inclusion of individuals in the borderline range of intellectual abilities may have introduced a potential confounding variable to this study (Emerson et al, 1997).

Quality Rating IV

Recent permutations of the SIP model account for the influences that emotion arousal can have on behaviour, in that emotions such as anger and frustration have been identified as having key mediating roles on aggression (Lemerise & Arsenio, 2000; Berkowitz, 1978). Incorporating emotion in this way effectively widens the scope of the SIP model's account of aggression.

Rather than directly examining the link between processing styles and aggression, MacMahon et al (2006a) investigated how anger arousal affects the attribution of hostile intent. They used a single-case methodology with a 44 year old man with mild ID and a history of serious aggression. A vignette-based task, similar to those outlined previously, was used. However, the authors included a condition where anger arousal was manipulated using autobiographical stories. As Table 7.3 illustrates, the results did not demonstrate a difference in hostile attribution between self-referent and other-referent conditions without anger arousal. However, they did find that anger induction increased hostile attribution in self-referent condition but not in the other-referent condition. They also found that inducing calmness reduced hostile attribution.

In keeping with the nature of single-case methodology, only small quantities of data were collected and formal statistical analysis was not deemed suitable. Indeed, the experimenters themselves conceded that their finding of a self-referent effect was based on a difference of only two responses. Clearly, as this study included only one participant, findings may not be generalisable across larger populations.

ATTRIBUTION OF HOSTILE INTENT: DISCUSSION

Three of the four studies that examined group differences in attribution of intent found significant differences between aggressive and non-aggressive participants. This includes the two most highly rated studies (Basquill et al, 2004; Jahoda et al, 2006b). It is worth noting that these three studies found group differences in different conditions. While one study found that aggressive individuals attributed more hostility in provocative situations, the second study found such differences in responses to non-provocative situations and the third found differences for ambiguous scenarios. The evidence does seem to suggest that aggressive people with IDs attribute more hostile intent than their non-aggressive peers. However, whether this difference constitutes a positive or negative bias is unclear.

Jahoda et al (2006b) did find that aggressive participants were significantly more accurate at attributing hostile intent in provocative trials. If anything, this might tenuously suggest that people with IDs without problems of aggression display a bias against attributing hostile intent. However, this finding was not replicated across other studies so it is far from clear that such a bias exists. Similarly, there was no clear evidence that aggressive people are overly sensitive to, or 'biased' towards, perceiving hostility. With this in mind, it may

be worth reconsidering the terms in which intent attribution in people with IDs is discussed. Instead of negative or positive 'biases', differences between aggressive and non-aggressive people with IDs can perhaps be better described as a matter of attributional style. The word 'style' might be more fitting as it can express differences in the attributions that people make without suggesting that one tendency is in some way more accurate or correct than another. This would seem to reflect the current evidence regarding attribution of intent by people in this group. It is also in keeping with the view of several researchers conducting similar work with the typically developing population, that the normative connotation of the term 'bias' may not be appropriate for this phenomenon (Orobio de Castro et al, 2002; Trachtenberg & Viken, 1994; Fontaine et al, 2010).

The results of MacMahon et al (2006a) suggest that anger might play an important mediating role in hostile intent attribution. As well as having implications for how the mechanisms of aggression in people with IDs should be conceptualised, this would have direct implications for research into intent attribution where tendencies towards perceiving hostility in others may be dependent on emotional arousal. As it was a single-case study, further research is necessary before conclusions can be drawn.

Overall, the findings of the five studies that examined attribution of intent suggest that processing tendencies related to the 'interpretation of cues' step of SIP may be related to aggression in this group (see Figure 2.1, p.18). The results of McMahon et al's (2006) single participant study also give an indication that anger arousal might facilitate the styles of processing that contribute to aggression lending some support to recent versions of the SIP model (Lemerise & Arsenio, 2000).

7.5.3. Clarification of Goals

Thus far, the present review has considered studies examining how interpretations of social behaviour might contribute to aggressive behaviour; processes that correspond to the first two stages of Lemerise & Arsenio's (2000) SIP model (see Figure 2.1 on p.18). Some recent studies have also started to investigate whether aggressive and non-aggressive individuals are motivated to achieve different outcomes from difficult social situations. One study was identified that looked at the social goals of aggressive people with IDs (see Table 7.4 below). In the context of the SIP model, social goals can be considered as the desired outcomes of the reaction to a given situation, occurring before and indeed mediating the response generation stage (see Figure 2.1 on p.18).

Table 7.4 SOCIAL GOALS

Study	Quality	Type of study	Participants	Main measures	Procedures	Findings	Limitations
Pert and Jahoda (2008)	Ib	Cross-section al; Agg and NAgg groups.	20 Agg participants with mild-moderate IDs, 20 Nagg participants with mild-moderate IDs.	'Social Goal' task using one vignette in which a peer is hostile. Responses to open-ended questions coded as "seek revenge", "show strength", "seek a fair outcome" or "avoid conflict".	Participants asked to describe how they would react to the provocation in the vignette and explain their response.	Significantly more Agg participants aimed to "show strength" to avoid future maltreatment. More NAgg participants aimed to find a fair solution. No reports of seeking to "avoid conflict" from Agg participants.	Only one vignette used. No indication that power calculation was used.

Quality Rating Ib

Pert and Jahoda (2008) examined the role of social goals in aggression by presenting participants with a provocative vignette and asking 1) how they would react, and 2) why they would react that way. As outlined in Table 7.4, the aggressive and nonaggressive groups reported significantly different social goals behind their reactions. Most non-aggressive participants said that they were seeking a "fair solution" while most aggressive participants sought to "show power". There were no reports of seeking to "avoid conflict" from the aggressive group. No gender differences were found.

Groups were well matched for gender, age, verbal ability and non-verbal ability. The main measure recorded the social goals behind participants' responses to one vignette which depicted a peer stealing the participant's drink. Arguably, another limitation was the choice to use male protagonists for male participants and females for female participants. It has been argued that using vignettes with protagonists of different genders might make responses incomparable (Perry et al, 1986).

In future studies, it would be valuable to investigate group differences in social goals for a greater number of potentially salient provocative scenarios. Not only could this show whether these findings hold true in different scenarios, it could indicate which types of social interactions are particularly likely to elicit hostile motives such as "seeking revenge" or "showing strength" in aggressive people with IDs.

Nonetheless, results do suggest that aggressive and non-aggressive people with IDs may aim to achieve different goals when they respond to hostility. Thus, social goals should perhaps be seen as an important area for future research into the relationship between SIP and aggression in adults with IDs.

7.5.4 Response Access/ Construction

7.5.4.1 Social Problem-Solving Skills

Social problem-solving deficits have often been cited as an important element in aggression in people with IDs (Gardner and Cole, 1989). In its everyday usage, the phrase 'problem-solving skills' can refer to a rather wide range of aptitudes in various domains of life. In the terms of the SIP model, problem-solving skills usually refers to an individual's ability to generate appropriate responses to a given interpersonal situation (Dodge, 1986). If an individual is poor at generating adaptive responses to interpersonal situations they may be more likely to choose maladaptive responses such as excessive aggression (Dodge, 1986). Research with non-disabled participants has suggested that aggressive individuals can have poorer problem-solving skills than their non-aggressive peers (D'zurilla et al, 2010; Cooper, 2010). Aggressive children have been shown to generate fewer, more aggressive and less effective alternative solutions to potentially provocative scenarios (Lochman et al 1985; Richard and Dodge, 1982). Aggressive children have also been found to be poorer at predicting the consequences of their actions (Dodge, 1986). Three studies were retrieved that examined whether such problem solving skills have a role in aggression in adults with IDs. Details of the studies are outlined below in Table 7.5.

Table 7.5. PROBLEM SOLVING

Study	Quality	Type of study	Participants	Main measures	Procedures	Findings	Limitations
Basquill et al (2004)	Ib	Cross-sectional; Agg and NAgg groups.	Males with mild IDs (22 aggressive people, 23 non-aggressive people).	Problem Solving task using five interpersonal vignettes, typical of everyday problems of adults with IDs, and four clearly provocative situations.	For each scenario, participants asked to describe problem, offer solutions to the problem, describe negative and positive consequences of each and choose the "best" response. Responses allocated "quality scores" by two independent raters based on effectiveness, accuracy and/or relevance of responses.	Agg group's responses to both the hostile and non-hostile vignettes received significantly lower overall quality ratings. Agg group showed poorer ability to identify consequences of solutions in both types of vignettes and offered significantly more aggressive responses.	All male sample; subjective nature of "quality" scores; use of power calculation not indicated.
Pert and Jahoda (2008)	Ib	Cross-sectional; Agg and NAgg groups.	20 Agg participants with mild-moderate IDs, 20 Nagg participants with mild-moderate IDs.	Problem solving task using vignette outlined in Table 7.4.	Participants asked to outline how they would respond to the vignette in order to "avoid trouble", "get back at the person", "show strength", "maintain self-esteem" or gain "peer approval". Responses categorized as assertive, aggressive or passive.	No group differences were found for any of the five goals	Only one vignette was used; use of power calculation not indicated
Fuchs and Benson (1995)	IIIb	Cross-sectional; Agg and NAgg groups.	Men with borderline to moderate IDs (16 aggressive people 19 non-aggressive people)	Problem solving task using vignettes outlined Table 7.3.	Ps were asked to offer as many possible solutions as they could to the scenarios. Responses were classified as assertive, passive or aggressive.	Agg group generated more aggressive solutions. No significant group difference in the number of responses generated. No significant difference in number of assertive or passive responses generated. Agg group gave significantly more aggressive first responses. NAgg group gave more assertive first responses.	Relatively small N; ID not verified by validated measure.

Quality Rating Ib

Basquill et al (2004) utilised a task, developed specifically for use with people with IDs, that examines distinct problem-solving skills: problem definition, generation of response options, consequence identification and decision-making (Nezu et al, 1991). As described by Table 7.5, participants were presented with a variety of social scenarios and asked to answer questions pertaining to these problem-solving skills. Responses were then assigned ratings by two independent raters to ascertain the 'quality' of the responses.

Overall, aggressive participants received significantly lower overall quality ratings in both hostile and non-hostile vignettes and offered significantly more aggressive responses. Though not statistically significant, aggressive participants generated poorer quality alternatives than the non-aggressive group. Aggressive participants also tended to display poorer problem definition but this was not significant.

As mentioned previously when discussing hostile attribution style, the results of this study cannot be generalised to females and the power of the study was not indicated by authors. The main measure in this study achieved a good interrater reliability and has relatively high content validity. However, in using subjective ratings of response 'quality' as the main form of data, the study is somewhat open to experimenter biases. Nezu et al (1991) defined a high quality response as "one that has a high likelihood of solving the problem while maximizing the probability of additional positive effects and minimizing the likelihood of additional problems from occurring". As more detailed criteria are not offered, it is unclear whether the comparative weight of each of these three factors was left to the discretion of the rater. Moreover, while Basquill et al (2004) quote Nezu et al, (1991) within their measures section, they do not state whether they applied the quality criteria recommended by the earlier study or whether alternative, undisclosed, criteria were used.

Using the same provocative vignette used to examine social goals, Pert and Jahoda (2008) went on to compare the strategies that aggressive and non-aggressive participants could generate to meet five predefined goals. Participants were asked to offer responses to the situations that would "avoid trouble", "get back at the person", "show strength", "maintain self-esteem" and gain "peer approval". Rather than evaluating the 'quality' of responses, responses were rated as either aggressive, assertive or passive. As Table 7.5 shows, no group differences were found for any of the five goals. As discussed in the section

addressing Social Goals, one possible shortcoming of this study is that findings were based on responses to only one specific scenario.

Quality Rating IIIb

Fuchs and Benson (1995) compared the solutions to social conflict scenarios generated by aggressive and non-aggressive groups. They found that aggressive participants generated more aggressive solutions. However, there was no significant difference in the total number of responses generated. There was also no significant difference in the number of assertive or passive responses generated. The aggressive group gave significantly more initial aggressive responses and the non-aggressive group tended to give more initial assertive responses. As discussed in the section regarding intent attribution, Fuchs & Benson's (1995) sample was relatively small, all male and included individuals with IQs in the borderline of ID.

PROBLEM-SOLVING SKILLS: DISCUSSION

Two of the three studies, including one with the highest rating, found that aggressive people with IDs tended to produce more aggressive responses than their non-aggressive peers when presented with provocative situations. Findings of both studies then suggest that differences in problem solving 'style' may contribute to aggression in people with IDs. Basquill et al (2004) also recorded results in keeping with the idea of a problem solving 'deficit'. It is notable that group differences in solution generation and identified consequences found in that study were characterised by differences in perceived quality of solutions rather than the absolute number of solutions generated. Fuchs and Benson (1995), who did not find group differences in problem solving ability, utilised a different system. Rather than assessing the quality of the responses, they recorded the number of assertive, aggressive or passive responses. While the groups in Fuchs and Benson (1995) generated as many responses definable as 'assertive', it is possible that responses generated by aggressive participants would have been rated as less effective or as being of poorer 'quality' if rated by independent raters. Similarly, Pert and Jahoda (2008) controlled for participants' typical response generation tendencies in order to examine their abilities to generate specific types of responses. However, their study also used the number of options generated as the sole measure of problem solving ability and was therefore also insensitive to option 'quality'.

Overall, current findings show group differences in problem-solving that could be seen as evidence of problem-solving deficits in aggressive participants. They also suggest that aggressive people generate proportionally more aggressive options when considering possible responses. However, further research is necessary to clarify whether aggressive people with IDs are poorer at generating alternative responses.

7.5.5 Response Decision

According to the Lemerise and Arsenio (2000) model, the final stages of SIP involve choosing and enacting a response to the social situation (see Figure 2.1. on p.18). In some ways, research into this stage of the SIP with people who have IDs is perhaps particularly interesting. In general, it is thought that processes at the response decision stage of SIP may sometimes be skipped by impulsive processing (Fontaine & Dodge, 2006). A typical case might be where the arousal of extreme anger overrides more considered processing leading to an impulsive reaction such as reactive aggression. One might also expect such pre-emptive processing to be more common in individuals who have an impulsive nature. Given that people with IDs are often identified as having poor executive function, one might predict that if there is one area of SIP typically linked to aggression that might not apply to individuals with IDs, it might well be the response decision stage (Henry & Maclean, 2003). Indeed, recent research into SIP of aggressive children with IDs found that this stage of processing may not be important to aggression in this group (van Nieuwenhuijzen et al, 2006). The following section considers the evidence for the role of response decision processing in aggression in adults with IDs.

7.5.5.1 Outcome Expectancy

In a given interpersonal situation, the beliefs that people have about the potential consequences of possible responses are likely to contribute to their response decision (Fontaine et al, 2010; Perry et al, 1986). Research with non-disabled participants suggests that aggressive children view aggressive behaviour more favourably than their peers and are more likely to believe that aggression would lead to tangible rewards (Slaby and Guerra, 1988; Perry et al, 1986). Two recent studies have been identified that investigate what outcomes aggressive people with IDs expect from different types of behaviour (see Table 7.6 below).

Table 7.6 OUTCOME EXPECTANCY

Study	Quality	Type of study	Participants	Main measures	Procedures	Findings	Limitations
Pert and Jahoda (2008)	Ib	Cross-sectional; Agg and NAgg groups.	20 Agg participants with mild-moderate IDs, 20 Nagg participants with mild-moderate IDs.	Outcome expectancy task involving two illustrated provocative vignettes.	Participants asked the open-ended question: "what would happen if you shouted at the protagonist?" for one vignette and asked to imagine not responding to the other. Participants asked fixed-choice questions regarding "tangible reward", "self-condemnation", "reduction of aversion in future", "effect on victim", "peer approval" and "authority approval" about each reaction. Participants also asked how they would feel about each reaction.	No significant differences were found for predicted outcome of aggression. Both groups predicting high authority disapproval and no instrumental rewards. For predicted outcome of submissive response, more Agg participants expected peer disapproval and to feel bad about themselves. More Nagg participants thought submissiveness would reduce hostility of others. None of these trends were significant.	No mention of power calculation; only 2 vignettes; only tested verbal aggression.
Kirk et al (2008)	Ic	Cross-sectional; Agg and NAgg groups.	Ps with mild to borderline IDs; N1=18 aggressive people, N2=18 non-aggressive people.	Outcome expectancy task involving ten illustrated stories depicting a protagonist treating the participant in a clearly hostile manner.	For three stories, participants asked to imagine reacting with verbal aggression. For another three stories, depicting the same type of situation, asked to imagine reacting submissively. Four positive scenes were interspersed with the test stories to prevent negative response sets. Participants asked to predict the consequence of each reaction, how peers would evaluate them and how they would evaluate themselves.	Agg group were significantly more likely to predict positive outcome, positive peer evaluation and positive self-evaluation following aggressive responses. Nagg Ps significantly more likely to predict positive peer evaluation of submissive behaviour.	Relatively small N; only tested verbal aggression.

Quality Rating Ib

Pert and Jahoda (2008) compared predicted outcomes of submissive and verbally aggressive reactions to two provocative situations depicted in illustrated vignettes. As Table 7.6 shows, no significant differences were found for predicted outcome of aggression with both groups predicting high authority disapproval and no instrumental rewards. More aggressive participants expected peer disapproval and to perceive themselves in a negative light, if they responded submissively to provocation. Non-aggressive participants were more likely to think submissiveness would reduce the hostility of others. However, these trends were not significant.

With trends implying possible group differences in predicted outcome of submissive reactions, it may be that a larger sample size would have allowed significant differences to be detected. The small number of vignettes makes it difficult to generalise findings. Furthermore, researchers chose to omit a "physical aggression" condition as piloting suggested that some participants struggled to imagine being physically aggressive and were reluctant to give clear responses. Views regarding physical and verbal aggression may be quite different and as such, generalisations about outcome expectancy of physical aggression cannot be made.

Quality Rating Ic

Kirk et al (2008) used a similar task to Pert & Jahoda et al (2008) with people with mild to borderline IDs. While the latter used forced-choice questions, Kirk et al (2008) reported on responses to open-ended questions. Aggressive participants were significantly more likely to predict a positive outcome, positive peer evaluation and positive self-evaluation following an aggressive response. Non-aggressive participants were significantly more likely to predict positive peer evaluation for submissive behaviour. Non-aggressive participants also tended to predict more positive consequences and self-evaluation but these differences were not significant.

Groups were well matched for gender, age, IQ and residential setting. Interrater reliability for forced choice questions was acceptable. As in Pert and Jahoda (2008), the sample size may have prevented notable trends in the submissive condition yielding further statistically significant results. Authors admitted that this prevented analysis of potentially useful covariates like gender. Different versions of each vignette were used with male and female

participants, with the protagonists always being the same sex as the participant. Some have argued that since members of both sexes may react to males and females differently, this may render the results for males and females incomparable (Perry et al, 1986). Finally, the inclusion of participants in the borderline range of IDs may limit how well the sample represents adults with IDs.

OUTCOME EXPECTANCY: DISCUSSION

The group differences detected by Kirk et al (2008) echo the trends found by Pert and Jahoda (2008) suggesting that aggressive people anticipated more positive outcomes from aggressive behaviour than non-aggressive people. Findings also suggest that aggressive individuals expect more negative peer-evaluation of submissive behaviour. However, as both studies used relatively small samples and employed idiosyncratic measures, further research is required to verify the role of outcome expectancy in aggression in people with IDs. As suggested by Kirk et al (2008), future research may wish to investigate the weight of importance that individuals give to different types of outcome (e.g. self-evaluation, peer-evaluation, consequence). Furthermore, qualitative analysis of the kinds of positive and negative consequences that people expect of aggressive and submissive behaviour would offer more detailed insight into the beliefs of aggressive and non-aggressive people.

The measure used by Kirk et al (2006) included a greater number of vignettes than the measure employed by Pert and Jahoda (2008). Consequently, it is more appropriate to generalise findings from such a task across different situations of conflict. Indeed, similar studies in the future could include data illustrating which situations demonstrated the greatest group differences in outcome expectancy. This could potentially offer an insight into whether certain types of interpersonal situations tend to be particularly provocative to aggressive adults with IDs.

7.5.5.2 Predicted Response Decision

By the final step of SIP, the individual has interpreted the situation facing them, generated possible responses and considered the merits of each option (see Figure 2.1 on p.18). All that is left at this point is for the individual to select and enact their response (Lemerise & Arsenio, 2000). Clearly aggressive individuals will react more aggressively than non-aggressive individuals in a number of contexts. However, there is a finer level of detail to the response decision process that requires exploration. For example, it is possible to explore whether aggressive adults with IDs are more aggressive across different social scenarios or whether their aggression is limited to particular kinds of provocation. Also, it is possible to explore whether aggressive individuals are any more or less likely to respond assertively to different scenarios. Four studies were identified that examined the predictions made by aggressive and non-aggressive adults of how they would react to different types of social situations. The details of these studies are outlined in Table 7.7 below.

Table 7.7 RESPONSE DECISION

Study	Quality	Type of study	Participants	Main measures	Procedures	Findings	Limitations
Jahoda et al (1998)	Ib	Cross-sectional; Agg and NAgg groups.	People with moderate to borderline IDs (22 aggressive people, 22 non-aggressive people).	Word-stem completion task: 16 stressful word-stems and 16 positive word-stems.	Participants asked to complete word-stems	A significantly greater proportion of Agg group responses were aggressive. NAgg group produced a significantly greater number of assertive responses. Males produced a significantly greater proportion of aggressive responses. The group difference only held for men. NAgg males gave more passive responses than Agg males. NAgg females gave significantly more assertive responses than Agg females.	No mention of power calculation;. groups poorly matched for residential setting
Pert and Jahoda (2008)	Ib	Cross-sectional; Agg and NAgg groups.	20 Agg participants with mild-moderate IDs, 20 Nagg participants with mild-moderate IDs.	Response decision task using vignettes outlined above.	Participants asked to predict how they would respond to vignettes outlined above.	Agg group gave significantly more aggressive responses. The majority of Nagg group responses were assertive and proportionally more non-aggressive responses were assertive though this difference was not significant.	No mention of power calculation; only two vignettes were used.
Pert et al (1999)	Ib	Cross-sectional; Agg and NAgg groups.	People with mild to moderate IDs (22 aggressive people, 22 non-aggressive people).	Response decision task using vignettes outlined above.	Participants asked to predict how they would respond to vignettes outlined above.	Significantly more Agg participants said they would respond aggressively to both ambiguous and provocative situations. No differences found for assertive or passive solutions. Statistically non-significant trend of NAgg group reacting more passively than Agg group to provocative scenarios.	No mention of power calculation. Used only 2 vignettes.
Fuchs and Benson (1995)	IIIb	Cross-sectional; Agg and NAgg groups.	Men with borderline to moderate IDs (16 aggressive people 19 non-aggressive people)	Response decision task using vignettes as outlined above.	Participants were asked to choose the 'best' of three fixed choice response options for each vignette outlined above.	Groups were equally accurate at identifying the best solution.	Small N; no indication is given of what is meant by "best".

Quality Rating Ib

Jahoda et al (1998) asked participants to complete statements designed to elicit predicted responses to stressful and positive scenarios. Table 7.7 shows that the Non-aggressive group were found to produce a significantly greater number of assertive responses. Participants were not found to give different answers to word-stems set at work or at home contexts. Similarly, answers were not found to vary for word-stems relating to an authority figure or an unspecified person. Gender comparisons showed that men produced a significantly greater proportion of aggressive responses. Also, differences observed between aggressive and non-aggressive groups were only found to hold for the male participants. Non-aggressive males gave more passive responses than their aggressive peers though no group differences in assertiveness were found for males. In contrast, non-aggressive females gave significantly more assertive responses than aggressive females but no group differences in passiveness were found.

Groups were adequately matched for age, gender and IQ. With the deleterious effects of subgroup comparisons, the size of the sample has implications for the statistical power of findings pertaining to gender differences.

Pert and Jahoda (2008) compared aggressive participants' predicted responses to provocative situations. Aggressive participants predicted that they would give significantly more aggressive responses. The majority of the non-aggressive participants' predicted responses were assertive and proportionally more of their non-aggressive responses (i.e. assertive or passive responses) were assertive. However, this difference was not significant.

As outlined previously, the authors did not report using a power calculation. Also, given that only two vignettes were used, the extent to which findings can be generalised to other situations is uncertain.

Pert et al (1999) compared the predicted responses to the vignettes discussed previously in the section regarding socio-emotional understanding. Table 7.7 above shows that significantly more aggressive participants said they would respond aggressively to both ambiguous and provocative situations. No group differences were found for assertive or passive solutions to ambiguous or provocative situations. There was a notable trend in that non-aggressive participants reacted more passively than aggressive participants to provocative scenarios.

The power of the study was not reported by authors. As in Pert and Jahoda (2008), the study used only two provocative vignettes making it difficult to know how well findings generalise to other forms of provocation.

Quality Rating IIIb

After the initial vignette tasks outlined in the previous sections, Fuchs and Benson (1995) presented each of the eight situations to participants again and asked them to pick the "best" of three fixed-choice response options. It was found that both groups were equally accurate at identifying the best solution. However, no indication is given of what is meant by "best" so it is impossible to make any inferences from these findings.

RESPONSE DECISION: DISCUSSION

Studies were consistent in finding aggressive people with IDs to offer more aggressive response than their non-aggressive peers. Jahoda et al (1998) found that non-aggressive participants were significantly more likely to complete word stems with assertive responses than their aggressive peers. Pert and Jahoda (2008) found strong trends to similar effect. Non-aggressive participants in Pert et al (1999) also offered more assertive responses than the aggressive participants but this difference was minimal. It is possible that the stem completion task employed by Jahoda et al (1998), which included more items than the vignettes used in both other studies, was more sensitive to a group difference in assertive responses. Findings did not indicate group differences in passive responses though both Pert (1999) and Jahoda et al (1998) noted overall high levels of passive responses.

Pert et al (1999) was the only study to examine responses to both provocative and ambiguous situations. They found that the aggressive group gave significantly more aggressive responses in both conditions. This may suggest that aggressive adults with IDs are not necessarily only aggressive in response to clear provocation.

7.6. General Discussion

7.6.1. Summary

Before the main discussion, findings will be summarized briefly following the order of the different stages of the SIP model.

ENCODING OF CUES: Five studies focused on this initial step of SIP, each exploring aspects of socio-emotional understanding. The findings of two studies with quality ratings of IIb suggested that, if anything, aggressive individuals may be slightly better at anticipating the behaviour of others on the basis of their affective state. Studies employing static face stimuli failed to find deficits in emotion recognition. However, one study with a quality rating of Ic, found the aggressive group to be poorer at identifying emotions than the non-aggressive group when contextually rich stimuli were used. Findings of two studies, both rated Ic, suggested that aggressive people with IDs were more likely to label facial expressions negatively. However, two other studies, rated Ib and IIa did not find group differences. Future research is still necessary to fully understand the nature of the relationship between emotional understanding and aggression in people with IDs.

INTERPRETATION OF CUES: Six studies examined how aggressive people interpret social cues. One study that used a very general measure of participants' ability to interpret social situations found no evidence of group differences. Five studies addressed whether aggressive people were more likely to interpret the behaviour of others as hostile. Three of the five studies, including the two with the highest quality ratings, found evidence that aggressive people with IDs attribute more hostile intent than their non-aggressive peers. However, the types of situation (hostile, non-hostile, ambiguous) for which these differences were observed were inconsistent between studies. Based on this evidence, it is likely that aggressive people do attribute more hostile intent, but the nature of this difference and whether the differences constitute a hostile bias remains unclear.

CLARIFICATION OF GOALS: One study, with a quality rating of Ib, was found that explored the influence that social goals might have on aggression in people with IDs. It was found that the reactions of aggressive people with IDs to provocative situations are more likely to be motivated by showing strength than their non-aggressive peers while non-aggressive peers are more likely to be seeking a fair outcome. Findings suggest

previously undetected group differences between aggressive and non-aggressive people with IDs that are worthy of future investigation.

RESPONSE ACCESS/CONSTRUCTION: All three studies into response generation found that aggressive people with IDs tend to generate more aggressive alternatives than their non-aggressive peers. However, none of the studies found that non-aggressive people with IDs could produce more alternatives than their aggressive group. This fails to support the predictions of deficit theories of aggression that aggressive people would generate fewer alternatives. However, one of the highest rated studies also examined the quality of participants' responses, as rated by the experimenters, and found that aggressive participants offered poorer quality responses. It seems that aggressive people with IDs have a tendency towards generating more aggressive responses but further research is needed to confirm whether they are actually poorer at generating responses than their peers.

RESPONSE DECISION: Five studies examined factors relating to the decision making process. Two articles, rated Ib and Ic, looked at differences in the expected outcome of aggressive and submissive behaviour. The former found that aggressive participants were statistically more likely to predict positive outcomes from aggression and negative peer-evaluation from submissive behaviour. Both studies found that aggressive participants may have tended to expect more positive outcomes from aggressive behaviour and more negative outcomes from submissive behaviour. Results suggest a possible role for outcome expectancy in aggression.

As might be expected, three studies have found that aggressive people were more likely to offer aggressive responses to provocative situations than non-aggressive people. The only study to have examined responses to ambiguous situations found that aggressive participants were still significantly more likely to say they would respond aggressively. Another study, also rated Ib, found that non-aggressive participants were more likely to offer assertive responses. This finding fitted with statistically non-significant trends in the other two studies discussed.

7.6.2. Main Discussion

On considering the existing literature regarding SIP and aggression in people with IDs, several common issues emerge. For many of the SIP mechanisms, there were inconsistencies between the findings of the reviewed studies. For example, although three of five studies investigating attribution of intent found group differences, each found a significant result in a different condition (i.e. hostile, ambiguous, non-hostile). One possible reason for these discrepancies is that, overall, sample sizes of reviewed studies were relatively small. Indeed, not one study reported using a power calculation. It may be that better powered studies would have found more conclusive findings.

Research using SIP as a framework for exploring aggression in adults with IDs is in its relative infancy. For this reason, the selected studies generally used innovative, non-standardised measures. As research in this area progresses, it will be necessary to develop more standardised measures, allowing for more reliable comparison of findings between studies in reviews or meta-analyses.

A further limitation of the existing literature is that there are several demographic factors that are likely to have an impact on frequent aggression in adults with IDs but have yet to be taken into consideration. Firstly, although poorer SIP in males is thought to influence gender differences in the nature and prevalence of violence, few of the reviewed studies made gender comparisons (Bennett et al, 2005; Jahoda et al, 1998). Perhaps due to the deleterious effects of subdividing already small samples by gender, findings were inconclusive. There is also evidence that the importance of different stages of SIP may vary over the lifespan. (Fontaine, et al 2009). All of the reviewed studies included samples with very wide age ranges and none investigated these differences in adults with IDs. Future research may seek to compare SIP between aggressive adults of different age-ranges and adequately powered groups of males and females.

A key feature of the SIP model of aggression is that it highlights how cognitive reactions to social experiences can lead to behaviour. It is perhaps surprising then that few of the studies in this review reported information on the living environment of their participants. Indeed, of the three studies that gave a breakdown of group living situation, two revealed that the groups were poorly matched (Pert et al, 1999; Jahoda et al,1998; Kirk et al, 2008). In that residential setting has been found to have an influence on aggression in people with IDs, future research in this area should seek to minimize group differences in this respect (Tyrer, 2006).

In light of this finding, it would be worth exploring whether particular life experiences or environmental factors predispose people to developing "aggressive" patterns of SIP. Research has indicated that factors such as parental aggression might contribute to aggressiveness of offenders with IDs (Taylor et al, 2002). However, the developmental influence of such factors on the specific SIP processes that underpin aggression are yet to be investigated. Such insights could have important implications for preventative work and related social policy.

Finally, there were no studies found that examined SIP and aggression in people with IDs of specific etiologies. The prevalence of aggressiveness appears to vary between groups with different types of ID and it is certainly feasible that certain groups may demonstrate characteristic patterns of SIP (Tyrer et al, 2006).

7.6.3. Future Research

Each of the individual discussion sections above found that there was a need for further, well powered research into the areas of SIP under discussion. It is also worth noting that other aspects of SIP remain wholly unexplored in this population, including a number of factors linked to aggression in children and adults without IDs. For example, at the decision making stage of processing, the level of moral concern about aggression and the expected ease by which an aggressive response could be enacted have both been linked to aggression in adolescents (Arsenio et al, 2009). In time, the scope of research with people with the IDs should be widened to address such factors.

As well as identifying specific mechanisms underpinning aggression, there have been broader developments in SIP theory and research that have not been addressed by the ID literature. One consideration is that patterns of SIP are not constant for each individual and will vary depending on circumstances (Lansford et al, 2006). Knowing the features of the everyday experiences that aggressive individuals with IDs find provocative, such as particular locations or people, will be helpful when setting out to examine styles of processing that lead to aggressive behaviour. Perhaps most crucially, the perceived nature of others' behaviour will surely affect the likelihood of an aggressive response. For example, it might be that some people are particularly sensitive to being treated in a condescending manner or to being stigmatized for their disability. Such individuals might be more likely to respond aggressively to these specific forms of provocation than to

others. Research could examine the extent to which the "aggressive" styles of SIP described in this review are dependent on specific contextual features. Similarly, future research may wish to build on MacMahon et al's (2006a) single-participant study by exploring how factors such as emotional arousal affect SIP in aggressive individuals.

Individuals who are reactively aggressive may demonstrate differing patterns of SIP to those that are proactive in their aggressive behaviour. One study, with non-disabled adolescents, found that proactive aggression was associated with the later stages of SIP such as outcome expectation but reactive aggression was more associated with encoding stage biases and verbal ability (Arsenio et al, 2009). Studies investigating SIP and aggression in people with IDs have rarely made a distinction between proactive and reactive aggression. It is possible that due to the apparent association between cognitive deficits and reactive aggression, aggression problems in this group have tended to be considered a purely "reactive" phenomenon. However, it is likely that aggressive behaviour of many frequently aggressive individuals with IDs will be motivated as much by instrumental goals as reactivity to provocation. Therefore, in future research, care should be taken to examine whether there are distinct subgroups of adults with IDs with qualitatively different problems of aggression.

Finally, although factors of the SIP model appear to influence aggression in adults with IDs, studies with this group are yet to investigate the potentially complex relationships between these factors. There is, therefore, no evidence to suggest that the different mechanisms of SIP interact with each other in the way that the model proposes. This is important as the SIP model predicts specific relationships between stages and thus purports to be more than a "sum of its parts". Using structural modeling, one study with children with IDs found that response selection stage of the proposed SIP model was not necessary to explain aggressive behaviour in children with IDs (Van Nieuwenhuijzen et al, 2006). It could be argued that until similar studies examine the structure of SIP in adults, it is perhaps not yet appropriate to consider SIP an overall model of describing aggression in adults with IDs. However, the findings of the studies included in this review do indicate that SIP is a useful model for describing specific psychosocial factors underlying aggression in this group.

7.6.4. Conclusion

The review shows that aggressive adults with IDs demonstrate patterns of social information processing that are distinct from their non-aggressive peers. These findings were broadly in line with those of studies with non-disabled people (e.g. Crick & Dodge, 1994). There is evidence that aggressive adults with IDs may interpret the facial expressions of others more negatively and attribute more hostile intent in social situations. There is further evidence that aggressive individuals may seek different outcomes from social situations and predict more favourable outcomes from aggressive responses. It also appears that such individuals are more likely than non-aggressive individuals to respond aggressively to social situations and are less likely to respond assertively. Finally, the review also found some tentative evidence of aggressive individuals with IDs demonstrating specific deficits in emotional perception of contextual cues and in problem-solving skills.

While the reviewed literature shows the importance of cognitive factors in the aggression problems in this group, the extent of the research into each of these given factors was found to be limited. Further, high quality research is required to verify and clarify the relationships that these identified factors have with aggression. Furthermore, recent mainstream research into SIP and aggression has covered considerable ground that remains untouched by research with people with IDs. In conclusion, there is every reason to think that the SIP model will continue be a rich source of ideas for future research into aggression in this population and that further studies examining specific aspects of this model would be of significant value.

PART II

RESEARCH STUDIES

Chapter 8. Research Studies: Prologue

The systematic review found ample evidence that characteristic patterns of cognitive processing, as implied by the SIP model, do contribute to problematic aggression in people with IDs. For example, it appears that aggressive people may be more likely to perceive the behaviours of others as being hostile (Jahoda et al, 2006; Basquill et al, 2005). However, the author concluded that further research is required in order to clarify the nature of these factors. Furthermore, the review identified many factors associated with SIP that remain relatively unexplored and recommended several key areas for future research.

In order to decide which of these recommendations would provide the focus of the main research studies, it was necessary to consider which were pertinent to young adults with IDs. One area that stood out was the need to identify the social interactions that typically provoke aggression. Although there is now some insight into certain patterns of SIP that might lead to aggression, recent research has shown that these tendencies are context-specific (Lansford et al, 2006). Crucially, this implies that it is not only necessary to understand the processing styles that lead to aggression, but also the specific social experiences that typically elicit these processing styles.

At this point, relatively little is known about the social situations that evoke anger and inter-personal conflict in people with IDs (MacMahon et al, 2006b; Hunter et al, 2010; Benson & Fuchs, 1999). Less still is known about the specific experiences of young adults with mild to moderate IDs, the target group of this thesis. On reflection, this is an important point as the everyday experiences of young adults with IDs are likely to be quite distinct form those of older adults. For this reason, the first two studies of the thesis seek to identify features of the interpersonal interactions of young adults with IDs that most typically provoke anger in this group.

The review also made a telling observation about the existing research into how aggressive people encode and interpret social cues. It is widely accepted that in actual social interactions, much social meaning is communicated via dynamic cues such as body movements (Clarke et al, 2005; Pollick et al, 2003). However, research to date has focused on how people with frequent aggression interpret social cues from static pictorial stimuli (Matheson & Jahoda, 2006; Walz & Benson, 2005). It may be that by using static stimuli

to examine how social information is encoded, salient information that would be available in real-life situations is lost. For this reason, Study 3 further examined the relationship between processing of social cues and frequent aggression by using dynamic stimuli of people walking in different emotional states.

There has been increased interest in how factors associated with the decision-making stage of SIP contribute to aggression. In particular, two studies indicate that aggressive adults with IDs may expect more positive outcomes from aggression and less positive outcomes from submissive behaviour in comparison to their non-aggressive peers (Kirk et al, 2008; Pert & Jahoda, 2008). However, another recent study found that these factors may not help explain aggression in children with IDs (van Nieuwenhuijzen et al, 2006). This pattern of findings mirrors those of developmental research with typically developing participants that suggest that response evaluation may only become an important factor in aggression during adolescence (Lansford et al, 2006; Fontaine et al, 2009). In that outcome expectancies of aggression and submission appear to be linked to aggression in adults with IDs, but not in children, it would seem plausible that the role of decision-making in aggression of this group may also emerge during adolescence. However, no study has examined whether predicted outcomes of aggression have any influence on aggression in adolescents with IDs. Therefore, the final study seeks to investigate whether the findings observed in post-adolescents with adults with IDs would be replicated with a sample of young adults.

To summarise, this second part of the thesis includes four studies into distinct aspects of aggression in young adults with IDs. The research was approached from a social-information processing perspective. As such, the various research areas addressed by the four studies are perhaps best summarised via an adapted schematic of the SIP model:
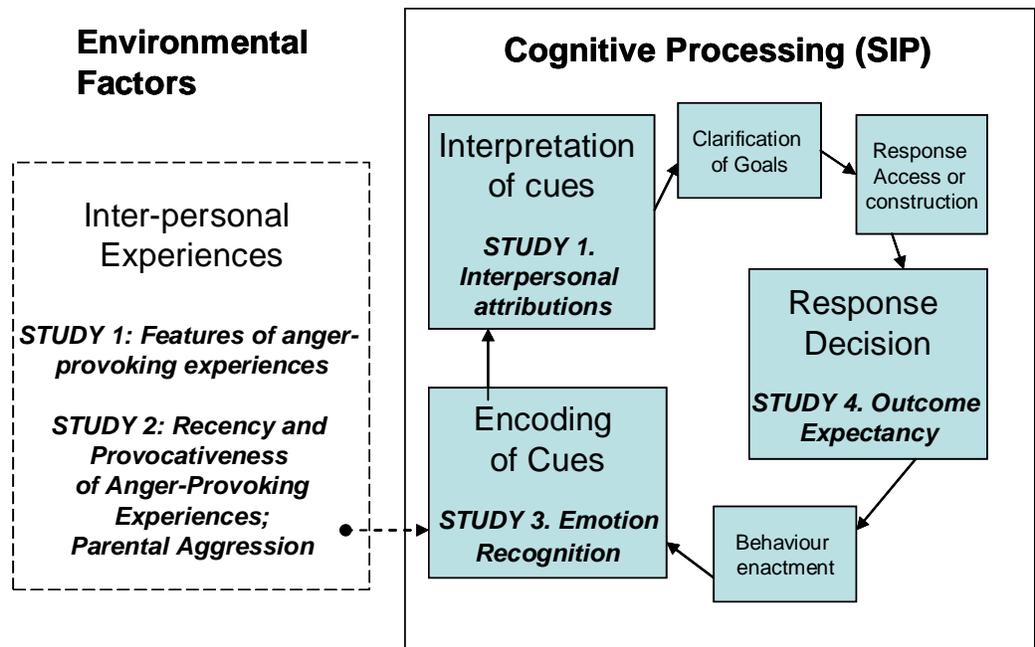
Figure 8.1 Schematic diagram of the potential factors of aggression addressed by each of the four studies (abbreviated SIP sequence adapted from Lemerise & Arsenio, 2000).

Chapter 9 Study 1. Experiences of Interpersonal Conflict

9.1 Study 1. Experiences of Interpersonal Conflict INTRODUCTION

9.1.1 Background

The systematic review found ample evidence that a rich variety of psychosocial factors contribute to aggression in people with IDs. For example, studies have identified cognitive biases and patterns of beliefs that appear to be characteristic of frequently aggressive people with IDs (e.g. Jahoda et al, 2006b; Pert et al, 1999; Kirk et al, 2008).

A likely mediator of these tendencies is anger arousal. Although anger is not a prerequisite for aggressive behaviour, it can be defined as a state of emotional and physiological readiness to aggress (Novaco, 1994). As such, there are several ways in which anger is thought to influence SIP and, thereby, the likelihood of aggressive behaviour (MacMahon et al, 2006a). For one, it is thought that heightened states of anger may hinder an individual's ability to problem-solve, potentially reducing the likelihood of generating and enacting non-aggressive responses to difficult situations (Jahoda et al, 2001). Indeed, anger-arousal might lead to 'pre-emptive processing' of social events, where many of the evaluative SIP processes normally involved in determining behaviour are skipped altogether (Lemerise & Arsenio, 2000; Fontaine & Dodge, 2006). Instead, behaviour in such circumstances may be driven by mood-dependent social goals and response tendencies developed during periods of high anger arousal (MacMahon et al, 2006a). Finally, evidence shows that the arousal of anger can make people more likely to focus on anger-related stimuli and interpret the behaviours of others as hostile (Eckhardt & Cohen, 1997; MacMahon et al, 2006a).

It is reasonable to assume that people will usually feel more angry in certain types of situations than in others. In line with this observation, it is becoming increasingly apparent that the patterns of processing found to underpin aggression may also vary between circumstances (Lansford et al, 2006). This means that an individual might be more likely to perceive, and choose to retaliate to, hostility from particular individuals or in particular

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settings. Similarly, the perceived nature of other people's behaviour will surely affect the likelihood of an aggressive response. For example, it might be that some people are particularly sensitive to being treated in a condescending manner or to being stigmatized. Identifying the most anger-provoking features of social conflict for people with IDs is, therefore, crucial to understanding how SIP underpins aggression in this group. However, despite this imperative, few studies have examined the subject.

In addition to improving the understanding of frequent aggression, social conflict in this group should be seen as an area deserving research for its own sake. Dealing with social conflict can be a particularly difficult experience for many people with mild to moderate intellectual disabilities. Studies have found that adults in this group identify difficult social interactions as occurring more often and as being more stressful than several other negative life events (Bramston et al, 1999; Hartley & Maclean, 2009). In fact, negative social interactions, such as disrespectful treatment and victimization, appear to be more commonplace for people with intellectual disabilities than for their non-disabled peers (Jahoda & Markova, 2004; Levy & Packman, 2004; Sobsey, 1994). In addition to causing psychological distress, exposure to such social stressors has been linked to health and mental health problems in this group including depressive symptoms and somatic complaints (Emerson, 2010; Lunsky and Benson, 2001).

9.1.2 Social Conflict Experienced by People with Intellectual Disabilities

To date, three studies have examined the interpersonal sources of conflict in adults with intellectual disabilities. Benson and Fuchs (1999) interviewed a group of frequently aggressive adults from Illinois, USA, about recent social interactions at home and at work that had angered them. They found that conflict at work was typically with co-workers and involved aggression. At home, conflicts were most commonly with peers and siblings. More recently, Hunter et al (2010) used data collected from anger-management interventions in the UK to identify the most common social experiences for ten adults that led to significant feelings of anger. They found that the most widely reported incidents of this type were "minor annoyances" such as "nagging" or being "told off". However, the incidents rated as being most aggravating were of personal abuse, including being 1) shouted at, 2) physically threatened and 3) "picked on". Such incidents were also relatively

widespread, with six of the ten participants reporting being called names, five participants stating they had been shouted at and four participants reporting being physically threatened.

A shared limitation of Hunter et al's (2010) and Benson & Fuchs' (1999) studies is that they did not include non-aggressive comparison groups or individuals without intellectual disabilities. Consequently, it is not clear whether the patterns observed in these individuals with problems of aggression are different from their non-aggressive peers or from individuals without intellectual disabilities of a similar background. With this in mind, MacMahon, Jahoda and Pert (2006) reanalysed interview data with 53 aggressive and non-aggressive adults with intellectual disabilities that had been collected by Jahoda et al (1998). In the latter study, participants were asked to describe a recent situation of conflict that continued to elicit negative emotions on recall. Re-analysis by MacMahon et al (2006b) indicated that the most common source of conflict in both groups was interaction with fellow service users. Additionally, the authors re-analysed the participants' inter-personal perceptions of the person with whom they were in conflict. They found that both groups tended to believe they were being belittled or treated in a condescending manner.

9.1.3 Young Adults with Intellectual Disabilities

The four research studies in this thesis focus on young adults with IDs, a stage thought to be important in the development of aggressive processing styles (Fontaine et al, 2009). As outlined in Part I, young people have been under-represented in preceding research into SIP and aggression in adults with IDs (see p.40). It is also the case that studies have thus far failed to examine the experiences of conflict of young adults with IDs which may be distinct from those of older adults. All three studies described above found that incidents of conflict were often with peers and often involved aggression. However, adolescents and younger adults may typically spend the majority of their daytime at school or college, rather than adult resource centres or work settings.

This is of added significance because transition to adulthood may be a particularly difficult period for people with intellectual disabilities. Young people with IDs in full-time education, may be particularly likely to encounter bullying which, amongst other things, is associated with poor mental health (Nabuzoka & Smith, 1993; Lunsky and Benson, 2001). Also, at a developmental stage typified by increased independence in most groups, young

adults with IDs may become more aware of, and concerned about, relative limitations to their own independence. Such limitations may either result from specific cognitive limitations, or else be the result of intervention by others (most typically parents) who may be concerned for the wellbeing of the individual.

Theoretically, an awareness of limited independence in comparison to non-disabled peers could result in some individuals perceiving themselves in a more negative light, or, indeed, to the perception of others as behaving in a manner that does not give them sufficient credit as an individual who is moving from adolescence to adulthood. Subsequently, an enervated sense of self could, in turn, lead some to depression, frustration, or even aggressive behaviour (Cheng & Furnham, 2003; Jahoda et al, 2001). Problems stemming from a vulnerable sense of self or from low self-esteem could be further compounded by frequent experiences of victimisation. Given these concerns, the present study focuses on exploring interpersonal conflict in individuals in the transition between adolescence and adulthood (16-20 years).

9.2 Study 1. Experiences of Interpersonal Conflict METHODS

9.2.1 Aims

The main aim of this study was to identify key contextual features of conflict for young adults with intellectual disabilities. It also aimed to examine participants' perceptions of these experiences, the emotions they experienced subsequently and their behavioural responses.

Evidence suggests that people with IDs are particularly likely to encounter difficult social experiences such as victimization than the non-disabled population (Jahoda & Markova, 2004; Levy & Packman, 2004; Sobsey, 1994; Lunsky and Benson, 2001). Amongst other things, these difficult experiences may contribute to the relatively high rates of aggression observed in this group by directly provoking aggressive behaviour and by sensitising individuals to perceived threats to their self-image (Tyrer et al, 2006; Jahoda et al, 2001). To ascertain whether certain features of the experiences of conflict of young adults with

IDs are particular to this group, participants' responses were compared to those of a group of non-disabled young people.

From the limited research carried out in this area, it was predicted that victimisation, the involvement of others with intellectual disabilities (in situations of conflict), stigma and aggression from others were likely to emerge as key themes from this study (MacMahon, 2006b; Hunter et al, 2010; Benson & Fuchs, 1999). On the basis of this literature, the following research questions were posed concerning reports of conflict by young people with or without intellectual disabilities:

1. Do the contextual features of conflict differ between young people with and without IDs in terms of the types of event, who the conflict is with, and the location?
2. Do the inter-personal perceptions of the two groups differ, in terms of their attribution of intent and their appraisal of the other person?
3. Do the two groups report different behavioural responses to the situation of conflict?

If particular features of conflict experiences have an influence on aggression in young adults with IDs, one might predict that particularly aggressive individuals will report characteristic features and beliefs about their experiences of conflict. For this reason, the responses of individuals identified as having problems of aggression were compared with those of their less aggressive peers. The following hypotheses were made concerning frequently aggressive and non-aggressive participants:

1. Aggressive participants will be more likely to attribute hostile intent to those they are in conflict with.
2. Aggressive participants will be more likely to report responding aggressively.

Finally, in line with past findings of gender differences in aggression (Archer et al, 2005), it was hypothesised that:

1. Male participants will report more aggressive responses than female participants.

9.2.2 Ethical Approval

Ethical approval for the study was granted by the NHS West of Scotland Research Ethics Committee 3 (Ref: 08/S0701/164).

9.2.3 Design

A cross-sectional design was employed in this study, comparing a group of young adults with IDs with a group of young adults without IDs. As people demonstrating frequent aggression are typically viewed in research as a group of individuals with common problems, a dichotomized group comparison design was preferred to a correlational design (e.g. Dodge et al, 1986; Jahoda et al, 2001). Participants within each group were subsequently classified as having difficulties of aggression on the basis of staff reports. Responses of participants in each group that were identified as being aggressive were then compared with those of the remaining participants in the group.

9.2.4 Power Calculation

This was an exploratory study, primarily concerned with gathering descriptive data about an area with only a very limited evidence base. As such, no studies that compare the opinions and reported experiences of people with and without intellectual disabilities were identified. Therefore, it was not possible to calculate the required sample size with confidence.

Instead, the required sample size was estimated on the basis of existing work with methodological parallels. MacMahon et al, (2006b) analysed data gathered from interviews that followed a similar interview protocol to the present study. Although they did not compare participants with and without IDs, they did compare the experiences and perceptions of anger-arousing social events reported by aggressive and non-aggressive people with IDs. With a sample of 53, they demonstrated significant group differences in reported sources of conflict and responses. Given that we may expect similar group differences in the present study, a similar sample size of approximately 54 was considered appropriate.

9.2.5 Recruitment Process

9.2.5.1 Recruitment Sites

When considering potential recruitment sites, three characteristics were identified as necessary for a site to be viable: i) large number of people in the correct age range (16 to 20 years), ii) sufficient number of people with IDs in this age range, and iii) likely equivalence of potential participants with and without IDs in terms of socio-economic background, current lifestyles and gender. It was concluded that Further Education Colleges satisfied these criteria and would be the primary recruitment sites for both groups.

Unfortunately, it proved difficult to recruit a sufficient number of participants without IDs from Further Education departments. As data collection was conducted over the final months of the academic year, many students had more academic commitments than usual. Consequently, many Heads of Department were reluctant to allow access and students were less willing to volunteer to participate. This problem was compounded by a lengthy period where these facilities were closed. Hence, several secondary schools in the Glasgow area, which start their summer holidays one month later than most colleges, were approached, as well as several youth clubs.

9.2.5.2 Recruitment Procedure

An identical recruitment protocol was followed at each recruitment site. For the participants with IDs, the Head Lecturers of college departments providing courses for individuals with additional support needs were approached with the research proposal (see Appendix A for Covering Letter and Study Overview). Similarly, Head Lecturers of departments providing mainstream further education were approached.

Once management permission was obtained, classes or groups of potential participants were identified with the aid of staff members. Given the necessarily conversational nature of the data collection process, an important criterion for judging the suitability of classes that included students with IDs, was their receptive and expressive communication skills. On this basis, staff were asked to identify groups that they believed would be suitable for inclusion in the study.

The researcher presented a brief summary about the purpose of the study, and what participation would involve, to the identified classes of potential participants. Packs containing an information sheet and reply slip were also given to the young people (see Appendix B). All presentations were completed during class time and in the presence of relevant staff members. Those interested in participating in the study were asked to return the reply slip to a designated member of staff. They were asked to wait a minimum of 24 hours before doing so in order to allow a significant length of time to consider participation. The details of individuals who wished to take part, or wanted further information about the study, were passed on to the researcher by staff members.

Potential participants were also informed that they were free to contact the researcher directly at any time if they had any questions or concerns that they wanted to address. Those participants who wished to take part in the study were contacted by the researcher and an arrangement was made to meet. When the researcher met with the participants, they were asked whether they had read the information sheet. Participants that had not read the information sheet were given time to do so to their satisfaction. They were then asked whether they had understood the sheet and invited to ask any questions they might have about the information sheet or any other aspect of the study. Once their questions had been answered, participants were assured that participation was voluntary and that they were free to leave the study at any stage and did not have to give a reason to do so. They were also assured that everything they told the researcher would be confidential unless they indicated that they or any other person was in danger. Finally participants were instructed that if they had no further questions, they could indicate their willingness to participate in the study by signing the consent form.

9.2.6 Justification of Measures

This study sought to gather accounts of recent experiences of interpersonal conflict that continue to elicit anger on recall. It was decided that a qualitative approach, using semi-structured interviews, would be the most appropriate method for achieving this. A number of factors were taken into consideration in the process of making this decision. Given the exploratory nature of the present study, it was deemed better to obtain rich data about a single incident of conflict than to explore more incidents in less detail. For this reason,

semi-structured interviews were conducted. For one, semi-structured interviews can generate a rich data set suited to exploratory research with broadly defined research aims (Bernard, 1988). The chosen measure, the Cognitive-Emotive Behavioural Assessment (CEBA), has been proven to be engaging and accessible for people with IDs (Jahoda et al, 1998). Crucially, it can also generate a substantial quantity of data in a relatively brief period, hence, limiting the burden on participants. Finally, it was hoped that by using an interview that addressed actual experiences of anger-provoking events, it would be possible to involve participants in the given scene and evoke emotional states similar to those felt during such experiences. Interviews that discuss actual experiences can thus create a more naturalistic context than interviews using hypothetical scenes, and can thereby facilitate a more authentic account of an individual's processing during such situations.

9.2.7 Measures

9.2.7.1 Semi-Structured Interview (See Appendix C)

The semi-structured interview was adapted from the Cognitive-Emotive Behavioural Assessment (CEBA; Trower et al, 1988) interview previously used in studies with individuals with intellectual disabilities (Jahoda et al, 1998). The interview questions followed an "ABC" format where participants were asked to describe an "activating event" or incident of interpersonal conflict (A); their beliefs about what was happening (B) that led to the consequent emotions and behaviour (C).

The method involved asking the participants, initially, to recall a recent incident of interpersonal conflict which still aroused feelings of anger or other negative emotions. Next, participants were asked to describe the incident in their own words including where it took place, who was involved and their view of what happened (A). They were then asked to describe their emotions at the time and their subsequent responses (C). Finally, the interviewer asked the participant to recall this emotion while answering questions on: (i) their perceptions of the intent of the other person and (ii) how they viewed the other person (B).

In addition to the original CEBA items, participants were asked to describe any techniques that they employed to manage their emotions or behaviour during or immediately after the incident. Where participants offered more than one answer to questions, they were asked to choose the answer that was most salient to them.

9.2.7.2 Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999)

The two subscale version of the WASI provides an estimate of general intellectual ability by testing the participants' vocabulary and matrix reasoning skills. The WASI is an abbreviated version of the Wechsler Adult Intelligence Scale – III (WAIS -III; Wechsler, 1997). The WASI can be completed in a relatively brief period of time and has acceptable correlation scores with the WAIS -III at 0.87 for Vocabulary, 0.66 for Matrix Reasoning and 0.87 overall (Wechsler, 1999).

9.2.7.3 Checklist of Challenging Behaviour (CCB; Harris, 1993; see Appendix E)

The aggression subscale of the CCB was completed with staff members with six or more months experience of working with the particular participant they reported on. CCB scores were used to assign each participant to the aggressive or non-aggressive subgroup. Participants were assigned to the appropriate aggressive subgroup if they were reported to have enacted six or more acts of verbal or physical aggression in the preceding six months. This was in proportion to criteria used by previous authors using the CCB (e.g. Kirk et al, 2008). This measure was developed specifically for use with staff working with people with IDs.

9.2.8 Procedure

The semi-structured interview and WASI were completed with each participant over one individual session lasting between 40 to 60 minutes. Within one week of each participant's interview, the CCB was completed with a staff member who had known the participant for at least six months.

All participant interviews took place in private rooms at the recruitment site and were conducted by the same researcher. Participants were informed that the researcher was interested in their feelings and opinions about conflict and that there were no 'right' or 'wrong' answers. Permission was requested from participants to allow the interviews to be recorded using digital media. Permission was also sought to interview staff at a later date about participants' recent behaviour with reference to any incidents of aggression.

Each interview began with an informal conversation to build rapport between the researcher and participant and to put the participant at ease. Participants then completed the CEBA interview with the researcher as outlined above. Finally, participants completed the two-subtest form of the Wechsler Abbreviated Scale of Intelligence (WASI). The WASI was completed last as it was judged to be contradictory to the open spirit of the interview that sought to explore the experiences of participants.

Finally, with each participant's permission, staff members, who had known them for at least six months, were asked to complete the aggression section of the Checklist of Challenging Behaviour with the researcher (Harris, 1993).

9.2.9 Piloting

The interview protocol was based largely on an interview that has been used successfully with people with IDs in previous research (Trower et al, 1988; Jahoda et al, 1998). The only amendment to the protocol was the inclusion of one additional open-ended question: "Did you do anything to try to control your emotions or behaviour?" The full protocol can be found in Appendix C.

In order to familiarize the interviewer with the procedure and identify any procedural shortcomings, it was considered appropriate to pilot the semi-structured interview. The entire protocol and WASI were piloted with two colleagues and one young person with IDs in accordance with the procedure outlined above. No difficulties were identified at that point and, hence, no amendments were considered necessary. Data from the initial five

participants were reviewed before further interviews were conducted. Again, no amendments were found to be necessary.

9.2.10 Analysis Strategy

Transcriptions of interview recordings were carried out verbatim. In instances where participants did not consent to interviews being recorded on a digital voice recorder, responses were recorded onto a pre-prepared response sheet by the researcher during the interview.

Transcripts were content analysed. Answers to each interview item were grouped into categories that reflected the different responses given by participants. The research team then discussed the categories of each coding frame; adjusting them where necessary until agreement was reached.

It was concluded that two-tailed chi square comparisons of coded responses to each question would be carried out between participants with and without IDs. Specifically, comparisons would be conducted between the 1) contextual features of reported experiences, 2) inter-personal perceptions of participants and 3) their behavioural responses to the situations. Aggression scores obtained from staff members would be used to assign participants to aggressive and non-aggressive subgroups. Comparisons would then be repeated between these subgroups. Finally, the responses of male and female members of each group would be compared.

9.3 Study 1: Experiences of Interpersonal Conflict

RESULTS

9.3.1. Introduction

The present study sought to compare the experiences of social conflict encountered by young adults with and without IDs. Using a semi-structured interview, it examined both environmental features of conflict incidents, such as the location, as well as participants'

perceptions of their experiences and how they responded. This section presents results for six distinct aspects of social conflict: 1) the initial event (or activating event), 2) the location, 3) the other person involved, 4) perceptions of the other person's intentions, 5) appraisal of the other person and 6) the participant's eventual response. Before this, the socio-demographic details of the groups will be presented.

9.3.2. Participants

Twenty-six participants, with mild to moderate intellectual disabilities, were recruited from two Further Education colleges in Central Scotland that provide specialist courses for young people with additional learning needs. Twenty participants, without IDs, were recruited from two colleges, one youth club and one secondary school in central Scotland.

All participants met the following inclusion criteria: 1) aged 16-20 years old, 2) expected to leave school/college at the end of the current or following school year 3) (intellectually disabled group only) identified by school/college staff as having a mild to moderate intellectually disability. Individuals identified or suspected by staff members of having an autism spectrum disorder were excluded due to the qualitative impairments in social interaction and communication and understanding associated with this disorder (APA, 2000). To minimize potential socio-economic differences, participants of both groups were recruited from largely the same areas of Central Scotland. Specialist Additional Supports Needs staff at colleges verified that potential participants with IDs had sufficient receptive and expressive language skills to engage in the interview (see p.105 for an account of the recruitment process).

Details of the sites from which participants were recruited are outlined below in Table 9.1:

Table 9.1
Study 1: Recruitment Sites

	ID Group	ND Group
Further Education College		
-Mainstream College Departments (2)	0	11
-Additional Support Needs (ASN) Department (2)	26	0
Secondary Education		
-Mainstream Secondary School (1)	0	7
Youth Groups/Clubs (1)	0	2
TOTAL	26	20

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9.3.2.1. Participants' Socio-Demographic Characteristics

The socio-demographic characteristics of the two groups are outlined in Table 9.2 below:

Table 9.2

Study 1. Participant Details

Group	ID	ND
N	26	20
Age	Mean= 18.62 SD= 0.95 Median= 19 Range=17-20	Mean= 17.10 SD= 0.97 Median= 17 Range= 16-19
		Mann-Whitney U = 73.0; p < .01***
Carstairs Social Deprivation Score	Mean= 3.8 SD= 5.65 Median=1.53 Range=-4.09-13.85	Mean= 1.9 SD= 4.59 Median= 0.24 Range=-5.78-13.7
		Mann-Whitney U =210; p=.263
Mean IQ estimate (WASI)	Mean= 62.12 SD= 8.01 Median= 60 Range= 55-76	Mean= 93.6 SD= 10.53 Median= 90 Range= 80-114
		Mann-Whitney U= 0; p< .001***
Gender	Males= 15 Females= 11	Males= 11 Females= 9
		χ^2 *(1)= .33, p=.855*
Freq. Aggressive	Agg= 12 Nagg= 14	Agg= 2 Nagg= 18
		χ^2 *(1)= 6.98 p=.008****

Note ***p< 0.05

Mann Whitney U Tests were conducted instead of T-tests because responses to Age, Social Deprivation and IQ were not normally distributed. As Table 9.2 shows, the ID and ND groups were well matched for gender (χ^2 (1)= 0.33, *p*=.855). Social Deprivation was compared by using the most recent version of the Carstairs scale (Norman, 2001). The Carstairs scale uses Census data to produce scores of relative social deprivation by UK postcode. The score reflects access to those material resources which provide access to "those goods and services, resources and amenities and of a physical environment which are customary in society" (Carstairs and Morris, 1991). As Table 9.2 shows, no differences in social deprivation were found between the two groups (U =210; *p*=.263). The ID group were significantly older than the ND group (U = 73.0; *p*< .01). There was also a significant difference between the number of frequently aggressive individuals in each group (χ^2 (1)= 6.98 *p*=.008).

9.3.3 Coding of Interviews

The participants' responses to each of the interview questions were transcribed verbatim. Three participants did not consent to interviews being recorded on a digital voice recorder. In these instances, responses were recorded onto a pre-prepared response sheet by the researcher during the interview.

Transcripts were content analysed. Answers to each interview item were grouped into categories that reflected the different responses given by participants. Content analysis was considered to be more appropriate than other qualitative methods of analysis, such as IPA, because the data consisted of participants' responses to specific interview questions rather than a more open dialogue about particular topics.

Once transcripts had been content analysed, answers to each interview item were grouped into categories that reflected the different responses given by participants. To elucidate how this was carried out, it may be useful to consider an example of how these categories were developed for responses to one of the interview questions. In one case, when asked how he reacted to being punched by his brother, a participant replied "I'd hit him back." In response to the same question, another participant, who reported being unfairly told off by her mother, claimed "I just kept my mouth shut." The first response, where the boy hit his brother, was provisionally coded as 'aggressive' while the second response was coded as 'passive'. After assigning provisional categories to the remainder of participants' responses, it became apparent that a meaningful coding frame for responses to this question would be the three categories 'aggressive', 'passive' and 'assertive'. Responses that had initially been coded as other provisional categories were then either collapsed into one of the three chosen categories or recoded. The interviewer was blind to aggressiveness, it was not possible for the interviewer to be blind to intellectual disability.

Item 1. Activating Event
Item 2. Conflict Partner
Item 3. Location
X   **Item 4. Emotion Experienced**
     Item 5. Perceived Intent of Other
     Item 6. Perception of Other
X   **Item 7. Endorsement of Other's Behaviour**
X   **Item 8. Behavioural Control Strategy**
     Item 9. Response
X   **Item 10a. Preferred Response**
X   **Item 10b. Preferred Response want/ought?**

X= NOT ANALYSED

Figure 9.1: Study 1. Interview Items

On coding the data, it was decided that the data from Items 4, 7, 8, 10a. and 10b. would not be analysed further. Item 4 was discarded because all but four participants across the two groups identified "anger' as their main emotion. Similarly, Item 7 was not analysed because all but three participants gave the same response.

It was also decided that data from Item 8 would not be analysed. Although participants were asked whether or not they did anything to control their feelings, most answers did not constitute actual coping strategies. Many participants seemed to simply explain what they did after their initial response to the event, whether it was a conscious effort to control their emotions or not. Consequently, it was not possible to code many of the responses into appropriate categories for comparisons. It was decided that the remaining responses were too varied and too few to be meaningfully coded for analysis.

Items 10a and 10b, regarding preferred response, were also discarded. Responses to question 10a were to be divided into responses that the participant wanted to enact at the time or that they felt they should have enacted in retrospect and coded for two separate analyses. However, given the relatively small sample sizes, the deleterious effects of dividing the data into two sets would have made it difficult to make meaningful comparisons. Moreover, the fact that six participants with IDs and three participants without IDs gave ambiguous information regarding whether they had "wanted to" or whether they "wish they had" enacted their preferred response rendered meaningful analysis of the data extremely difficult.

The following coding categories were used for each of the coded interview items:

Item 1. Activating Event
a) Aggressive Event *(physical aggression, non-personal verbal aggression, personal verbal aggression)*
b) Non-Aggressive Event *(betrayal, demands/requests, stigma, "not allowed to…", "not told about…", criticism.)*

Item 2. Conflict Partner
a) Distant/no relationship with participant *(Adult strangers, neighbours, same-aged peers outside friendship group)*
b) Close relationship with participant *(Friends, partners, parents, siblings, teacher/lecturers)*

Item 3. Location
a) Home
b) Public
c) Work/school/ college

Item 4. Perceived Intent of Other
a) Participant-directed intent *(alienate, inconsiderate, blame, negative view of P, victimized)*
b) Impersonal intent *(need to control, non-negative, unfair)*
c) Don't know

Item 5. Perception of Other
a) Bad
b) Negative trait *pathetic/no respect, other negative traits*
c) Non-personal perception *(situational explanation, no view)*

Item 6. Response
a) Aggressive Responses *(Physical aggression, verbal aggression, undirected aggression.)*
b) Passive Responses *(purposeful-passive, submissive-passive, no response.)*
c) Assertive Responses

Figure 9.2 Coding Categories for Coded Items

A second independent rater was asked to use the coding frames to categorize the responses of 26% of the sample. The sub-sample was chosen at random and included seven participants with intellectual disabilities and five non-disabled participants. Overall agreement between the two raters was 93% across all interview items. Inter-rater reliability analyses were conducted for responses to each of the six interview items ('a' to 'f') using Kappa statistics. These analyses yielded the following results: a) Kappa=1, (p=.001); b) Kappa=.824, (p=.004); c) Kappa=1, (p<.001); d) Kappa=.698, (p=.003); e) Kappa=.860, (p=<.001); f) Kappa=.845, (p<.001).

9.3.4 Results

Two-tailed chi square comparisons of coded responses to each question were carried out between groups. Aggression scores obtained from teachers or lecturers were used to assign participants with intellectual disabilities to aggressive and non-aggressive subgroups. Comparisons were made between these subgroups. Finally, the responses of male and female members of each group were also compared.

Comparisons between the responses of the two groups are presented first, followed by comparisons between males and females and between frequently aggressive and non-aggressive individuals.

9.3.4.1 Comparisons Between Individuals With and Without Intellectual Disabilities

Table 9.3 Tallies and Chi Squares of categorized responses by ID and ND groups to interview questions

a) Activating Event	ID	ND	b) Conflict Partner (the other person involved in the conflict situation)	ID	ND	c) Location of Event	ID*	ND*
Aggressive event *a*	15	1	Distant/no relationship with participant *a*	15	2	Home	5	7
Non-aggressive event *b*	11	19	Close relationship with participant *b*	11	18	Public	3	3
						Work/school/ college	13	4

***[χ2 (1)= 13.8, p=<0.001] a. physical aggression, non-personal verbal aggression, personal verbal aggression.*
b. betrayal, demands/requests, stigma, "not allowed to…", "not told about…", criticism.

***[χ2 (1)= 11, p=0.001], a Adult strangers, neighbours, same-aged peers outside friendship group, b Friends, partners, parents, siblings, teacher/lecturers*

*[χ2 (2)= 3.85, p=0.146] * Five ID and six ND responses were excluded because Phone and Computer categories were not analysed,.*

d) Attribution of Intent ("How was that person treating you to make you feel so ……?")	ID	ND	e) Self-other Perception ("What kind of person did you think ….. was?")	ID	ND	f) Response	ID	ND
Participant-directed intent *a*	18	9	Bad	12	4	Aggressive responses *a*	8	6
Impersonal intent *b*	5	11	Negative trait *a*	7	14	Passive responses *b*	16	11
Don't know	3	0	Non-personal perception *b*	7	2	Assertive responses	2	3

***[χ2 (2)= 7.6, p=0.022] a. alienate, inconsiderate, blame, negative view of P, victimized b. need to control, non-negative, unfair.*

***[χ2 (2)= 8.47, p=0.014] a.pathetic/no respect, other negative traits b. situational explanation, no view*

[χ2 (2)= 0.64, p=0.726] a. Physical aggression, verbal aggression, undirected aggression. b. purposeful-passive, submissive-passive, no response.

*NOTE: ****p<.05; ID Group N=26, ND Group N=20*

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A. ACTIVATING EVENT

1. *Type of Event*: The results summarized in Table 9.3a show that participants with intellectual disabilities cited significantly more incidents of verbal or physical aggression than the non-disabled group. Over half of participants with intellectual disabilities described situations of verbal or physical aggression while only one of the twenty non-disabled participants described such situations.

2. *The Other Person Involved*: Table 9.3b shows that a significant difference was also found between the two groups in terms of the people with whom participants were in conflict. The large majority of non-disabled participants reported conflict with people they were close to. Conversely, most people with intellectual disabilities reported being in conflict with people they were less close to such as strangers, neighbours or peers outwith their friendship group.

3. *Location of Event*: Table 9.3c indicates that there were no significant differences between the two groups in terms of where conflict took place. However, it is worth noting that half of the participants with intellectual disabilities encountered conflict at school/college/work compared with four of the non-disabled participants. Several participants in each group described incidents that took place over the phone or via computer rather in actual locations (five of 26 participants with intellectual disabilities, six of twenty non-disabled participants). While the responses of these participants were excluded from the present analyses, the use of modern media may be an interesting feature of conflict in young people.

B. INTERPERSONAL BELIEFS

1. *Attribution of Intent*: Table 9.3d shows that there was a significant group difference in the type of motive that participants attributed to their conflict partners. While most of the participants with intellectual disabilities viewed their conflict partners' actions as being directed at them personally (alienate, inconsiderate, blame, negative view, victimized), over half of the non-disabled group attributed motives unrelated to the participant (conflict partner's need to control the situation, no negative motive, unfair situation).

To evaluate the extent to which this finding was because far more participants with IDs reported experiences of aggression, this comparison was repeated using attributions for non-aggressive incidents only. Of the eighteen attributions of participant-directed intent, only 4 were found to be in response to non-aggressive incidents and a chi square comparison confirmed that this significant result did not hold for the non-aggressive incidents (χ2 (2) 3.72, *p*= .156).

2. *Self-Other beliefs (appraisal of other)*: Fourteen of the twenty non-disabled participants attributed the other's behaviour to a specific negative trait on the other's part. However, only seven of the 26 participants with intellectual disabilities responded similarly with twelve instead appraising the other globally as a "bad" person. Comparisons between the three categories shown in Table 9.3e reveal these differences to be significant

As with the previous finding, this comparison was repeated using attributions for non-aggressive incidents only. Again, a chi square comparison found that this significant result did not hold for the non-aggressive incidents (χ2 (2) 3.70, *p*= .157).

C. RESPONSE

As described in Table 9.3f, no statistically significant group differences emerged, with both groups reporting equivalent numbers of passive, assertive and aggressive responses. Of the 46 participants in both groups, only five responded assertively.

9.3.4.2 Aggressive and Non-Aggressive Subgroups

Where staff reported five or more significant incidents of verbal or physical aggression over the preceding six months, participants were categorized as frequently aggressive. As only two non-disabled participants were considered to be aggressive, it was not possible to conduct comparisons between aggressive and non-aggressive participants. However, twelve of the 26 participants with intellectual disabilities met the criteria for frequent aggression and comparisons were made between aggressive and non-aggressive participants.

No significant differences were found between aggressive and non-aggressive sub-groups with IDs ('Activating event' χ2 (1)=2.74, *p*=.098 'Conflict Partner': χ2 (1)=.735, *p*=.391; 'Location': Fisher's exact *p*= .685; 'Intent': Fisher's exact *p*=.849; 'Other appraisal':

Fisher's exact p =.682). However, it is worth noting that while nine of the 12 aggressive participants reported incidents of direct aggression, only six of the 14 non-aggressive participants discussed such experiences. Also, although four participants with problems of aggression reported conflict at home, no non-aggressive participants reported such events.

9.3.4.3 Gender

Both groups had sufficient numbers of males and females to conduct gender comparisons within groups (ID= 15 males, 11 females; ND= 11 males, 9 females). A statistically significant difference in response category emerged between male and female participants with intellectual disabilities (χ2 (2)=7.05, p=.029). Seven of the 15 male participants responded aggressively to the event compared to only one of the eleven female participants. The remaining ten females responded passively while only six of the fifteen males responded passively and two responded assertively. Gender comparisons of non-disabled participants revealed no significant group differences.

9.4 Study 1. Experiences of Interpersonal Conflict DISCUSSION

9.4.1 Interpretative Summary

The results suggest that there might be differences between the typical interpersonal conflict experiences of young people with and without intellectual disabilities. Participants with IDs frequently reported aggressive incidents, which is broadly in line with findings from samples with wider age ranges (MacMahon et al, 2006b; Benson & Fuchs, 1999). Perhaps a more novel finding is that the participants with IDs mainly reported conflict with strangers and peers outwith their friendship group. They were also far likelier to cite conflict with strangers than their non-disabled peers were. As people with intellectual disabilities often have relatively restricted social lives, it might be that a greater proportion of their social interactions, including incidents of conflict, are with people outside their social network. (Myers et al, 1998; Ager et al, 2001).

The study also found that young people with intellectual disabilities made significantly different attributions about the experiences they discussed. For one, they were more likely to feel like the person with whom they were in conflict was targeting them personally. It is quite plausible that participants in this group were indeed being singled-out more often than people in the non-disabled group. However, these results may also suggest that young people with intellectual disabilities are particularly vulnerable to feeling threatened or aggravated by difficult social situations. Many people with IDs have experiences of stigma or social exclusion, either of which can have a negative impact on how they view themselves (Cooney et al, 2006; Foundation for People with Learning Disabilities, 2005; Szivos-Bach, 1993). Furthermore, experiences of subordination may increase emotional reactivity to stressful situations, including interpersonal conflict (Boyce, 2004). It may be that many young people with intellectual disabilities develop emotional and cognitive tendencies that make it harder to defuse difficult social situations and thus put them at increased risk of being drawn into conflict. Perhaps more worryingly, previous studies have found that both the propensity to perceive hostility in others and emotional arousal could be key factors underpinning problems of aggression (Jahoda et al, 2006b; Pert et al, 1999; MacMahon et al, 2006a). It is possible that this could partially explain the relatively large proportion of frequently aggressive individuals in the intellectually disabled group. It would also shed some light on why frequent aggression is a problem for a significant minority of people with intellectual disabilities (Tyrer et al, 2006).

Participants with intellectual disabilities were more likely to make negative, generalizing attributions about their conflict partners. Regarding someone as a "bad person" could be seen as taking a less empathetic view of that individual than, for example, identifying specific shortcomings in their character or behaviour. Feeling less empathy for their conflict partners could make it even more difficult for some people in this group to prevent conflicts from escalating to more serious confrontations. Interestingly, one might expect people to feel less empathy for individuals outside their circle of trust. This may be an alternative explanation for why most of the participants with intellectual disabilities reported incidents with people less close to them.

There were no differences found in the number of aggressive responses to conflict given by the two groups. This is perhaps surprising given that a far greater proportion of the group with intellectual disabilities were found to have problems of aggression. Similarly, this seems at odds with findings discussed above where participants with intellectual disabilities described more incidents of aggression and appeared to have more negative

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cognitions about their experiences. It is possible that some participants, conscious of their aggressiveness, felt that this question put their behaviour under scrutiny. Consequently, some may have felt reluctant to give aggressive responses and, instead, may have described more socially desirable responses.

It was surprising that the aggressive group with intellectual disabilities did not offer more aggressive responses than the non-aggressive group. Moreover, previous findings that such aggressive individuals attribute hostile intent more readily than other individuals were not replicated (Jahoda et al, 2006b; Basquill et al 2004; Pert et al, 1999). However, given the small number of participants in the present study, these findings should be interpreted with a degree of caution.

An additional finding was that male participants with intellectual disabilities were more likely to respond aggressively than the females in the group. This is commensurate with previous findings that adolescent males are more overtly aggressive than adolescent females (Archer, 2004). It is noteworthy that this effect was not observed in the non-disabled group. However, this may simply reflect the relatively small size of the non-disabled group.

9.4.2 Limitations of the Study

A larger sample may have clarified non-significant trends and provided a broader range of responses to the interview questions. In particular, it should be acknowledged that the size of the sample could have prevented the detection of differences between aggressive and non-aggressive participants.

There were also a number of socio-demographic differences between the groups that could offer alternative explanations for some of the findings. For one, the participants with intellectual disabilities were on average one and a half years older than the non-disabled participants and included more frequently aggressive individuals. While all participants with intellectual disabilities were college students, the non-disabled group included nine school pupils and one youth club attendee.

It should be conceded that the marked difference in the number of aggressive incidents reported by the groups may have confounded the comparisons of interpersonal attribution.

Indeed, when comparisons were repeated using only the non-aggressive incidents, group differences were not found. It is possible that these findings were not replicated due to the reduced number of data used in these comparisons. However, further investigation is required, examining participants' attributions made during more comparable experiences of conflict.

Although the interviewer was blind to aggressiveness, it was not possible for the interviewer to be blind to intellectual disability. However, any interviewer bias was minimized by ensuring that the initial questions of all interview items were phrased consistently over interviews.

Finally, the data presented in the present study is based on a basic analysis of the interview data. In future research, it may be interesting to carry out a more in-depth qualitative analysis of reports of interpersonal conflict provided by participants.

9.4.3 Future Research

Research into the psychosocial sources of aggression in people with intellectual disabilities frequently utilizes vignettes depicting scenes of social conflict. The storylines for these vignettes are often developed without any evidence-base. There is therefore a risk that the chosen scenarios might either include irrelevant features or exclude highly salient features of conflict experienced by a given group. The present findings may facilitate the development of vignettes for future research that are relevant to the everyday experiences of young adults with intellectual disabilities. With further development, such vignettes could also serve as a useful tool in assessing reactive aggressiveness in young adults with intellectual disabilities.

9.4.4 Conclusion

Young people with intellectual disabilities may be more likely to feel victimized by experiences of social conflict. It appears that many young people with intellectual disabilities develop cognitive and emotional tendencies that may exacerbate situations of conflict or even lead to aggression. Such tendencies could be rooted in certain life

experiences common to this group such as stigma or social isolation. Future research may seek to explore how, and when, such tendencies develop over the life span by continuing to examine experiences and perceptions of conflict at specific developmental stages. While certain psychological tendencies may well escalate situations of conflict, it also seems that young adults with intellectual disabilities are more likely to be targeted by others for verbal and physical abuse. Therefore, future studies may also seek to identify factors that facilitate resilience in the face of more serious confrontation.

Chapter 10 Study 2: Provocative Scenario Ranking, Experiences of Conflict and Parental Aggression

10.1 Study 2. Provocative Scenario Ranking, Experiences of Conflict and Parental Aggression
INTRODUCTION

There is increasing evidence that certain cognitive tendencies underpin problems of aggression in adults with IDs (e.g. Jahoda et al, 2006b; Pert et al, 1999; Kirk et al, 2008). However, less is known about the particular social experiences that typically trigger these 'aggressive' tendencies in people of this group. As discussed in the Introduction to Study 1, it is important to gain such insights because processing tendencies, including those that underpin aggression, are found to be context-specific (Lansford et al, 2006). This means that an individual might be more likely to perceive, and choose to retaliate to, hostility from particular individuals or in particular settings. Therefore, to understand why individuals in any group become aggressive, it is necessary to identify the experiences that typically provoke them.

In the Introduction to Study 1, three previous studies were identified that had investigated provocative experiences of adults with IDs (Benson & Fuchs, 1999; MacMahon et al, 2006b; Hunter et al, 2010). These studies found aggression and the involvement of peers to be common features of their participants' experiences of conflict (see p.99 for further details). Study 1 sought to build on these findings by focusing on young adults, a group whose experiences may have been poorly represented in these previous studies. Furthermore, in order to ascertain whether findings were particular to the experiences of people with IDs it included a non-disabled control group. An additional dimension, absent from two of the previous studies, was that Study 1 also explored how young people with IDs typically view their experiences of conflict.

Study 1 used a semi-structured interview to discuss a recent incident where someone did something to the participant that made them angry. This technique yielded useful initial insights into the experiences of conflict that are most salient to people in this group.

However, the interview schedule did not discriminate between the experiences that were most common and those that were the most provocative. In response to being asked to discuss a "recent" event that "made you feel angry", some participants may have been more likely to choose a particularly recent event that had less of an impact on them while others may have been more inclined to discuss a particularly angering experience that was less recent. One might expect that it would be particularly angering experiences that typically provoke aggression, rather than those experiences that were most common. It is, then, necessary for further research to clarify this point.

Furthermore, with relatively few participants, each giving only one response per interview item, there were too few data to conduct statistical comparisons between aggressive and non-aggressive individuals. Therefore, while the study identified useful characteristics of conflict for people with IDs, it could only give a descriptive indication of experiences particular to people with aggression problems.

The present study aimed to use the findings of the initial study to conduct a more focused examination of the conflict experiences of young adults with IDs. One technique used in previous studies of anger and aggression, though perhaps most commonly during clinical assessment, is the provocation inventory (Novaco, 2003; Hunter, 2010). Normally, the participant is asked to rank the relative 'provocativeness' of either pre-designated scenarios or a number of the participant's own experiences of conflict. With a view to exploring these factors in young people with IDs, a provocation ranking task was developed for this study. Crucially, the scenarios used in the task have been developed to reflect the experiences reported by young adults with IDs in Study 1. In doing so, it is hoped that the study will identify which key experiences of conflict in this group are the most common and which are the most anger provoking.

10.1.1 Parental Anger and Aggressive Behaviour

In Study 1, only participants with problems of aggression were found to report conflict with parents. While these findings were based on few data and thus purely descriptive, they suggest that experiences of parental conflict may be particularly important to young people with IDs that have problems of aggression. With a view to examining whether this

is a point of difference between people with and without problems of aggression, a scene of parental conflict was included in the task.

From a developmental perspective, existing research has linked exposure to parental anger and aggression to aggression in forensic patients with IDs (Novaco & Taylor, 2008). However, little is known about the roles that exposure to household anger and aggression might have in the development of aggressiveness in the non-forensic population with IDs. Therefore, the present study included an additional measure to explore whether participant-reported exposure to aggression and anger in the household is associated with aggressiveness.

10.2 Study 2. Provocative Scenario Ranking, Experiences of Conflict and Parental Aggression
METHODS

10.2.1 Aims

Study 2 sought to explore the relationship between particular experiences of social conflict and problems of aggression in young adults with IDs. Additionally, the study aimed to examine whether experiences of parental aggression are associated with aggressiveness in this group. Below, the aims of each of the two aspects of the study are explained and outlined separately:

10.2.1.1 Conflict Experiences

The study aimed to compare how provocative aggressive and non-aggressive participants found several scenarios of social conflict, as well as how recently they encountered similar scenarios.

No previous studies were found that compare the relative provocativeness of different social scenarios between aggressive and non-aggressive participants with IDs. As such, no

directional hypotheses about possible differences between groups were given. Instead, the study sought to address the following research questions:

1. Do young people with IDs and frequent aggression rank specific types of social conflict as being more or less anger-provoking than their non-aggressive peers do?

2. Do young people with IDs and frequent aggression rank specific types of social conflict as being more or less anger-provoking than other types?

3. Do young people with IDs rank specific types of social conflict as being more or less anger-provoking than their non-disabled peers do?

In regards to how recently the groups encountered conflict, existing findings did advocate several specific hypotheses. Study 1 found two notable trends in that aggressive participants encountered more conflict at home with family and more incidents of aggression. Study 1 and a number of earlier studies also found that negative social interactions such as aggression and victimization, appear to be more common in the everyday lives of people with intellectual disabilities than in the non-disabled population (Jahoda & Markova, 2004; Levy & Packman, 2004; Sobsey, 1994). On the basis of these findings, the following hypotheses were offered:

1. Participants identified as being aggressive will have encountered direct aggression more recently than those not identified as being aggressive.

2. Participants identified as being aggressive will have encountered conflict with parents more recently than those not identified as being aggressive.

3. Participants with IDs will have encountered conflict more recently than the participants without IDs.

10.2.1.2 Family Aggression

Existing research has linked exposure to parental anger and aggression to aggression in forensic patients with IDs (Novaco & Taylor, 2008). However, little is known about the roles that exposure to household anger and aggression might have in the development of aggressiveness in the non-forensic population with IDs. Therefore, the present study intended to explore whether participant-reported exposure to aggression and anger in the household was associated with aggressiveness. On the basis of the existing findings, the following hypothesis was offered:

> 1) Frequent aggression will be associated with greater exposure to parental anger and aggression.

10.2.2 Ethical Approval

Ethical approval was given by the University of Glasgow Faculty of Medicine Research Ethics Committee (Ref: FM01209). The approved proposal encompassed Studies 2, 3 and 4. All data for these studies were collected over two sessions using the same participants. However, given the clear distinctions between the research aims of different aspects of the project, it was considered appropriate to present the research as three separate studies.

10.2.3 Design

A cross-sectional design was employed to compare the responses of 1) aggressive and non-aggressive participants and 2) intellectually disabled and non-disabled participants. Comparisons were made of responses to 1) the scenario rating task and 2) the household anger and aggression index. Additional within-group comparisons were conducted between responses to specific questions.

Previous studies where participants with IDs have been asked to rank experiences or scenarios of provocation have been evaluations of questionnaires or provocation inventories (e.g. Hunter et al, 2010; Novaco, 2003). Given that the present study used a group-comparison methodology, there was no appropriate methodological precedent by

which sample size could be predicted with any confidence. As such, a target group sample size of 24 was generated for this phase of research (Studies 2, 3 and 4) based on previous studies with methodological parallels to Studies 3 and 4 (see Power Calculation for Study 3 on p.168).

10.2.4 Inclusion and Exclusion Criteria

10.2.4.1 Inclusion Criteria

The following criteria were required for inclusion in the designated groups:

1. **All Participants**: Aged 16-20 years.

2. **ID Group**: Identified by staff as having a mild to moderate intellectual disability (presence of an ID was later verified by completion of the Wechsler Abbreviated Scale of Intelligence).

3. **Aggressive Groups**: Staff-reported history of recent and frequent aggressive behaviour (six or more significant acts of physical or verbal aggression in preceding six months)

Staff at Additional Supports Needs colleges verified that potential participants had sufficient receptive and expressive language skills to engage in the interview. To minimize potential socio-economic differences, efforts were made to recruit participants of both groups from largely the same areas of Central Scotland.

10.2.4.2 Exclusion Criteria

Individuals identified as, or suspected of, having Autism Spectrum Disorders were excluded due to the qualitative impairments in social interaction and communication and understanding associated with this disorder (DSM-IV-TR, 2000).

10.2.5 Recruitment

During recruitment for Study 1, it proved difficult to obtain sufficient numbers of participants solely from Further Education departments. For this reason, a wider range of potential recruitment sites were identified for this second phase of research. Head Lecturers of Additional Support Needs sections and mainstream departments of several Further education colleges were approached and given a written research proposal (see Appendix F). Additionally, this research proposal was sent to Head Teachers of schools for children with additional learning needs, youth clubs and charity groups working with young adults.

The researcher considered recruiting aggressive participants from clinical services offering anger management programmes. However, it was noted that such a strategy might only include individuals that are relatively help-seeking. A clinical sample may also exclude those whose aggressive behaviour is of a more instrumental nature and consequently do not have particular problems with anger.

It was also considered preferable for both aggressive and non-aggressive participants to be recruited from the same sites as this would reduce the risk of confounding effects of socio-demographic differences. In Study 1, approximately half of the participants with IDs were found to have difficulties with aggression. Given that the majority of participants for the later studies were to be recruited from the same sites as Study 1, this was taken as a strong indication that sufficient sub-samples of aggressive and non-aggressive individuals could be recruited. Allocation to aggressive and non-aggressive groups were therefore made on the basis of teacher or lecturer interviews as per Study 1.

The same recruitment protocol was used at each recruitment site. Once management permission was obtained, classes or groups of potential participants were identified with the aid of institution staff members. Given the necessarily conversational nature of the data collection process, receptive and expressive communication skills were important criteria for judging the suitability of classes of students with IDs.

The researcher presented a brief summary of the purpose of the study and what participation would involve to the identified classes of potential participants and then gave them packs containing an information sheet and reply slip (see Appendix G). Presentations

were conducted during class time and in the presence of relevant staff members. Potential participants were invited to consider participation over the coming days and to discuss the matter with parents or teachers if they wished. They were told that if they were interested in participating or had any questions for the researcher, that they could give their names to a pre-designated staff member known to them. The details of individuals that wished to take part or wanted further information about the study were then passed on to the researcher.

Potential participants were also informed that they were free to contact the researcher directly by email at any time. Once any questions had been answered, the researcher and staff-members made appointments for the interested young people to complete the tasks during class or group time.

The two Additional Support Needs departments that had taken part in the first study also agreed to participate in the second phase of research. A local Secondary school providing education for people with additional support needs also agreed to take part. In respect to the non-disabled group, two mainstream college departments and two charity youth organisations agreed to participate.

The data collection process was scheduled to take place over three months from March to May 2010. However, as the schedule coincided with the end of academic terms, it was not possible to recruit sufficient participants over this period. A further difficulty was that a considerably smaller proportion of the sample had problems with aggression.

During the summer, recruitment from charity youth organisations and several youth clubs continued. After the summer holidays, recruitment from the four college departments and the secondary school recommenced. From autumn, recruitment commenced at one further secondary school and another youth group. This culminated in the final sample of 45 participants with IDs and 39 participants without IDs (see the 'Participants' section of Study 2's Results chapter for participants' details; p.140).

10.2.6 Justification of Measures

Separate rationales are given for the measures used to examine 1) conflict experiences and 2) family history of aggression

10.2.6.1 Scenario Rating Task (Conflict Experiences)

Study 1 identified key contextual features of the conflict experiences of young people with IDs. Given the exploratory nature of Study 1, further, more focused, investigation of these experiences was deemed necessary. Specifically, it was considered useful to clarify which forms of social conflict occur most frequently and which actually provoke the most anger.

One previous study has examined which forms of social conflict are the most provocative and most common in the lives with IDs of adults of various ages (Hunter et al, 2010). By collating clinical records of patients' actual experiences of conflict, they calculated which types of conflict scenarios were the most common and the most angering. While the study used clinical records rather than experimental measures, it became apparent that aspects of this qualitative approach to exploring conflict could inform the development of a new and novel measure of conflict experiences that were tailored to the experiences of young adults.

The crux of the idea was that the responses of participants in Study 1 could be used to develop five vignettes that represent categories of social conflict common to the lives of young adults with IDs. Participants would be asked to rank the provocativeness of categories and indicate when they last had a similar experience. The vignettes, which will be described in detail in the following section, were considered to reflect the following categories of conflict: 1) physical violence 2) others spreading derogatory rumours about you 3) bullying or provocation 4) parental chastisement 5) being betrayed or "let down" by a friend. It was decided that all five scenarios did represent meaningfully distinct types of conflict scenarios. The scenarios were developed specifically to represent key features of conflict in the lives of young adults with IDs and the research team agreed that these implied categories did seem to represent salient experiences of young people with IDs.

By asking participants to rank, rather than rate, the task items, the risk of response style biases implicit to rating tasks was largely eliminated (Baumgartner & Steenkamp, 2001). In

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other words, it reduced the risk that findings would reflect differences in how participants respond to questions in general rather than differences between their views about the relative provocativeness of each scenario.

10.2.6.2 Family Aggression Index

The household anger section of The Aggression and Anger Assessment (3A; Taylor, 1999) was seen to have several desirable attributes. For one, the index is brief, reducing burden on participants. Also, whilst it has been found to be a valid measure of household aggression, the questions remain very general and requires no disclosure of specific personal experiences. This is advantageous where discussing potentially sensitive subjects as the questions are thereby more likely to elicit honest answers and less likely to cause distress to participants. Finally, the index has already been used previously with offenders with IDs, many of whom demonstrated aggressive behaviour (Novaco & Taylor, 2008).

10.2.7 Development and Piloting of Scenario Rating Task

In addition to serving as the stimuli for the Scenario Rating task of the present study, the scenarios were developed to be used as provocative vignettes in the outcome expectancy task of Study 4. The full vignettes used in the outcome expectancy task include additional components that were not used in the present study, such as more extended narratives, each with two alternative endings. As such, the present section only outlines the development of the basic storylines of the five provocative scenarios and the design of the Scenario Rating task itself. The additional features of the full vignettes used in the outcome expectancy task are described in the Methods section for Study 4.

10.2.7.1 Identifying Key Themes for the Vignettes

To meet the needs of both tasks, it was necessary for the vignettes to reflect the particular experiences of provocation faced by young people with IDs. Several previous studies have successfully used vignettes to examine the relationships between SIP and aggression in adults with IDs (e.g. Pert & Jahoda, 2008; Kirk et al, 2008). In order to construct narratives

representative of the experiences reported by participants in Study 1, the researcher attempted to identify salient themes in respect to three contextual features of social interactions: 1) WHO the other person was, 2) WHERE the event took place and 3) WHAT happened. From an initial analysis of the results and synopses of participant responses, the themes, illustrated below in Table 10.1, emerged:

Table 10.1

Key Themes to Emerge from Study 1. (Key points highlighted in bold)

'WHO'	'WHERE'	'WHAT'
*13 of 26 incidents were with **classmates that were not friends** of the participant (9 of whom also had IDs) * Including friends, 15 of 26 incidents involved **others with IDs**. * 4 of 12 **aggressive Ps** described incidents with **family members** while none of the NAGG participants did.	* 13 of 26 incidents were **at college or school** * Of the remaining 13 incidents, 5 occurred over the **phone or online** * All 4 incidents with family members cited by aggressive participants were all in the **home**. Only one NAGG participant cited an incident at home.	* 15 of 26 incidents involved **direct aggression** ***** These incidents of aggression included 5 incidents of **physical violence.** * The most frequent type of incident other than the 15 incidents of aggression was being **let down or betrayed** (6 incidents). * 10 of 26 participants reported feeling **alienated or victimized** * It was observed that 4 of the incidents involved **rumours** about the participant. Also, during interviews participants often spoke incidentally about hearing things about others through friends or classmates. It seemed that rumours and 'telling stories about others' were quite common features of college culture for these participants.

10.2.7.2 Developing the Vignettes

Based on these findings from Study 1, it was apparent that a number of the scenes should include direct, aggressive provocation and feature non-friend peers with IDs. It was also decided that one scenario of provocative (but universally believable) conflict with family at home should be developed. However, there were other important features identified from the results that were considered worth involving in the scenarios. To ensure that five scenarios covered the key themes identified in Study 1, the following list was assembled including the desired features:

- At least one scene with peers with IDs that are not friends of the protagonist.
- One scene involving a parent in the family home. *(Only the aggressive participants talked about conflict with family members).*
- Several scenes (three) in or around school/college
- One scene occurring over the phone
- One scene of direct, verbal aggression

- One scene of physical violence

- One scene of being let down

- At least one scene where the protagonist is being picked on or victimized.

- One scene where provocation occurs via a rumour.

- As the majority of incidents reported by participants of Study 1 involved people of the same sex (13 of 15 males and 8 of 11 females), it was decided that as per previous work, male and female versions of provocative scenes would be preferable.

Before proceeding to develop new vignettes, the provocative vignettes used in previous studies, to examine outcome expectancy in people with IDs, were reviewed (Pert et al, 2008; Kirk et al, 2008). Firstly, this gave an opportunity to observe how vignettes have been worded previously so as to make them accessible for people with mild to moderate IDs. Secondly, there was the possibility that some scenarios might fit the profiles for the vignettes in the present study. One scene used by Kirk et al (2008), involving the protagonist being tripped by classmates, did so. It depicted aggressive victimization by peers at college. It was decided that the vignette would be included in the new measure.

The narratives of the five final scenarios are summarized below:

- Physical Violence: *(in the corridor, participant is tripped and mocked by classmates).*
- Unprovoked personal insult: *(At a bus stop, unknown peer laughs at participant and tells them to go somewhere else).*
- Social Aggression: *(in a cafeteria, friend tells participant that a classmate at another table was telling "nasty stories" about them).*
- Chastisement: *(parent tells participant off unfairly).*
- Betrayal: *(after the participant waiting over half an hour for them, a friend phones to cancel a trip to the cinema because they "can't be bothered").*

10.2.7.3 Photographic Illustrations

Following the precedent of previous studies, photographs were produced to illustrate the scenes (Kirk et al, 2008; Pert & Jahoda, 2008). The researcher considered using film clips instead of static images to illustrate the vignettes. One possible advantage of using dynamic illustrations would be that they might give a richer and more naturalistic depiction

of a scenario than a photograph. This could help make the scene more realistic to a participant, thus engaging them more in the process and, in turn, eliciting more authentic thoughts and feelings. However, one major drawback of using dynamic illustrations is that it might be difficult to ensure that all participants attend to the same cues in the illustration (Pollick, personal communication). For example, if a participant does not pay full attention over the course of the dynamic illustration, they might miss certain cues within the stimulus. Conversely, by using static images, it is possible to ensure that all participants are exposed to identical arrays of cues within each stimulus. For this reason, it was decided that static illustrations would be used.

It is also likely that if dynamic stimuli had been used, it could have been more difficult to adapt the vignettes for use in this Scenario Ranking task. For one, if the scenarios were not represented in static images, it might be a practical challenge to produce a process by which participants could rank the five scenarios. It might also have been more difficult for participants to view dynamic illustrations as representing whole categories of experience, such as physical aggression, rather than the specific scenarios portrayed in the vignettes.

Cartoons and other artistically rendered illustrations were also considered. However, it was thought that the presence of 'real' people in photographs would make it easier for participants to engage with the scene.

The first step was to develop ideas for the illustrations and several possible images for each scene were sketched in pencil by the researcher. Then, the research team chose the images that they believed best communicated the story of each scene. The stimuli for the task were five small laminated cards, approximately the same size as a 'playing card' and all approximately 6x4 in proportion (see Appendix D for images of the cards). Each card showed a picture of one of the scenarios with the name of the scenario written in large letters at the bottom. All photographs were taken using a digital camera. All images used were in full colour, had initial dimensions of 2048 by 1536 and a resolution of 3.2 megapixels though some were subsequently cropped to best illustrate the scenes. Photographs were taken in various locations around Glasgow city and no actors had IDs.

10.2.7.4 Piloting

The question schedule of the task is outlined in the procedure section below. A response sheet was produced where the researcher could record 1) the rank given to each scene 2) whether a category of conflict had been experienced before 3) when the last occasion was and 4) how often they encounter similar situations (see Appendix D). The task was piloted with two typically developing adults and one young adult with IDs.

As a consequence of piloting, two amendments were made. The participants with IDs found it difficult to give an estimate of how often he or she encountered each type of situation. Indeed, it is widely acknowledged that some people with IDs can have difficulties making judgments about time (Finlay & Lyons, 2001). This led to concerns that participants' reported estimates of how often they encountered certain incidents might not be an accurate reflection of their experiences.

It was noted that a possible solution to this problem might lie in the fact that the task also asked participants to indicate when they last encountered each type of incident. In a sense, having a measure of how recently each participant in a group had encountered a particular experience offers a proxy measure of how frequently that group encounters such experiences. With the suggestion that estimated frequencies may not yield accurate results, it was decided that using the data from the recency question as a proxy measure would be a more effective way of gauging how often participants encountered each category of conflict. Accordingly, the 'frequency' question was removed from the protocol. A second amendment was to add space on the response sheet for notes and comments.

10.2.8 Measures

10.2.8.1. Scenario Ranking Task

This task was developed to examine experiences of five different types of social conflict relevant to young adults with IDs. The task covered 1) which types of situations are most provocative 2) whether an individual has ever encountered similar situations and, if so 3) when they last encountered such a situation. Participants were presented with cards depicting pictures of five provocative scenarios. Participants were told the story of each

scenario and then asked to pick the two situations that would cause them the greatest degree of anger if they encountered them in 'real life'. Then, they were asked to pick which of their top two would elicit the most anger. The two cards were then placed in a row in front of participants, with the most provocative card furthest to the left. Then, they were asked to add the three remaining pictures to make a row of five pictures going from "makes me most angry" on the left to "not so bothered" on the right. The rank of each scene was noted onto a response sheet by the researcher.

The cards were then used to represent more generic categories of difficult social situations in a second task. Participants were asked to indicate whether they had ever experienced 1) physical violence 2) someone spreading malicious rumours about them 3) someone trying to bully or provoke them 4) being chastised by a parent or 5) being 'let down' by a friend (see Appendix D for response sheet and illustrated cards). Where participants indicated that they had encountered these situations, they were asked to indicate when they last experienced this. Again, answers were recorded on a response sheet. The scenario rating task was developed for this study and, as such, no psychometric data was available. However, it has been piloted on individuals with and without IDs, as described in the preceding section. The task can be completed in approximately five to ten minutes.

10.2.8.2 Household Aggression Index (from The Anger and Aggression Assessment, 3A, Taylor 1999)

Participants' reports of parental anger and aggression were gathered using the household aggression section of "The Anger and Aggression Assessment" (3A, Taylor 1999). Participants were asked to indicate whether or not they had observed their parents becoming angry, fighting with each other or fighting with other people. The index has been used successfully in a study with offenders with IDs (Novaco & Taylor, 2008). The index is reported to have acceptable internal reliability (co-efficient=-0.087) and its distribution shows very little skewness (Chronbach's α= 0.66; Novaco & Taylor, 2008). The schedule for the task can be found in Appendix H.

10.2.8.3 Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999)

The two-subscale version of the WASI provides an estimate of general intellectual ability by testing vocabulary and matrix reasoning skills. The WASI is an abbreviated version of the Wechsler Adult Intelligence Scale–III (WAIS -III; Wechsler, 1997). The WASI can be completed in a relatively brief period of time and has acceptable Correlation scores with the WAIS -III at 0.87 for Vocabulary, 0.66 for Matrix Reasoning and 0.87 overall (Wechsler, 1999). Each participant completed the WASI to ensure that they had been assigned to the appropriate group.

10.2.8.4 Checklist of Challenging Behaviour (CCB; Harris, 1993; see Appendix E)

The aggression subscale of the CCB was completed with staff members with six or more months experience of working with the particular participant they reported on. CCB scores were used to assign each participant to the aggressive or non-aggressive subgroup. Participants were assigned to the appropriate aggressive subgroup if they were reported to have enacted six or more acts of verbal or physical aggression in the preceding six months. This measure was developed specifically for use with staff working with people with IDs.

10.2.9 Procedure

All measures used in Studies 2, 3 and 4 were completed with the same participants over two sessions. All measures used in the present Study were completed in the second session (see Table 10.2 below).

Table 10.2

Schematic of Procedure of Studies 2, 3 & 4 (measures used in Study 2 are highlighted in bold).

Participants	Session	Study	Measure	Duration	Function
Test and Control Groups (A-ID, NA-ID, A-ND, NA-ND):	SESSION ONE	STUDY 4	Belief about Response to Threat Task (BARTT)	40-60 minutes (approx)	Explores participants' expected outcomes of aggressive and submissive behaviour
	SESSION TWO	STUDY 3	Emotion Recognition Task (E-WALK)	30 mins (approx)	Measures accuracy of emotion recognition from human motion.
		STUDY 2	**Scenario Rating Task**	**10-15 minutes (approx)**	**Records how recently participants experienced different forms of social conflict and how provocative they found them.**
		STUDY 2	**Family Aggression Interview**	**10 minutes (approx)**	**Levels of anger and aggression in household.**
		STUDIES 2, 3 & 4	**Wechsler Abbreviated Scale of Intelligence (WASI; 2-subscale vers.)**	**15 minutes (approx)**	**Indicator of intelligence**
Teacher/Lecturers:		**STUDIES 2, 3 & 4**	**Checklist of Challenging Behaviour**	**5 minutes (approx)**	**Indicator of participants' recent aggressive behaviour.**

Each session was completed in a private room on the grounds of the participating institution. Participants were made aware that a member of staff was present in an adjacent room and that they were free to withdraw from the experiment at any time.

The second session began with the Emotion Recognition task discussed in Study 3. Participants were then asked to complete the Scenario Rating task as outlined in the measures section above. Participants were then asked to complete the Family Aggression index, consisting of the following three questions: 1) whether or not their parents get angry, 2) whether they fight with each other and 3) whether they fight with other people. Finally, participants completed the two-subscale WASI. The WASI was completed last because it was judged to be contradictory to the open spirit of the interview which sought to explore the experiences of participants.

10.2.10 Analysis Strategy

10.2.10.1 Scenario Rating Task

Scenario Ranking
Participants ranked how provocative each of the five scenes was in relation to each other scene. Rankings were recorded as scores from 1 to 5. Where results are presented in p.146, the coding was inverted so that higher scores represent higher levels of provocation (i.e. an initial score of 5 becomes 0, 4 becomes 1, 3 becomes 2, 2 becomes 3 and 1 becomes 4).
ANALYSIS: As these participants' ranks were used to produce scores for each scenario, the resulting data was ordinal in nature. Therefore, the researcher planned to use the non-parametric Mann-Whitney U Test to compare rankings of each scene between ID and ND groups and between AGG and NAGG subgroups. Additional comparisons of the relative rankings of the five scenes would then be conducted within each group.

Recency of Experiences
Whether participants have ever experienced the situations was coded as either 'yes' or 'no'. The recency of experiences was coded into ordinal categories that represented exponentially greater periods of time (e.g. 5= within one week, 4=within one month, 3=within 6 months; see p.149 for full details of these categories). **ANALYSIS**: Again, as the data was ordinal in nature, the researcher planned to use Mann-Whitney U Tests to

compare the recency scores of ID and ND groups and between AGG and NAGG subgroups. As this study was exploratory in nature, it was considered particularly important to ensure that it was sensitive to potential group differences. To reduce the risk that significant findings would go undetected, it was decided that formal corrections for family-wise error would not be conducted for all comparisons. However, where relevant, the significance of findings after bonferroni corrections are applied will also be reported.

10.2.10.2 Household Aggression Index

Responses to each of the three forced choice items were coded separately as 'yes' or 'no'. The "Index score" was the sum of the three responses where yes=1 and no=0 giving a score on a 4 point scale (0-3). **ANALYSIS:** It was decided that Mann-Whitney U Tests would be conducted to compare the scores of ID and ND groups and between AGG and NAGG subgroups.

10.3 Study 2. Provocative Scenario Ranking, Experiences of Conflict and Parental Aggression
RESULTS

10.3.1 Participants

In total, 84 young adults participated in Study 2. Forty-five young people with IDs were recruited (ID group), including 15 individuals with frequent aggression and 30 individuals with no reported problems of aggression. Thirty-nine young people without IDs were also recruited (ND group), including 13 individuals with problems of aggression and 26 individuals with no reported problems of aggression. All participants were aged between sixteen and twenty years and were planning to leave full-time education by the end of the following academic year.

10.3.1.1 Recruitment Sites

The details of the sites from which participants were recruited are outlined below in Table 10.3:

Table 10.3

Studies 2, 3 & 4: Recruitment Sites

	ID Group	ND Group
Further Education College		
-Mainstream College Departments (2)	0	13
-Additional Support Needs (ASN) Department (2)	35	0
Secondary Education		
-Additional Learning Needs (ALN) School (2)	8	0
University Department (1)	0	2
Youth Groups/Clubs (5)	2	24
TOTAL	45	39

During the recruitment stage of Study 1, it became apparent that very few young people with IDs remained in mainstream education after the age of 16 years. For this reason, it was necessary to recruit the majority of the participants with IDs for the present study from Secondary Schools and College departments that offer specialist education to people with IDs.

10.3.1.2 Participants' Demographic Characteristics

ID & ND GROUPS

The socio-demographic details of the groups and subgroups are displayed in Table 10.4 below:

Table 10.4.

Studies 2.. ID and ND Group Details

Group	ID	ND
N	45	39
Age	Mean= 18 (SD= 1.41)	Mean= 17.9 (SD= 1.49)
	Median= 18	Median= 18
	Range= 16-20	Range= 16-20
		Mann-Whitney U= 850, *p*=.801
Carstairs Social Deprivation Score	Mean= 2.02 (SD= 5.42)	Mean= 3.36 (SD= 4.79)
	Median= 1.35	Median= 4.19
	Range= -5.78-11.38	Range= -5.30-11.50
		Mann-Whitney U= 724, *p*=.167
Mean IQ estimate (WASI)	Mean= 63.1 (SD= 7.13)	Mean= 92.5 (SD= 10.5)
	Median= 63	Median= 86
	Range= 55-75	Range=81-124
		Mann-Whitney U= 0, *p*<.001***
Gender	Males= 33	Males= 18
	Females= 12	Females= 21
		χ^2 (1) = 6.47, *p*=.014***
Freq. Aggressive	Agg= 15	Agg= 13
	Nagg= 30	Nagg= 26
		χ^2 (1)= <0.01, *p*=1
***p<.05		

As Age, Social Deprivation and IQ were not normally distributed, of T-tests because responses. Table 10.4 demonstrates that the groups were well matched for age (U=850, p=.801) and aggressiveness (χ^2 (1)<.001, *p*=1). Social Deprivation was compared by using the most recent version of the Carstairs scale (Norman, 2001). The Carstairs scale uses Census data to produce scores of relative social deprivation by UK postcode. Although Table 10.4 suggests that the ND group appears to be from slightly more social deprived postcodes, no significant differences were found between the two groups (U=724, *p*=.167). However, while there were a similar number of males and females in the non-disabled

group, there were nearly three times as many males as females in the ID group (χ^2 (1) = 6.47, p=.014). One final point of note was that the mean IQ of the ND group was low for a non-disabled group. However, all participants in this group had IQ scores in the normal range and, thus, above the threshold for borderline ID (Wechsler, 1944).

AGGRESSIVE & NON-AGGRESSIVE SUBGROUPS

To allow comparisons between aggressive and non-aggressive individuals, participants in the ID and ND groups were divided into aggressive and non-aggressive subgroups. Group allocation was on the basis of whether individuals had enacted six or more acts of physical or verbal aggression in the preceding six months. This data was collected using the Aggression subsection of the Checklist of Challenging Behaviours (CCB; Harris, 1993; see Appendix E). The criteria given by the CCB were used to explain to participating staff which behaviours constitute physical and verbal aggression. Participants identified as having been physically or verbally aggressive to others on at least six occasions in the preceding six months were assigned to the aggressive (AGG) subgroups. The remaining participants constituted what will be referred to as the non-aggressive (NAGG) subgroups. It should be noted that 'non-aggressive' is merely a convenient term to describe participants below the threshold of frequent aggression and is not intended to imply that such individuals are 'never' aggressive. The socio-demographic details of the aggressive and non-aggressive subgroups of both the ID and ND groups are shown below in Table 10.5:

Table 10.5
Study 2. AGG and NAGG sub-group details

Group	ID		ND	
Sub-group	AGG	NAGG	AGG	NAGG
N	15	30	13	26
Age	Mean= 17.3 (SD= 1.16) Median= 17 Range= 16-20 Mann-Whitney U= 126, *p*=.014***	Mean= 18.37 (SD= 1.40) Median= 18 Range= 16-20	Mean= 17.6 (SD= 1.56) Median= 17 Range= 16-20 Mann-Whitney U= 138, *p*=.368	Mean= 18.1 (SD= 1.47) Median= 18 Range= 16-20
Carstairs Social Deprivation Score	Mean=2.4 (SD= 4.87) Median=2.07 Range=-5.78-9.84 Mann-Whitney U= 212 *p*=.745	Mean= 1.82 (SD= 5.75) Median= 1.15 Range=-5.6-11.38	Mean= 3.78 (SD= 4.12) Median=5.21 Range= -3.49-11.4 Mann-Whitney U= 157, *p*=.735	Mean= 3.2 (SD= 5.16) Median= 3.68 Range= -5.3-11.5
Mean IQ estimate (WASI)	Mean= 63 (SD= 7.23) Median= 63 Range= 55-73 Mann-Whitney U= 225, *p*<.999	Mean= 63.2 (SD= 7.20) Median= 62.50 Range= 55-75	Mean= 86.5 (SD= 9.53) Median= 84 Range= 81-117 Mann-Whitney U= 86.5, *p*=.013***	Mean= 95.5 (SD= 11.6) Median= 95.5 Range= 81-124
Gender	Males= 13 Females= 2 χ^2 (1) = 2.05, *p*=.153	Males= 20 Females= 10	Males= 11 Females= 2 χ^2 (1) =11.6, *p*=.001***	Males= 7 Females= 19
***p<.05				

As with the comparisons between ID and ND partivipants, Mann Whitney U Tests were conducted instead of T-tests because responses to Age, Social Deprivation and IQ were not normally distributed. The aggressive and non-aggressive sub-groups with IDs were well matched for IQ scores (U=225, *p*>.999) and levels of social deprivation (U=212, *p*=.745). There was also no significant difference in the proportions of males and females in each group (χ^2 (1)=2.05, p=.153). That said, while a third of the non-aggressive group were female, only two of the 15 aggressive individuals were female. The non-aggressive participants with IDs were also significantly older than the aggressive sub-group (U=125, *p*=0.014).

For the ND group, the sub-groups were well matched for age (U=138, *p*=.368) and social deprivation (U=157, *p*=0.735). However, the IQ of the non-aggressive group was significantly higher than that of the aggressive group (U= 86.5, *p*=.013).

There was a notable difference in the distribution of males and females across the two subgroups without IDs (χ^2 (1)= 11.6, *p*=.001). Three fifths of the non-aggressive group were females compared to two of sixteen aggressive individuals. It is appropriate to acknowledge at this stage the potential confounding effects of this gender imbalance. This

is especially pertinent given the evidence of differences in the nature and extent of aggressive behaviour by males and females across the lifespan (e.g. Archer, 2004; Fabes, Martin, & Hanish, 2003). With a view to evaluating the risk of confounding influences from gender differences in the present sample, supplementary comparisons between males and females are reported for each of the main measures of Studies 2, 3 and 4. Given that there were only two females in both the ID and ND aggressive subgroups, it was not possible to conduct such comparisons between the aggressive and non-aggressive subgroups.

10.3.2 Scenario Rating Sub-task 1: Provocation Ranking

The Scenario Rating Task encompassed two separate sub-tasks. The first of these, the Provocation Ranking sub-task, sought to address the following research questions:

> 1. Do young people with IDs and frequent aggression rank specific types of social conflict as being more or less anger-provoking than their non-aggressive peers do?

> 2. Do young people with IDs and frequent aggression rank specific types of social conflict as being more or less anger-provoking than other types?

> 3. Do young people with IDs rank specific types of social conflict as being more or less anger-provoking than their non-disabled peers do?

In order to examine how provocative each scenario was, participants were first presented with five scenarios of social conflict typical of the experiences of young adults with IDs. Participants were then asked to put the five scenes in order of how 'angry' they would feel if they were to experience similar situations in real life.

10.3.2.1 ID Group: Aggressive and Non-Aggressive Participants.

To address the first research question, the ranks assigned to the five vignettes by the AGG and NAGG subgroups of the ID group were compared (see Figure 10.1 below):
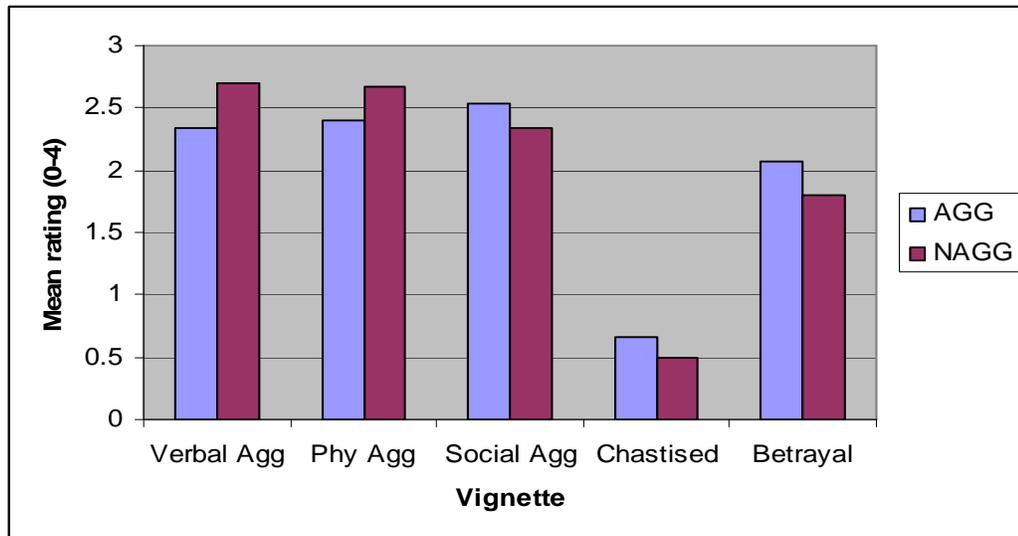
Figure 10.1 ID Group: Provocative Rankings of Participants with and Without Problems of Aggression. (least provocative=0 and most provocative=4)

The trends illustrated in Figure 10.1 above suggest that the mean ranks assigned to each vignette by the aggressive and non-aggressive groups were similar. Pair-wise comparisons, using Mann-Whitney tests, confirmed that there were no significant group differences in the mean rank of any of the five scenarios (Verbal Aggression: U=195, *p*=.452; Physical Aggression: U=206, p=.637; Social Aggression: U=197, *p*=.481; Chastised: U=198, p=.457; Betrayal: U=199, *p*=.530). As such, there was no evidence that the AGG group found certain scenarios more or less provocative than the NAGG group

10.3.2.2 Comparisons within Groups

In regards to the second research question regarding how anger-provoking each group found the different scenarios, Figure 10.1 above suggests that both the AGG and NAGG group found being chastised by a parent to be less provocative than other scenes. Friedman's Rank Tests showed that the rankings varied significantly across the five scenarios for the AGG group (χ_F^2 (4) =14.0, p=0.007 respectively). Pair-wise comparisons using Wilcoxon signed-ranks tests found that the AGG group ranked being chastised by a

parent as less provocative than the other four scenes (Verbal Aggression: Z=-2.84, *p*=.010; Physical Aggression: Z=-2.84, *p*=.005; Social Aggression: Z=-2.98, *p*=.003; Betrayal: Z=-2.54, *p*=.011).

The rankings of the NAGG group were also found to vary between the five scenarios (χ_F2 (4) =40.0, p=<0.001). As with the AGG group, they ranked the 'Chastised' scenario as significantly less provocative than the other scenes (Verbal Aggression: Z=-4.34, p=<0.001; Physical Aggression: Z=-4.68, p=<0.001; Social Aggression: Z=-4.12, p=<0.001; Betrayal Z=-3.34, p=0.001). The NAGG group also ranked being 'betrayed' by a friend as less provocative than physical aggression (Z=-2, p=0.046).

10.3.2.3 ND Group: Aggressive and Non-Aggressive Participants.

To examine whether findings of between-group comparisons were specific to young people with IDs, or represented all young adults with otherwise similar backgrounds, comparisons were repeated with the group of young adults without IDs (see Figure 10.2. below).
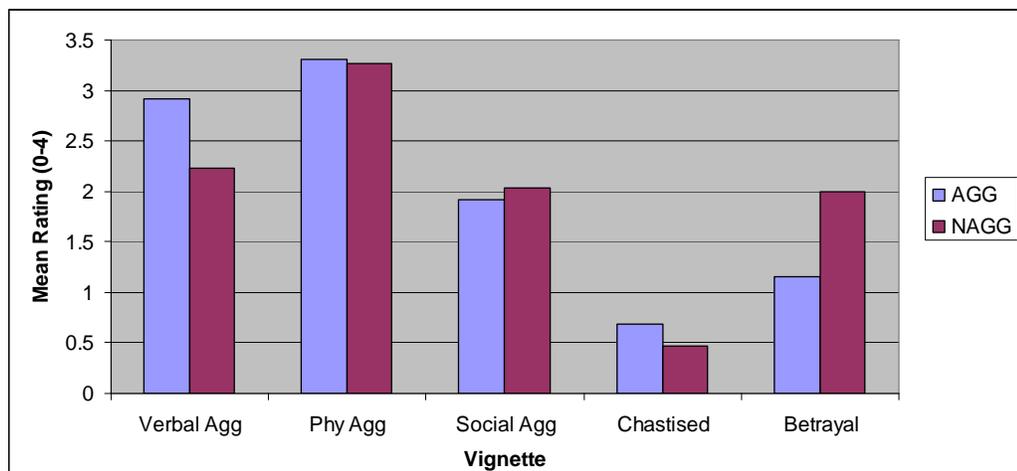
Figure 10.2 .ND Group: Provocative Rankings of Participants With and Without Problems of Aggression.

Whilst no differences were found between the aggressive and non-aggressive participants with IDs, the aggressive participants without IDs ranked 'Betrayal' by a friend as significantly less provocative than their non-aggressive peers (U=106, *p*=.047).[1] However, no significant group differences were found in the mean ranking of any of the four other

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[1] Once a Bonferroni correction is applied to this comparison, the p-value becomes non-significant (*p*= .235)

scenarios (Verbal Aggression: U=123, *p*=.155; Physical Aggression: U=168, *p*=.961; Social Aggression: U=153, *p*=.605; Chastised: U=153, *p*=.569).

10.3.2.4 Participants with and without Intellectual Disabilities

The final research question asked whether the ID group ranked certain scenarios as being more or less provocative than the ND group. The mean rankings of the participants with and without IDs are presented below in Figure10.3:
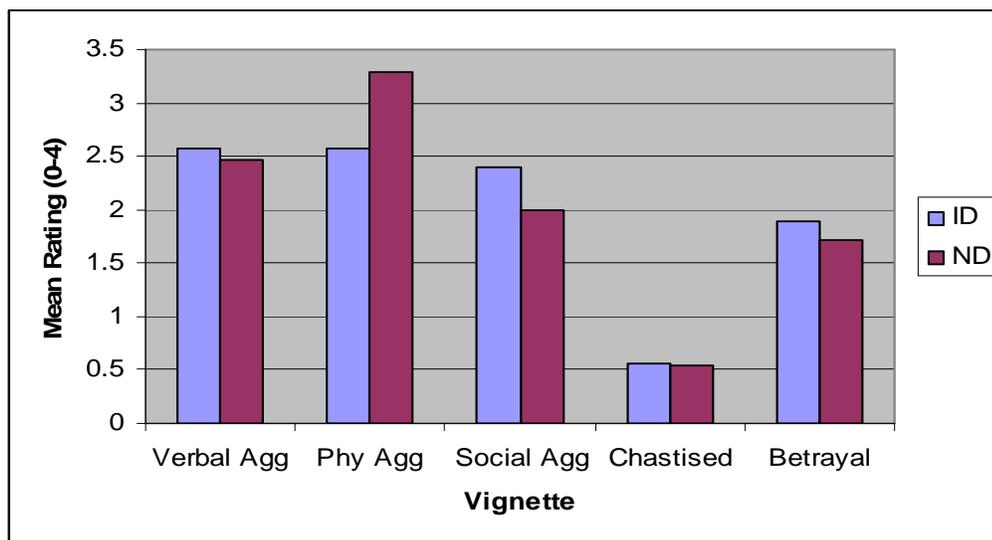
Figure 10.3. Provocative Rankings of ID and ND groups.

Interestingly, participants without disabilities rated the scene depicting physical aggression (being tripped and ridiculed by three peers) as significantly more provocative than the participants with IDs (U=574, *p*=.004).[2] They also ranked the vignette where a peer has been spreading insulting rumours about the participant (Social Aggression) as less provocative, although, this difference was not significant (U=684, *p*=.067). There were no significant differences found between the mean ranks of the remaining scenes (Verbal Aggression: U=826, *p*=.630; Chastised: U=857, *p*=.828; Betrayal: U=821, *p*=.598).

No significant differences were found between the provocativeness rankings by males and females with IDs for any of the scenes (Verbal Aggression: U=186, *p*=.771; Physical Aggression: U=191, *p*=.849; Social Aggression: U=197, *p*=.970; Chastised: U=180, *p*=.658; Betrayal: U=190, *p*=.849). However, the male participants without IDs ranked

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[2] This p-value remains significant if a bonferroni correction is made (*p*= .02)

'Verbal Aggression' as less provocative and 'Betrayal' as more provocative than females without IDs (U=115, *p*=.032; U=94.5, *p*=.005 respectively).[3] Significant gender differences were not found in the ND group for the remaining scenarios (Physical Aggression: U=155, *p*=.294; Social Aggression: U=168, *p*=.511; Chastised: U=168, *p*=.549)

10.3.3 Scenario Rating Sub-task 2: Recency of Conflict Experiences

In the second sub-task of the Scenario Rating task, participants were asked to indicate whether they had ever encountered a situation like each of those depicted in the vignettes and, if so, when they last experienced such a situation. To this end, the vignettes were used to represent broader categories of conflict situations that were identified as being pertinent to young people with IDs in Study 1. These categories, and the corresponding lead question to participants, are shown below in Table 10.6:

Table 10.6

Conflict Category Exemplified by Vignettes.

DESCRIPTION OF VIGNETTE	CATEGORY OF CONFLICT	QUESTION
Being tripped and ridiculed by peers.	Physical violence	"Has anyone ever physically hurt you like tripping, pushing or even punching or kicking?"
A peer spreading insulting stories about you.	Social Aggression	"Has anyone ever told nasty stories about you, or, spread rumours about you?"
Provoked by stranger at bus stop.	Verbal Aggression from Strangers	"Has anyone ever randomly been cheeky with you or verbally abused you? "
Undeservedly chastised by parent.	Parental Conflict	"Has your Mum or Dad ever told you off or given you a hard time so it made you angry or upset?"
Friend is already late to meet you. They call and say "I can't be bothered"	Let down/Betrayed by friend.	"Have you ever felt really let down by a pal or felt they should have done more for you?"

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[3] If Bonferroni corrections are made, the group difference for Betrayal remains significant (*p*= .025) but the difference for Verbal Aggression becomes non-significant (*p*= .160)

The recency of participants' experiences were used as a proxy measure of how often each group encountered each type of conflict. Responses were coded into seven ordinal categories:

6. Today or yesterday

5. Within the last week (seven days)

4. Within one month (including four weeks, 30 days)

3. Within the last six months

2. Within the last year

1. Over a year ago

0. Never

This sub-task sought to test three hypotheses about how recently participants encountered the different forms of social conflict:

  1. Participants identified as being aggressive will have encountered direct aggression more recently than those not identified as being aggressive.

  2. Participants identified as being aggressive will have encountered conflict with parents more recently than those not identified as being aggressive

  3. Participants with IDs will have encountered conflict more recently than the participants without IDs.

10.3.3.1 ID Group: Aggressive and Non-aggressive Participants

Figure10.4 below illustrates how recently AGG and NAGG subgroups of the ID group reported encountering each of the five types of conflict:
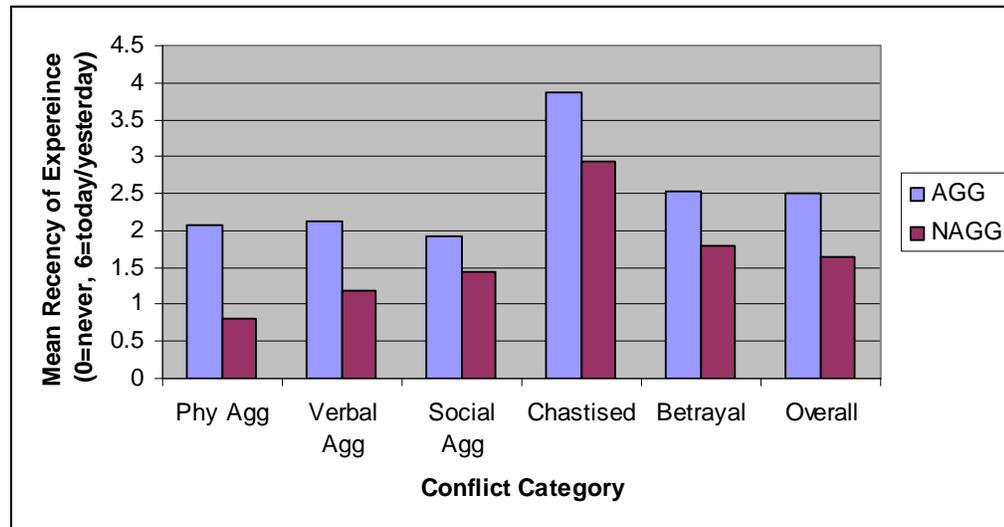
Figure 10.4 . ID Group: Recency Scores of Participants With and Without Problems of Aggression.

The first hypothesis predicted that aggressive participants would have encountered aggression more recently than non-aggressive participants. Indeed, Figure 10.4 suggests that the AGG group members tended to have encountered each of the five forms of conflict more recently than the NAGG group, including physical and verbal aggression. The difference appears to be particularly marked for physical aggression. In line with the second hypothesis, the data also appears to suggest that the AGG group encountered parental conflict (chastisement) more recently than NAGG group.

Pair-wise comparisons revealed that, overall, the AGG group had experienced conflict more recently than the individuals without problems of aggression (U=4387; p=.005). As predicted, the AGG group were found to have encountered physical aggression more recently than the NAGG group though this was not proven for verbal aggression (U=130, p=.015; U=173, p=.178 respectively). Although AGG group appeared to have encountered parental conflict more recently, this difference was not significant (U=155, p=.087). Differences were not found in how recently the AGG and NAGG groups encountered the remaining scenarios (Social Aggression: U=200, p=.534; Betrayed: U=182, p=.276).[4]

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[4] After Bonferroni corrections, the group difference in overall recency of conflict remains significant (p= .0.03) but the difference in recency of physical aggression becomes non-signifcant (p= .09)

10.3.3.2 Comparisons within Groups

A further question to be examined is whether the AGG or NAGG groups it had encountered certain types of conflict more recently than others. The trends illustrated in Figure 10.4 suggest that members of both groups tended to have encountered parental conflict more recently than other categories of conflict. Friedman's Ranks tests found that members of the NAGG groups varied in how recently they had experienced each type of conflict (χ_F2 (4) =28.36, p<.001). However, this was not found to be the case for the AGG group (χ_F2 (4) =8.47, p=.076).

Pair-wise comparisons were conducted between the provocation rankings of each of the five vignettes for the NAGG group. The NAGG group reported encountering parental conflict significantly more recently than any of the other forms of conflict (Physical Aggression: Z=-3.78, p<.001; Verbal Aggression: Z=-3.55, p<.001; Social Aggression: Z=-2.84, p=.005; Betrayed: Z=-2.09, p=.036). They also tended to have encountered physical aggression less recently than social aggression or being betrayed by friends (Z=-2.30, p=.022; Z=-2.60, p=.009 respectively).

10.3.3.3 ND Group: AGG and NAGG Subgroups

Comparisons between the recency of AGG and NAGG participants' experiences of conflict were repeated for the ND group (see Figure 10.5 below).
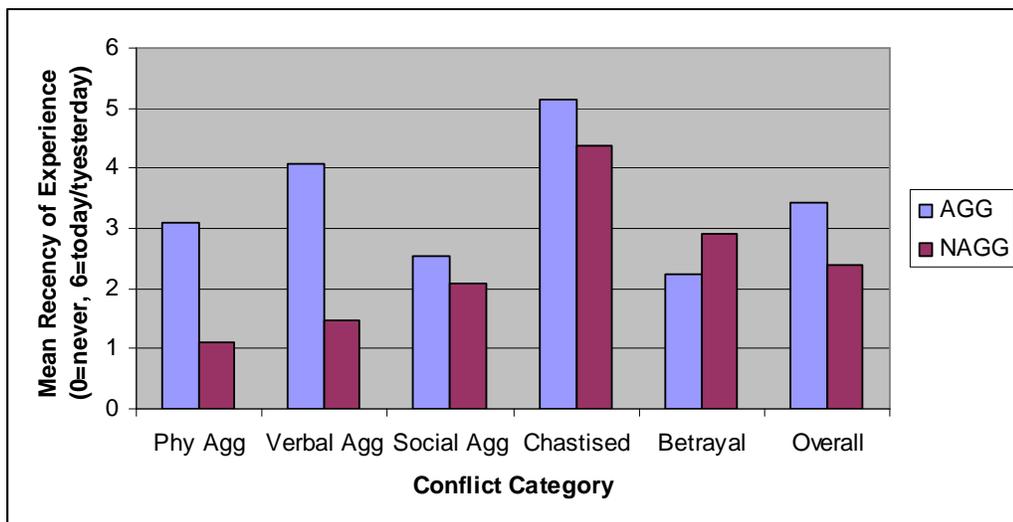
Figure 10.5. ND Group: Recency Scores of Participants With and Without Problems of Aggression.

In keeping with findings from the participants with IDs, the AGG group had encountered conflict more recently than the NAGG group (U=3139, p=.003). Again, replicating the findings of the participants with IDs, they also reported encountering physical aggression more recently than the NAGG group (U=87, p=.010). The AGG group also encountered verbal aggression more recently than the NAGG group (U=51, p<0.001). The groups were not found to vary in terms of parental conflict or social aggression (U=134, p=.308; U=489, p=.489 respectively).[5]

10.3.3.4 ID and ND Groups

It was also predicted that participants with IDs would have encountered conflict more recently than non-disabled participants. Figure 10.6 illustrates how recently participants with and without IDs last experienced each of the five types of conflict:
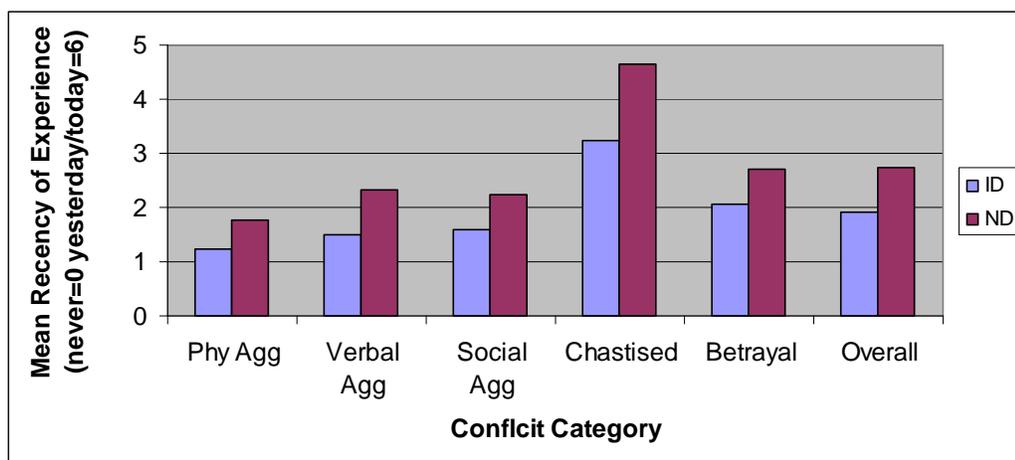
Figure 10.6 . Recency Scores of ID and ND Groups.

i) Comparisons Between ID and ND Groups

Contrary to Hypothesis 3, Figure 10.6 suggests that the ND group members tended to report encountering each of the five forms of conflict more recently than the ID group. Indeed, overall, participants with IDs encountered conflict less recently than their non-disabled peers (U=17203; p<.001).

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[5] If Bonferroni corrections are applied, group differences in overall recency of conflict and recency of verbal aggression remain significant (p= .018; p< .001 respectively) but the difference in physical aggression becomes non-significant (p= .06)

Analyses confirmed that participants without IDs had experienced conflict with parents significantly more recently than the participants with IDs (U=516, p=.001). This trend was mirrored for verbal aggression but this difference was not found to be significant (U=670, p=.052). No differences were found in how recently the groups had encountered the remaining scenarios (Physical Aggression: U=782, p=.363; Social Aggression: U=699, p=.101; Betrayal: U=707.000, p=.116 respectively).[6]

In the ID group, no significant differences were found between males and females for any of the scenarios (Verbal Aggression: U=168, p=.454; Physical Aggression: U=176, p=.586; Social Aggression: U=196, p= 970; Chastised: U=183, p=.695; Betrayal: U=161, p=.341). However, in the ND group, males reported being betrayed by friends more recently but encountering verbal aggression less recently than females (U=105, p=.017; U=79.5, p=.001).[7] As with the ID group, no significant differences were found for 'Physical Aggression', 'Social Aggression' or 'Chastised' scenarios (U=137.5, p=0.148; ; U=188, p=0.989; ; U=141.5, p=0.183).

ii) Comparisons within ID and ND Groups

Another way of examining whether ID and ND groups differed in their experiences of conflict was to examine whether they encountered particular forms of conflict more recently than others. The trends illustrated in Figure 10.6 suggest that members of both groups tended to report that they had encountered parental conflict more recently than the other types of conflict. Friedman's Ranks Tests found that both ID and ND groups varied in how recently they had experienced each type of conflict (χ_F2 (4) =32.6, p<.001 and χ_F2 (4)= 49.1, p<.001 respectively).

Pair-wise comparisons revealed that the ID group reported experiences of parental conflict more recently than the other scenarios (Physical Aggression: Z=-4.26, p<.001; Verbal Aggression: Z=-4.25, p=<.001; Social Aggression: Z=-3.50, p<.001; Betrayal: Z=-2.76, p=.006). The ID group also reported being betrayed by a friend more recently than encountering physical aggression (Z=-2.51, p=.012). Similarly, the ND group reported encountering parental conflict significantly more recently than the four other categories of

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[6] If Bonferroni corrections are applied, group differences in the overall recency of conflict and recency of Parental Conflict remain significant (p< .001; p= 0.06 respectively)

[7] If Bonferroni corrections are applied, gender differences in recency of Verbal Aggression remains significant (p= .006) but the difference in recency of Betrayal becomes non-significant (p= .102)

conflict (Physical Aggression: Z=-4.97, *p*<.001; Verbal Aggression: Z=-4.84, *p*=<.001; Social Aggression: Z=-4.43, *p*<.001; Betrayal: Z=-3.77, *p*<.001).

10.3.4 Household Aggression and Anger Index

The 'Household Aggression Index' is a subscale of The Aggression and Anger Assessment (3A; Taylor, 1999). Responses to each of the following three forced choice items were coded separately as 'yes' or 'no':

1. "Do/Did your parents ever get angry?"
2. "Do/Did they ever fight with each other?"
3. "Do/Did they fight with anybody else?"

The "Index score" is the sum of the three responses where yes=1 and no=0 giving a score on a 4 point scale. Where participants were brought up by people other than their parents (e.g. grandparents, aunts and uncles), the questions were adapted to address the behaviour of their primary care giver. In cases where participants had been brought up solely by one primary caregiver and were without memory of another parent or guardian, participants were asked to indicate whether their primary caregiver was in or had ever been in a long-term relationship. If so, Question Two was adapted to fit the participant's personal situation (e.g. "Does your mother ever fight with her partner?" or "Did your uncle ever fight with your aunt when she was alive?")

For two participants with IDs, and one participant without IDs, it was not possible to identify an appropriate partner for their primary caregiver and they were thus unable to answer Question Two. As the index is based on only three questions, it was not possible to include these three participants in the analysis of parental aggression. A further two participants with IDs, and one participant without IDs, indicated that they were not comfortable discussing their parents' anger and aggression. Although the researcher explained the procedure in more detail and invited questions, all three participants remained reticent about completing the index. It was therefore decided that they ought not to complete the index. Consequently, 41 individuals with IDs (15 with problems of aggression and 26 with no known problems) and 46 individuals without IDs (14 with problems of aggression 32 with no known problems) were included in the analysis.

10.3.4.1 Group Comparisons of Household Anger and Aggression

Levels of household anger and aggression were compared between 1) ID and ND groups, 2) participants with IDs with and without problems of aggression, and 3) participants without IDs with and without problems of aggression.

It was predicted that aggressive individuals would have encountered a greater level of anger and aggression at home. Mann-Whitney tests did not reveal significant differences between the aggressive and non-aggressive participants with IDs (U=182.000 p=0.711). Similarly, the aggressive and non-aggressive participants without IDs were not found to differ in their reports of household anger and aggression (U=173.000, p=0.195). However, the participants with IDs reported significantly less household anger and aggression than the participants without IDs (U=695.000, p=0.027). Gender differences in reported household aggression were not found for the ID and ND groups (U=137.5, p=0.424; U=211.5, p=0.231 respectively) or for the non-aggressive participants with and without IDs (U=43.5, p=0.075; U=75.5, p=0.246 respectively).

10.3.4.2 Family Aggression Score and Recency of Parental Conflict

To examine the validity of the Household Anger and Aggression index, correlation between the scores and how recently participants' reported having experienced conflict with parents (as recorded in Scenario rating task) was examined. Across all participants, the two measures appear to be negatively correlated (Spearman's Rho= -.305, *p*=.006). A similar correlation was found between family aggression and recency of family conflict for the ND group while no apparent correlation was found for participants with IDs (Spearman's Rho=-.307, *p*=.061; Spearman's Rho=-.113, *p*=.480).

10.4 Study 2. Provocative Scenario Ranking, Experiences of Conflict and Parental Aggression
DISCUSSION

10.4.1 Interpretive Summary

10.4.1.1 Aggressive and Non-Aggressive Participants

As predicted, aggressive participants with IDs reported experiencing conflict more recently than non-aggressive participants. In respect to the specific categories of conflict, they also encountered physical aggression more recently, perhaps indicating that such encounters are more commonplace for this group. This interpretation would be broadly in line with trends identified in Study 1 where aggressive participants appeared to have encountered more incidents of aggression. However, contrary to expectations, aggressive participants did not report more recent experiences of parental conflict. This fails to give additional support to other trends observed in Study 1 where only the aggressive participants reported conflict at home with family. These findings were replicated for the aggressive individuals without IDs who also reported encountering verbal aggression more recently than their non-aggressive peers.

The results did not suggest that young people with IDs and problems of aggression ranked the provocativeness of specific types of social conflict differently from their non-aggressive peers. It may be that these groups do not differ in the types of scenario that they find most provocative. For three of the four conflict scenarios, this was mirrored in the results for the participants without IDs, with no significant group differences in ranked provocativeness being obtained. However, aggressive participants without IDs found being let down by a friend less provocative than the non-aggressive participants.

Interestingly, the non-aggressive participants experienced parental conflict more recently than the other categories of conflict while ranking it as the least provocative of the scenarios. Similarly, the aggressive group found parental conflict the least provocative scene and tended to have experienced it more recently than the other scenes. These findings might indicate that disagreement with parents might be a relatively common form

of conflict for young people with IDs while incidents of aggression might be relatively rare. However, as participants could only comment on the five pre-designated categories of conflict included in the task, there may well be other common forms of conflict for this group that were not identified in the study. The non-aggressive participants also experienced physical and verbal aggression less recently than other categories of conflict.

10.4.1.2 Participants with and without IDs

Comparisons between participants with and without IDs revealed some interesting findings. Surprisingly, the participants without IDs had encountered conflict more recently than the participants with IDs, suggesting that conflict might be more common for non-disabled participants. This was found to be the case across all five categories of conflict and for parental conflict specifically. This contradicts previous findings that many forms of social conflict are a particularly common experience for people with IDs (Jahoda & Markova, 2004; Levy & Packman, 2004; Sobsey, 1994). It may be that while adults with IDs do encounter more conflict than non-disabled peers, this is not the case for people in the transition to adulthood. Young people with or without IDs that are still involved in secondary or further education may well be exposed to relatively similar levels of conflict within their day-to-day environment.

That young adults with IDs appeared to be in conflict with their parents less often than their non-disabled peers may reflect differences in the extent to which late adolescence truly is a transitional phase towards adulthood and independence. Late adolescence is typically a stage where the individual starts to expect and pursue greater autonomy (Spear & Kulbock, 2004). This could easily contribute to a period of heightened conflict at home with adolescents challenging the longstanding authority of their parents. However, with relatively limited scope for developing independence, many young people with IDs may be less likely to test the boundaries that their parents set out for them (Caton & Kagan, 2007). It is possible that this might explain the differences between the two groups.

While these unexpected results appear to indicate that people without IDs encounter conflict more frequently than those with IDs, they could equally be an artifact of challenges associated with interviewing participants with IDs. There is evidence that participants who have IDs can be more prone to giving socially desirable answers (Finlay & Lyons 2002). Some participants with IDs may have felt compelled to indicate that they

had encountered difficult experiences less often than they really had. This could well have been exacerbated by the fact that the participants with IDs can also have difficulties judging lengths of time (Finlay & Lyons 2002). As such, any differences in the recency of experiences reported by participants with and without ID should be interpreted with some caution.

As observed in the aggressive and non-aggressive sub-groups, participants with and without IDs both encountered conflict with parents more recently and appeared to rate parental chastisement as less provocative than the other four forms of conflict. It is interesting that parental conflict was both the least provocative and the most recently experienced form of conflict. High recency may indicate that conflict with parents is relatively commonplace and it may be that repeated experiences reduce the provocativeness of conflict with parents. It is also plausible that perceived hostility from someone close to an individual might provoke less anger than if it were from someone they knew less well. Equally, it could be that the type of conflict encountered with parents is typically of an intrinsically less noxious nature.

10.4.1.3 Gender Comparisons

Significant differences were not found in the recency or provocation rankings of males and females in the participants with IDs. However, males without IDs found verbal aggression less provocative and encountered verbal aggression less recently than females without IDs. This may indicate that young males encounter less verbal aggression than young females. This would be surprising in that males are generally found to be more verbally aggressive than females across the lifespan and peer aggression most commonly occurs between members of the same sex (Archer, 2004; Cairns & Cairns, 1994; Bjorkqvist and Niemela, 1992; Burbank, 1987). With males enacting more verbal aggression and with most of this being directed at other males, one might expect that it would be the male participants who would have encountered verbal aggression more recently. Conceivably, it may be that because male participants found verbal aggression to be less provocative, they were less likely to remember incidents of verbal aggression. In which case, when participants were asked when they last encountered verbal aggression, female participants may have been better able to remember the most recent incidents than the males. Such an interpretation is purely speculative at this juncture. Nonetheless, this remains a somewhat surprising finding that may deserve further investigation.

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10.4.1.4 Household Aggression

In regards to household aggression, no differences were found between aggressive and non-aggressive participants or between males and females in any of the groups. The one significant difference was that participants with IDs reported less household anger and aggression than the ND group. This is in line with the finding that participants with IDs encountered parental conflict less recently than participants without IDs. This would perhaps be surprising in that parents of people with IDs have been found to encounter more stress than other parents and are thought to commonly report heightened emotions such as frustration, sorrow and anger (Rodrigue et al, 1990; Dyson, 1997; Roach et al, 1999; Landsman, 1998; Kearney, 2001). Arguably, these findings might suggest that parents of children with IDs do not necessarily allow the additional challenges that they face to result in conflict or aggression.

However, as with the surprising findings of the recency task, it should be conceded that participants with IDs may have been less willing to talk frankly about their experiences of household aggression. Participants with IDs in the present study might have felt more concerned about painting their parents in a negative light by labelling them as "angry". Therefore, it is feasible that household aggression might have been under-reported in this group, explaining the significant group difference.

A further cause for caution when interpreting these findings is that the Household Aggression index comprised only three forced-choice questions. Moreover, it is thought that forced-choice style questions are particularly likely to elicit socially desirable responses from participants (Booth and Booth, 1994). In short, although findings indicate that young adults with IDs have encountered less parental aggression, this finding will have to be replicated in future studies with a more thorough measure.

10.4.2 Limitations of the Study

Perhaps the most notable shortcoming of the present study was the relatively low number of aggressive participants in both the ID and ND groups. As this issue pertains to studies 2, 3 and 4, the circumstances surrounding this difference are discussed in depth in the

General Discussion (p.241). What should be considered at this juncture is that while a larger sample may have allowed for the clarification of non-significant trends observed between aggressive and non-aggressive groups, the sample was evidently adequately powered to uncover several statistically significant group differences.

There were significant differences between the proportions of males and females in the groups that could have influenced some of the findings. Additionally, differences in the mean ages between AGG and NAGG subgroups with IDs and in IQ between the subgroups without IDs could also have been confounds. Again, these issues will be discussed in greater depth in the General Discussion.

While 24 of the 39 of the ND participants were recruited from youth groups, the large majority of the ID group were recruited from Further Education Colleges. It might be that differences in the roles of staff at different types of establishment could mean that some staff were privy to more information about the behaviour of the young people in their care. Consequently, it could be that staff at some recruitment sites were better placed to respond to the CCB questions than others. It should be conceded that, to some extent, this draws into question the comparability of allocation to AGG and NAGG subgroups between the ID and ND groups.

One final limitation of the study was that participants were only able to rate the provocativeness of five scenarios and indicate when they last experienced five corresponding 'types' of conflict. Categories of conflict rooted in participants' own experiences may have given more nuanced qualitative information about which features of conflict are most common or are most provocative to the groups. That said, all five vignettes were designed to incorporate the most common features of conflict for young adult participants with IDs in the Study 1 and should thus represent meaningful types of conflict in the lives of people with IDs at this developmental stage.

10.4.3 Implications of Findings and Future Research

In future research, it may be useful to ask participants to give scores of how provocative each scenario is as well as ranking them relative to each other. In doing so, it would be

possible to examine whether aggressive participants find certain forms of conflict more provocative than people without problems of aggression.

Given that the five provocative scenarios have been developed to represent salient features of conflict for young adults with IDs, the provocativeness rating task could be adapted to perform a number of functions in a clinical setting. For example, it could be used in initial sessions with young adults with problems of aggression as a 'menu' of example scenarios to help patients identify the most salient conflict experiences in their own lives.

10.4.4 Conclusion

Essentially, aggressive participants did not differ from non-aggressive individuals in the types of situations that they found the most provocative. However, as might be anticipated, they did encounter conflict, particularly aggression more recently than others. In general, conflict with parents appeared to be the most recent and least provocative experience for participants while incidents of aggression were less recent but more provocative. One striking finding was that participants with IDs reported less parental aggression and experienced parental conflict less recently than participants without IDs. However, given that the Family Aggression Index is a relatively rudimentary measure, further research would be required before any inferences could be drawn on this matter.

Chapter 11 Study 3: Identifying Emotion from Human Movement

11.1 Study 3. Identifying Emotion from Human Movement INTRODUCTION

Studies 1 and 2 sought to identify experiences of young people with IDs that might provoke aggression. From the viewpoint of the SIP model, these features of interpersonal conflict can be seen as common triggers of the cognitive processing styles that lead to aggression. The first of these 'aggressive' processing tendencies are associated with the Encoding and Interpretation stages of the SIP model (see p.18 for schematic diagram). During these stages, the individual identifies and encodes the salient cues present in a social event, ascribes meaning to them and develops an overall interpretation of what has happened.

Existing research with adults with IDs has focused on how several possible biases and deficits at these stages might make people more likely to behave aggressively. Firstly, it has been posited that aggressive individuals may have particular difficulties understanding the emotions of others. Several studies have shown that people with IDs have deficits in emotional understanding relative to their non-disabled peers (e.g. McAlpine et al, 1992; Zaja & Rojahn, 2008). Rojahn et al (1995) argued that these deficits might lead to difficulties with social interactions that could, in turn, increase the likelihood of aggressive behaviour.

Several studies have tested this hypothesis using emotion recognition tasks. In most cases, participants were asked to identify the emotion conveyed by de-contextualised pictures of faces with different expressions (Matheson & Jahoda, 2006; Walz & Benson, 2005; Jahoda et al, 2006a; Woodcock & Rose, 2007). Interestingly, the only evidence that aggressive individuals do have deficits in emotion recognition comes from a task using contextually rich stimuli (Matheson & Jahoda, 2005). The stimuli depicted individuals expressing emotions in contexts associated with those specific emotions (e.g. happiness at a wedding,

sadness at a funeral). It can be surmised that people with IDs and problems of aggression might have deficits in emotional understanding but that such deficits do not appear to apply to the recognising facial expression.

In addition to possible deficits in emotion recognition, there is evidence that frequently aggressive adults with IDs demonstrate characteristic response tendencies. For example, aggressive people may be more likely to label facial expressions as being angry (Matheson & Jahoda, 2005; Walz & Benson, 2005). Evidence also points to similar biases towards negative cues in other processes of encoding and interpreting social information. In particular, aggressive people appear to be more likely to attribute hostile intent to others' behaviour in social situations (Jahoda et al, 2006; Pert et al, 1999; Basquill et al, 2004).

In these studies of intent attribution, participants were shown vignettes depicting benign, ambiguous and hostile social interactions. They were then asked to indicate whether the protagonist's behaviour was hostile. Interestingly, the aggressive group in two of the studies only attributed more hostility than the control group when they were asked to imagine that the character's behaviour was directed at them. This supports a suggestion made by Jahoda et al (2001) that biases, or heightened sensitivities, to negative cues might be seen as a form of self-defence mechanism. Frequently aggressive individuals may see hostile behaviour as more of a threat to their self-image and thus may become more attuned to such threats.

The evidence of biases towards identifying cues as 'hostile' or 'angry' is perhaps somewhat stronger than the evidence of deficits in emotional understanding. However, while two studies found that aggressive individuals identified more anger than non-aggressive participants, two other studies with aggressive participants failed to find such differences (Jahoda et al, 2006a). It appears that while findings suggest that hostile attribution styles may contribute to aggression in this group, the roles of any biases or deficits in emotion recognition remain unclear. With a view to clarifying these roles, the present study takes a fresh, but intuitively meaningful, methodological approach to examining emotion recognition in aggressive adults with IDs.

11.1.1 Dynamic Social Cues

To date, research into the earliest stages of SIP has focused on how aggressive people with IDs perceive static pictorial stimuli depicting ambiguous or clearly provocative cues. However, it is widely accepted that in actual social interactions, much social meaning is communicated via dynamic cues such as body movements (Clarke et al, 2005; Pollick et al, 2003). In the context of exploring how social cues in potentially provocative interactions are encoded, this could mean that salient information that would be available in real-life situations is lost when static stimuli are employed. In spite of this, the author is not aware of any studies that have examined how encoding dynamic social cues might influence aggression. For this reason, the present study further tested the postulation that aggressive people display a heightened sensitivity to 'angry' or 'hostile' cues by examining whether they identified more anger from dynamic social cues than non-aggressive peers. It also explored whether aggressive individuals demonstrate overall deficits in emotion recognition relative to their non-aggressive peers.
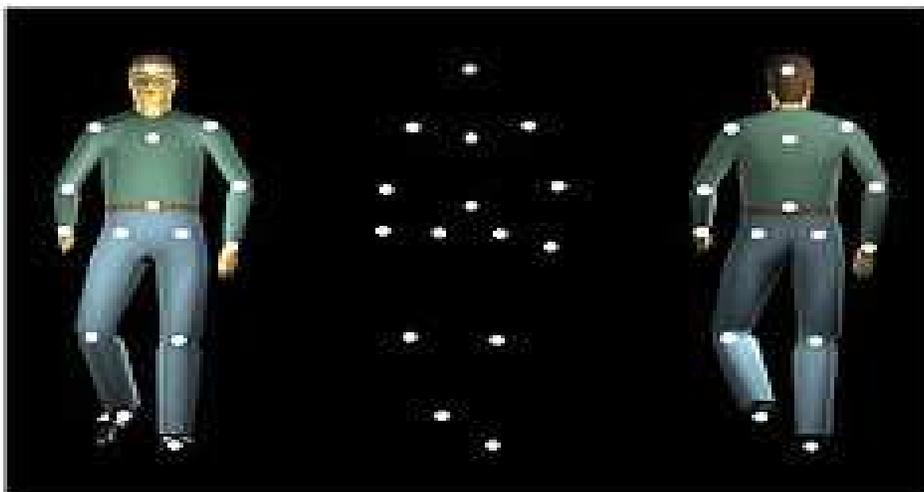
Figure11.1. Static example of point light display of a human. (Brooks et al, 2008)

To measure participants' ability to recognise emotions expressed in human actions, the study employed specialised stimuli called point-light-displays (PLDs). PLDs are brief movie clips of what appear to be moving dots. The movement of these dots is based on the electronically recorded motion of lights attached to points of an actor's body (see Figure 11.1 above). The displays are thus used to isolate the dynamic social cues particular to body motion from other visual cues present in video clips such as facial expression,

clothing or surroundings. The particular displays used in this study were of people walking. The actors in the displays had been asked to convey anger, sadness, happiness or no particular emotion through their walking gait.

Several studies have successfully used PLDs with people with IDs (e.g. Moore et al, 1995; Sparrow et al, 1999). Indeed, one study found that people with IDs performed as well as people without IDs at identifying attitudes and actions from PLDs (Moore et al, 1995). However, to the knowledge of the research team, the present study was the first to use dynamic stimuli to investigate differences in SIP between aggressive and non-aggressive people with IDs. It was also the first to examine emotion recognition in aggressive people with IDs that are in transition from adolescence to adulthood.

11.2 Study 3. Emotion Recognition from Dynamic Cues
METHODS

11.2.1 Aims

Study 3 sought to examine whether the manner in which young people with IDs interpret dynamic social cues are associated with frequent aggressive behaviour. Specifically, the study examined ability to identify emotion conveyed through walking gait. Findings indicate that individuals with problems of aggression may be poorer at identifying emotion from static stimuli (Matheson & Jahoda, 2005). It might then be argued that individuals with frequent aggression could also be poorer at identifying emotion from dynamic cues.

Other findings suggest that aggressive people are more likely to label facial expressions as angry (Matheson & Jahoda, 2005; Walz & Benson, 2005). Similarly, it appears that aggressive individuals are more likely to infer hostile intent from others' actions and may even be more accurate at identifying hostility (Basquill et al, 2004; Jahoda et al, 2006b). Given these findings, one might expect aggressive individuals to be more likely to perceive anger from someone's gait.

On the basis of these existing findings, the following hypotheses were offered:

1) Young adults with IDs and frequent aggression will be less accurate, than non-aggressive peers, at correctly identifying emotion from dynamic cues.

2) Young adults with IDs and frequent aggression will identify more anger across all movies than their non-aggressive peers.

3) Young adults without IDs with frequent aggression will be less accurate, than non-aggressive peers, at correctly identifying emotion from dynamic cues.

4) Young adults without IDs with frequent aggression will identify more anger across all movies than their non-aggressive peers.

There is also evidence that people with IDs have difficulties with recognising emotion relative to people without IDs (e.g. Owen et al, 2001; Kasari et al, 2001). Therefore, the present study also makes the following prediction:

5) Young adults with IDs will be less accurate, than non-disabled peers, at correctly identifying emotion from dynamic cues.

11.2.2 Ethical Approval

Ethical approval was given by the University of Glasgow Faculty of Medicine Research Ethics Committee (Ref: FM01209). The approved proposal encompassed Studies 2, 3 and 4. All data for these studies were collected over two sessions using the same participants. However, given the clear distinctions between the research aims of different aspects of the project, it was considered appropriate to present the research as three separate studies.

11.2.3 Design

A cross-sectional design was employed to compare the responses of groups of young adults with and without problems of aggression. To examine the extent to which findings were specific to people with IDs, analogous comparisons were conducted for people young people without IDs. To test hypotheses of possible deficits in emotion recognition for people with IDs, comparisons will also be conducted between participants with and without IDs.

11.2.4 Power Calculation

Sample size was calculated on the basis of previous research with methodological parallels to Studies 3 and 4. A study using Point Light Displays with people with IDs, people with autism spectrum disorders and people without IDs uncovered significant group differences with samples of 17 participants (Moore et al, 1997). One previous study of outcome expectancy in people with IDs has uncovered significant differences between aggressive and non-aggressive groups with sample sizes of 18 (Kirk et al, 2008). Thus, it was

estimated that a sample of 24 participants per group would be suitable for the present study. This calculation, made using the PS power and sample size calculator, is based on a 0.05 significance level and a power of 0.8.

11.2.5 Inclusion and Exclusion Criteria

11.2.5.1 Inclusion Criteria

The following criteria were required for inclusion in the designated groups:

1. **All Participants**: Aged 16-20 years old.
2. **ID Group**: Identified by staff as having a mild to moderate intellectually disability (presence of an ID was later verified by completion of a WASI).
3. **Aggressive Group**: Staff-reported history of recent and frequent aggressive behaviour (six or more significant acts of physical or verbal aggression in preceding six months).

To minimize potential socio-economic differences, efforts were made to recruit participants of both groups from largely the same areas of central Scotland. Staff at Additional Supports Needs colleges verified that potential participants had sufficient receptive and expressive language skills to engage in the interview.

11.2.5.2 Exclusion Criteria

Individuals identified as, or suspected of, having Autism Spectrum Disorders were excluded due to the qualitative impairments in social interaction and communication and understanding associated with this disorder (DSM-IV-TR, 2000).

11.2.6 Recruitment

All data for Studies 2, 3 and 4 were collected over two sessions with the same participants. As such, the recruitment procedure for Study 3 was identical to that outlined in the Methods Section for Study 2 (see p.129).

11.2.7 Justification of Methods

11.2.7.1 Dynamic Cues

As outlined previously, research suggests that the way frequently aggressive individuals encode and interpret social cues could partly underpin their aggressive behaviour. Firstly, it appears that people with problems of aggression may be more likely to have difficulties identifying emotions (Woodcock & Rose, 2007; Matheson & Jahoda, 2005). Difficulties understanding the feelings of others could increase the likelihood of misinterpreting social situations. This in turn may contribute to less adaptive responses such as aggression. Indeed, evidence indicates that aggressive individuals may be more likely to attribute hostile intent to others (Basquill et al, 2004; Jahoda et al, 2006b). However, while some studies have found significant differences between aggressive and non-aggressive individuals in both emotion recognition and intent attribution, others have found no such differences (Jahoda et al, 2006a; Waltz & Benson, 1996; Fuchs & Benson, 1995). Therefore, although there may well be important differences in SIP between people with and without aggression problems, the existing findings in these two areas are far from unanimous. Further research is required to verify and clarify the relationships between encoding of social cues and aggression in this group.

To date, studies exploring whether frequently aggressive people with IDs perceive emotional cues differently from non-aggressive people have employed a variety of static stimuli. These stimuli have generally been images of faces conveying different emotions. However, the clearest existing evidence of group differences in emotion recognition was uncovered using context rich static cues (Matheson & Jahoda, 2005). This demonstrates that the relationship between aggressiveness and emotion recognition may be contingent upon the type of cues available.

Interestingly, it is widely accepted that dynamic cues such as body movements, gestures and dynamic facial expressions communicate considerable social meaning that could be vital when interpreting the states or intentions of others (Clarke et al, 2005; Pollick et al, 2003). However, no study has looked at possible differences in emotion recognition from dynamic cues between aggressive and non-aggressive individuals.

11.2.7.2 Point-Light Displays

There may be many ways by which the encoding and interpretation of social cues contribute to aggression. However, at this point, there is only evidence that hostile intent and emotion recognition may contribute to aggressiveness in people with IDs. Consequently, it was decided that dynamic stimuli valenced in terms of either conveyed emotion or hostile intent would be used.

The researcher initially considered using clips of regular film as stimuli. One advantage of using regular film clips of social interactions is that they offer a relatively ecologically valid representation of the array of social information encountered in real-life situations. For example, participants would be exposed to dynamic and non-dynamic cues from facial expressions, gait and body language as well as environmental cues such as the location of the scene. However, this very contextual richness could also be seen as presenting a problem in research. With such a wide array of cues in the stimuli, it would be difficult to say what cues were the source of any group differences that were found. For this reason, it was decided that specialised stimuli called point-light displays (PLDs) would be used rather than clips of regular film.

PLDs are brief film clips of what appear to be moving dots. The movement of these dots is based on the electronically recorded motion of sensors attached to points of an actor's body. The displays show motion in a way that is wholly out of the original context and thereby offer a means by which to examine sensitivity to the cues present in human motion while eliminating many of the other cues present during a real interpersonal event.

11.2.8 Development and Piloting of PLD Task

11.2.8.1 Obtaining Stimuli

Stimuli were provided by a research team led by Professor Frank Pollick at the Psychology Department of The University of Glasgow. Prof. Pollick's team have the specialised equipment and expertise to produce PLDs and granted access to two large sets of displays from their library. The first set was of three second long displays of an arm (5 point-lights)

throwing in an angry, sad, happy or neutral manner. The second set were 28 second long clips of full bodies (15 point-lights) walking back and forwards across the screen. The throwing displays only show the arm rather than the full body. Consequently, it was thought that the movement being depicted was of an overly specific type of action. The full-body displays, showing the gait of someone walking, intuitively seemed like a more meaningful and communicative form of body movement that was more relevant to aggression than the clips of arm movements. Also, given that the displays were longer, participants would be a) less likely to miss the clip completely but also b) participants attending more closely to the clips would be given more information to base their decision about which emotion was being conveyed. For these reasons, it was decided that the task would be developed using the walking displays rather than the throwing displays.

11.2.8.2 Identifying Stimuli

In total, there were 240 displays of people walking in a neutral, happy, sad or angry manner. There were 60 movies for each state, all recorded with the same 30 actors. Each actor produced two clips for each state.

It became apparent that a task using 240 displays would be far too time consuming for participants and that some films conveyed the intended emotion more clearly than others. Indeed, a previous study that looked at emotion recognition from PLDs by people with IDs used merely one movie per valence (Moore et al, 1997). With these points in mind, it was decided that five or six movies for each emotion should be identified that seemed to communicate the intended emotion effectively.

Due to the fact that there was no existing normative data about how readily the emotions in the displays are recognised, the clips were piloted. It was decided that piloting all 240 movies would have been unrealistically time consuming for the pilot participants. For that reason, the initial stage of clip selection involved the researcher viewing all clips and rating how clearly they convey the designated emotional state on a five-point likert scale. The eight movies of each emotion with the highest score were then used to produce a provisional version of the task for piloting.

11.2.8.3 Format of The Task

The key operational criteria for the format of the task were that: 1) The task was accessible to young adults with IDs 2) The task could be operated by the researcher and 3) in order to reduce the travel demands on participants, the task was portable and could be delivered via laptop computer.

Colleagues with experience working with PLDs suggested the computer program Matlab as a suitable format for the task. In addition to providing a professional format for delivering the task, the Matlab program is able to record participant responses electronically via button presses. However, it was noted that some people with IDs may find it easier to respond verbally or by pointing than by pressing buttons on a keyboard. Therefore, it was decided that it might be more advantageous to use a simpler system to deliver the task. A trial array was assembled by inserting the 32 provisional movies into separate slides on a Keynote document (the Apple Macintosh equivalent to Powerpoint). By activating the "Slideshow" function, it was possible to view the movies one by one in full-screen mode. Furthermore, it was found that the clips ran smoothly in this format and that the researcher retained sufficient control over the progression of slides in the array. After discussing the matter with Prof. Pollick's team, it was decided that Keynote met the operational requirements of the task and that the task would be used in the study. Counterbalancing the presentation order of the movies was achieved by producing multiple arrays with the slide presentation order varied in accordance to a Latin Square matrix.

11.2.8.4 Piloting

INITIAL PILOT

As outlined above, thirty-two of the 240 available movies were provisionally selected for piloting, including eight movies of each emotional state. Six typically developing adults and one young person with IDs completed an initial pilot task using all 32 movies. The six displays of each emotional state that were correctly classified most frequently were included in the final array of 24 displays. The overall accuracy scores of the inititial pilot participants for each set of selected displays were: 'Angry' displays=92.8%, 'Sad' displays= 83.3% 'Happy' displays=88.1, 'Neutral' displays=76.2.

PILOT OF FINAL TASK

The final task was piloted on a further two young people with IDs and four typically developing young adults. Pilot participants generally reported that they found the process enjoyable. They did not report finding the experiment particularly fatiguing though some mentioned that they found the task more difficult than they had expected. The participants' accuracy scores for each set of selected displays were: 'Angry' displays=61.1%, 'Sad' displays= 66.7% 'Happy' displays=52.7, 'Neutral' displays=75.

DIFFICULTIES

One concern regarding the displays was that as the most readily identifiable movies were selected, participants might find the task too easy. This could have resulted in significant group differences being overlooked because of a ceiling effect in responses. However, all pilot participants identified at least five displays incorrectly suggesting that this would not be a problem. Furthermore, as illustrated above, accuracy scores for the final pilot task were between 52.7% and 75%, suggesting that none of the four sets of clips were too easy, or too difficult, for participants.

11.298 Measures

11.2.9.1 Emotion Recognition task ('Emotional Walker' Task; E-WALK)

The emotion recognition task, or 'E-WALK', was developed specifically for this study, as outlined in the preceding section. The task has been designed to measure ability to identify emotional states conveyed via walking gait. The task includes 24 point-light displays of an actor walking in an angry, sad, happy or neutral emotional state. As the measure was developed by the researcher, there is currently no psychometric data regarding the reliability or validity of this task. However, as discussed in the previous section, the final task has been successfully piloted with young adults with and without IDs.

11.2.9.2 Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999)

The two subscale version of the WASI provides an estimate of general intellectual ability by testing the participants' vocabulary and matrix reasoning skills. The WASI is an abbreviated version of the Wechsler Adult Intelligence Scale – III (WAIS -III; Wechsler, 1997). The WASI can be completed in a relatively brief period of time and has acceptable Correlation scores with the WAIS -III at 0.87 for Vocabulary, 0.66 for Matrix Reasoning and 0.87 overall (Wechsler, 1999).

11.2.9.3 Checklist of Challenging Behaviour (CCB; Harris, 1993)

The aggression subscale of the CCB was completed with staff members with six or more months experience of working with the particular participant they reported on. CCB scores were used to assign each participant to the aggressive or non-aggressive subgroup. Participants were assigned to the appropriate aggressive subgroup if they were reported to have enacted six or more acts of verbal or physical aggression in the preceding six months. This measure was developed specifically for use with staff working with people with IDs.

11.2.10 Procedure

All measures used in Studies 2, 3 and 4 were completed with the same participants over two sessions (see Table 11.1 below). Both the E-WALK and the WASI were completed in the second of these sessions. All measures completed in the first session and two additional measures completed in the second session were part of Studies 2 and 3 and will not be discussed in this section. All sessions took place on a secure and private location at the recruitment site.

Table 11.1
Schematic of Procedure of Studies 2, 3 & 4 (measures used in Study 3 are highlighted in bold).

Participants	Session	Study	Measure	Duration	Function
Test and Control Groups (A-ID, NA-ID, A-ND, NA-ND):	SESSION ONE	STUDY 4	Belief about Response to Threat Task (BARTT)	40-60 minutes (approx)	Explores participants' expected outcomes of aggressive and submissive behaviour
		STUDY 3			
	SESSION TWO		**Emotion Recognition Task (E-WALK)**	**30 mins (approx)**	**Measures accuracy and of emotion recognition from human motion.**
		STUDY 2	Scenario Rating Task	10-15 minutes (approx)	Records how recently participants experienced different forms of social conflict and how provocative they find them.
		STUDY 2	Family Aggression Interview	10 minutes (approx)	Levels of anger and aggression in household.
		STUDIES 2, 3 & 4	**Wechsler Abbreviated Scale of Intelligence (WASI; 2-subscale vers.)**	**15 minutes (approx)**	**Indicator of intelligence (Vocabulary, Matrix Reasoning)**
Teacher/Lecturers:		**STUDIES 2, 3 & 4**	**Checklist of Challenging Behaviour**	**5 minutes (approx)**	**Indicator of Ps' recent aggressive behaviour.**

11.2.10.1 Training Task

Session Two began with a brief training task for the emotion recognition task based on the training task used in previous research using PLDs with people with IDs (Moore et al, 1997). This was to ensure that participants could recognize the figure of a person in the PLDs and understood the task (see Appendix I for training task protocol).

Participants were shown one display of a person knocking on a door and asked to describe what they saw. In this first training display, the points on the display were connected with lines to make the shape of the actor easier to discern. All participants reported seeing a person moving their arm in some way. A second training display was shown depicting a person walking "angrily". Participants were asked to describe what they had seen. This display was in the format of the test displays with no lines connecting the points of the figure. Where participants failed to mention seeing a "person" and that the person was "walking", they were given prompts such as "What do you think the dots are attached to?" or "What is the person doing?" All participants demonstrated that they could see a figure walking in the display.

Participants were then advised that their task would be to decide if the person in the displays was "happy", "sad", "angry" or not conveying any particular emotion. They were told that they could give their answer by saying their answer out loud or by pointing at one of four cards depicting the response options. The four cards showed cartoon faces

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representing the given emotional state with the emotion printed in large letters at the bottom. Participants were then shown the angry display again and asked what the emotional state of the person was. This was repeated with three further training displays of the other three emotional states. All participants demonstrated that they understood the procedure and were able to proceed to the main task.

11.2.10.2 Main Task

Participants were shown 24 displays of a person walking. As in the training task, the actor in each display conveyed anger, happiness, sadness or no particular emotion (neutral). Six clips of each emotion were used and their order was counterbalanced between participants using a Latin Square. Immediately after each clip was presented, participants were asked to indicate whether they thought the person in the clip was happy, sad, angry or not showing any emotion by answering verbally or pointing to the appropriate card. Responses were collected manually by the experimenter on a response sheet. Following completion of this task, the WASI was administered.

Finally, staff members that had known participants for at least six months completed the aggression section of the Checklist of Challenging Behaviour with the researcher. This was either completed in person or via telephone interview.

11.2.11 Analysis Strategy

The data collected in this study was ordinal in nature. It was therefore decided that Mann-Whitney U Tests would be conducted to compare the overall accuracy of a) ID and ND participants and b) between aggressive and non-aggressive subgroups. Similar comparisons would then be conducted between groups for accuracy at identifying each of the four emotional states. In order to examine hypothesised response biases in the aggressive sub-groups, additional group comparisons would be made in respect to the distribution of groups' incorrect answers. To the same end, comparisons would be conducted between groups in respect to their overall response tendency (i.e. whether certain groups are more or less likely to give specific answers, whether correct or incorrect).

As this study was exploratory in nature, it was considered particularly important to ensure that it was sensitive to potential group differences. To reduce the risk that significant findings would go undetected, it was decided that formal corrections for family-wise error would not be conducted for all comparisons. However, where relevant, the significance of findings after Bonferroni corrections are applied will also be reported.

11.3 Study 3. Emotion Recognition from Dynamic Cues RESULTS

11.3.1 Introduction

This chapter presents the findings of Study 3 which examined the manner in which participants identify emotion from dynamic stimuli depicting walking motion. As outlined in the previous section, the study sought to address five specific hypotheses:

1) Young adults with IDs and frequent aggression will be less accurate, than non-aggressive peers, at correctly identifying emotion from dynamic social cues.

2) Young adults without IDs with frequent aggression will be less accurate, than non-aggressive peers, at correctly identifying emotion from dynamic cues.

3) Young adults with IDs and frequent aggression will identify more anger across 'sad', 'happy', 'angry' and 'neutral' conditions than their non-aggressive peers.

4) Young adults without IDs with frequent aggression will identify more anger across 'sad', 'happy', 'angry' and 'neutral' conditions than their non-aggressive peers.

5) Young adults with IDs will be less accurate, than non-disabled peers, at correctly identifying emotion from dynamic cues.

To these ends, young adults, with and without IDs, completed an emotion recognition task. Participants were presented with point-light displays of people walking and asked to identify the emotion conveyed by the actor in each display (see p.175 for details of the task

and the stimuli). In order to address the first two hypotheses, participants in each group were allocated to aggressive and non-aggressive subgroups on the basis of interviews with staff (see p.176).

The first two hypotheses, that participants with problems of aggression would be less accurate, was tested by comparing the overall accuracy of aggressive and non-aggressive groups as well as their accuracy for each condition (e.g. 'angry' or 'sad' displays). Examining accuracy gives an insight into whether one group is better at identifying emotions from dynamic cues. Similarly, the final hypothesis, that participants with IDs would be less accurate than their non-disabled peers, was tested by comparing the accuracy of the participants with and without IDs.

The third and fourth hypotheses predicted that participants with problems of aggression would identify more anger from dynamic stimuli. This was tested by comparing the overall number of responses and the number of errors by the groups. Whereas accuracy can be seen as a measure of how well someone to recognise emotions, examining the overall numbers of responses gives an indication of whether groups display different response tendencies.

11.3.2 Participants

Ninety-three young adults were included in Studies 2 and 3. Forty-five young people with IDs were recruited, including 15 individuals with frequent aggression and 30 individuals with no reported problems of aggression. Forty-eight young people without IDs were also recruited, including 16 individuals with problems of aggression and 32 individuals with no reported problems of aggression. All participants were aged between sixteen and twenty years and were planning to leave full-time education by the end of the following academic year.

This sample comprised the same participants as those included in Study 2 as well as nine additional participants without IDs. These additional participants were unable to complete the Scenario Rating task used in Study 2 because the task was still being piloting at that stage.

Although the majority of the sample for Studies 3 and 4 also completed Study 2, with nine extra participants, it is appropriate to readdress the socio-demographic details of the groups.

11.3.2.1 Recruitment Sites

The details of the sites from which participants were recruited are outlined below in Table 11.2:

Table 11.2

Studies 3 & 4: Recruitment Sites

	ID Group	ND Group
Further Education College		
-Mainstream College Departments (2)	0	20
-Additional Support Needs (ASN) Department (2)	35	0
Secondary Education		
-Additional Learning Needs (ALN) School (2)	8	0
University Department (1)	0	2
Youth Groups/Clubs (5)	2	26
TOTAL	45	48

During the recruitment stage of Study 1, it became apparent that very few young people with IDs remained in mainstream education after the age of 16 years. For this reason, it was necessary to recruit the majority of the participants with IDs for the present study from Secondary Schools and College departments that offer specialist education to people with IDs.

11.3.2.2. Participants' Demographic Characteristics

ID & ND GROUPS

The socio-demographic details of the groups and subgroups are displayed in Table 11.3 below:

Table 11.3

Studies 3. & 4. ID and ND Group Details

Group	ID	ND
N	45	48
Age	Mean= 18 (SD= 1.41)	Mean= 17.9 (SD= 1.42)
	Median= 18	Median= 18
	Range= 16-20	Range= 16-20
		Mann-Whitney U= 1026, *p*=.671
Carstairs Social Deprivation Score	Mean= 2.02 (SD= 5.42)	Mean= 2.98 (SD= 4.51)
	Median= 1.35	Median= 3.68
	Range= -5.78-11.38	Range= -5.30-11.50
		Mann-Whitney U= 945, *p*=.297
Mean IQ estimate (WASI)	Mean= 63.1 (SD= 7.13)	Mean= 92.8 (SD= 10.5)
	Median= 63	Median= 89.5
	Range= 55-75	Range=81-124
		Mann-Whitney U= 0,, *p*<.001***
Gender	Males= 33	Males= 23
	Females= 12	Females= 25
		χ^2 (1) = 6.26, *p*=.012***
Freq. Aggressive	Agg= 15	Agg= 16
	Nagg= 30	Nagg= 32
		χ^2 (1) <.01, *p*=1

***p<.05

As Age, Social Deprivation and IQ were not normally distributed, of T-tests because responses. Table 11.3 demonstrates that the groups were well matched for age (U=1026, *p*=.671) and aggressiveness (χ^2 (1)<.001, *p*=1). Social Deprivation was compared by using the most recent version of the Carstairs scale (Norman, 2001). The Carstairs scale uses Census data to produce scores of relative social deprivation by UK postcode. Although

Table 11.3 suggests that the ND group appears to be from slightly more social deprived postcodes, no significant differences were found between the two groups (U=945, *p*=.297). However, while there were a similar number of males and females in the non-disabled group, there were nearly three times as many males as females in the ID group (χ^2 (1) = 6.26, *p*=.012). One final point of note was that the mean IQ of the ND group was low for a non-disabled group. However, all participants in this group had IQ scores in the normal range and, thus, above the threshold for borderline ID (Wechsler, 1944).

AGGRESSIVE & NON-AGGRESSIVE SUBGROUPS

To allow comparisons between aggressive and non-aggressive individuals, participants in the ID and ND groups were divided into aggressive and non-aggressive subgroups. Group allocation was on the basis of whether individuals had enacted six or more acts of physical or verbal aggression in the preceding six months. This data was collected using the Aggression subsection of the Checklist of Challenging Behaviours (CCB; Harris, 1993; see Appendix E). The criteria given by the CCB were used to explain to participating staff which behaviours constitute physical and verbal aggression. Participants identified as having been physically or verbally aggressive to others on at least six occasions in the preceding six months were assigned to the aggressive (AGG) subgroups. The remaining participants constituted what will be referred to as the non-aggressive (NAGG) subgroups. It should be noted that 'non-aggressive' is merely a convenient term to describe participants below the threshold of frequent aggression and is not intended to imply that such individuals are 'never' aggressive. The socio-demographic details of the aggressive and non-aggressive subgroups of both the ID and ND groups are shown below in Table 11.4:

Table 11.4
Studies 3 & 4: AGG and NAGG sub-group details

Group Sub-group	ID AGG	NAGG	ND AGG	NAGG
N	15	30	16	32
Age	Mean= 17.3 (SD= 1.16) Median= 17 Range= 16-20	Mean= 18.4 (SD= 1.40) Median= 18 Range= 16-20	Mean= 17.6 (SD= 1.46) Median= 17.5 Range= 16-20	Mean= 18.0 (SD= 1.40) Median= 18 Range= 16-20
	Mann-Whitney U= 126, *p*=.014***		Mann-Whitney U= 205, *p*=.251	
Carstairs Social Deprivation Score	Mean=2.4 (SD= 4.87) Median=2.07 Range=-5.78-9.84	Mean= 1.8 (SD= 5.75) Median= 1.15 Range=-5.6-11.4	Mean= 3.5 (SD= 3.82) Median=4.7 Range= -3.49-11.4	Mean= 2.8 (SD= 4.87) Median= 2.82 Range= -5.3-11.5
	Mann-Whitney U= 212, *p*=.745		Mann-Whitney U= 230, *p*=.592	
Mean IQ estimate (WASI)	Mean= 63 (SD= 7.2) Median= 63 Range= 55-73	Mean= 63.20 (SD= 7.20) Median= 62.5 Range= 55-75	Mean= 87 (SD= 9.1) Median= 84 Range= 81-117	Mean= 95.7 (SD= 10.5) Median= 96 Range= 81-124
	Mann-Whitney U= 225, *p*>.999		Mann-Whitney U= 125.000, *p*=0.004***	
Gender	Males= 13 Females= 2	Males= 20 Females= 10	Males= 14 Females= 2	Males= 9 Females= 23
	χ^2 (1) = 2.05, *p*=.153		χ^2 (1) =15.1, p<.001***	

***p<.05

As with the ID and ND group comparisons, Mann Whitney U Tests were conducted instead of T-tests because responses to Age, Social Deprivation and IQ were not normally distributed. The aggressive and non-aggressive sub-groups with IDs were well matched for IQ scores (U=225, *p*>.999) and levels of social deprivation (U=212, *p*=.745). There was also no significant difference in the proportions of males and females in each group (χ^2 (1)=2.05, p=.153). That said, while a third of the non-aggressive group were female, only two of the 15 aggressive individuals were female. The non-aggressive participants with IDs were also significantly older than the aggressive sub-group (U=125, *p*=0.014).

For the participants without IDs, the sub-groups were well matched for age (U=205, *p*=.251) and social deprivation (U=231, *p*=0.592). However, the IQ of the non-aggressive group was significantly higher than that of the aggressive group (U= 125, *p*=.004).

There was a notable difference in the distribution of males and females across the two subgroups without IDs (χ^2 (1)= 15.1, *p*<.001). Three fifths of the non-aggressive group

were females compared to two of sixteen aggressive individuals. It is appropriate to acknowledge at this stage the potential confounding effects of this gender imbalance. This is especially pertinent given the evidence of differences in the nature and extent of aggressive behaviour by males and females across the lifespan (e.g. Archer, 2004; Fabes, Martin, & Hanish, 2003). With a view to evaluating the risk of confounding influences from gender differences in the present sample, supplementary comparisons between males and females are reported for each of the main measures of Studies 3 and 4. Given that there were only two females in both the ID and ND aggressive subgroups, it was not possible to conduct such comparisons between the aggressive and non-aggressive subgroups.

11.3.3 Results

The main Results section for this study presents the findings regarding 1) whether participants with problems of aggression were more accurate or 2) more likely to identify anger than non-aggressive peers as well as 3) whether participants with IDs were less accurate than those without IDs.

In order to compare accuracy, participants were awarded scores based on the number of emotions correctly identified from clips with each correct answer counting for one point. With six clips per condition, participants were given scores with a maximum of six points for each of the four conditions (angry, sad, happy, neutral) as well as an overall score with a maximum of 24 points.

To examine whether groups differed in their response tendencies, the overall number of responses given by each participant in each response category was tabulated. As an additional way of comparing overall response tendencies, the number of incorrect responses of each category was also tabulated for each participant. By also examining the distribution of errors, it is possible to get more of an insight into whether any group differences in response tendencies constitute a response bias.

Given the marked gender imbalances between groups and the well established gender differences in aggression, additional comparisons were conducted between males and female participants for each of the three main measures (Archer et al, 2004).

11.3.3.1 Accuracy Of Participants With And Without Problems Of Aggression

PARTICIPANTS WITH IDS

Figure 11.2 (see below) shows the percentage accuracy of ID-AGG and ID-NAGG groups.
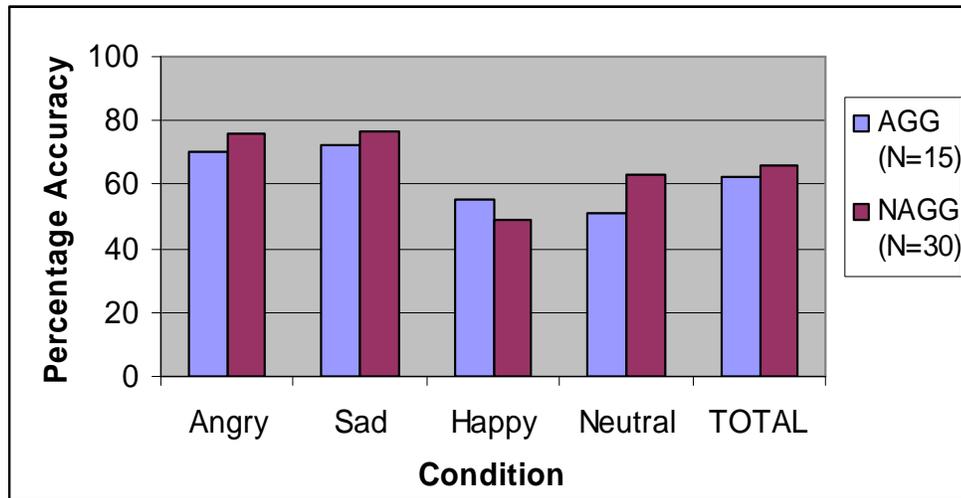
Figure 11.2. ID Group: Accuracy of AGG and NAGG Participants.

It was predicted that the aggressive group (AGG) would be less accurate than the non-aggressive group (NAGG). However, Figure 11.2 indicates that overall accuracy ('TOTAL') of the AGG and NAGG subgroups was relatively similar, with percentage accuracy of 62.22% and 66.11% respectively. A pair-wise comparison using a Mann-Whitney test confirmed that there was no significant difference in the overall accuracy of the groups (U=185, *p*=.326).

The accuracy for each condition was also examined to determine whether groups differed in their ability to identify specific emotions. The trends of the bar graphs in Figure 11.2 suggest that there was little difference between the groups in the accuracy for 'Angry', 'Sad' and 'Happy' conditions. However, the Non-aggressive group appear to have been more accurate than the aggressive group for 'Neutral' clips, correctly identifying 'no emotion' in 62.8% clips where the AGG group's accuracy was 51.1%.

Pair-wise comparisons revealed no significant differences in accuracy of the ID-AGG & ID-NAGG groups for any of the four conditions ('Angry': U=202, $p=.553$; 'Sad': U=197, $p=.479$; 'Happy': U=169, $p=.167$; 'Neutral': U=185, $p=.326$). Therefore, no significant group differences were found in either overall accuracy or in accuracy for specific emotions.

PARTICIPANTS WITHOUT IDS

In order to ascertain whether these trends were only characteristic of young people with IDs, comparisons were replicated for aggressive and non-aggressive young people without IDs. As with the participants with IDs, no significant differences were found between aggressive and non-aggressive subgroups in overall accuracy (U=239, $p=.708$) or in accuracy for specific conditions ('Angry': U=254, $p=.961$; 'Sad': U=227, $p=.487$; 'Happy': U=251, $p=.911$; 'Neutral': U=234, $p=.601$).

11.3.3.2 Response Tendencies of Participants With and Without Problems of Aggression.

The overall response tendencies of aggressive and non-aggressive participants with IDs were compared in two different ways. Firstly, the overall number of responses for each response category (irrespective of whether they were correct) was compared between groups. Secondly, the overall number of incorrect responses of each response category was compared between groups.

OVERALL RESPONSES

All responses given by each group were tabulated by response category:
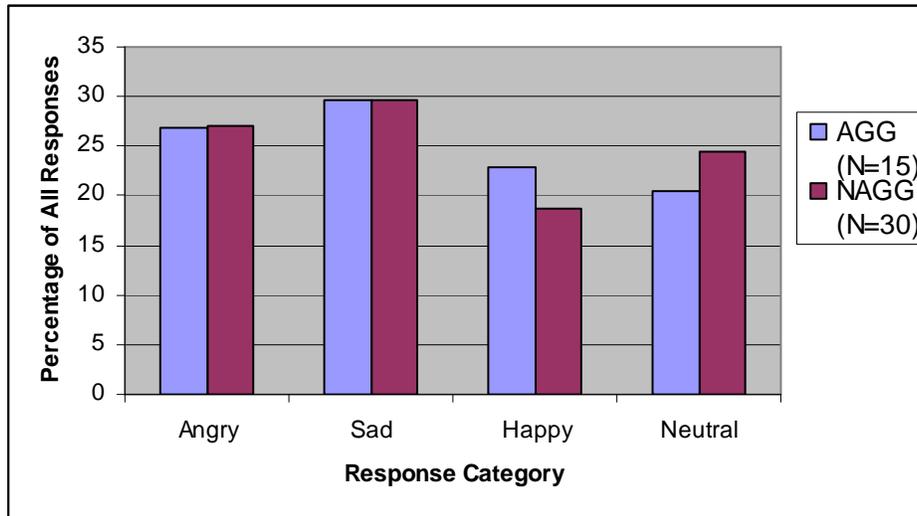
Figure 11.3. ID Group: Distribution of Responses by AGG and NAGG Participants.

It was predicted that a greater proportion of the AGG group's responses would identify anger than the NAGG group. However, both groups appear to have identified the emotion illustrated in just over 25% of clips as being 'Angry' (see Figure 11.3 above). A Mann-Whitney U test confirmed that there was no significant group differences in the proportion of 'Angry' answers (U=219, *p*=.884). Additional pair-wise comparisons did not find any differences in the number of each of the other three categories given by each group ('Sad': U=208.000, p=0.676; 'Happy': U=180, *p*=.274; 'Neutral': U=175, *p*=.226).

INCORRECT RESPONSES

The distribution of incorrect responses made by the AGG and NAGG participants is shown in Figure 11.4 below:
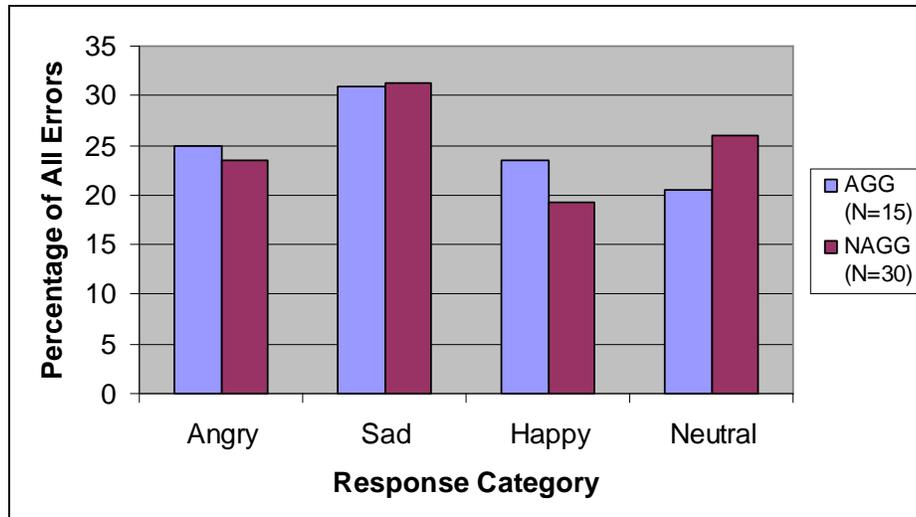
Figure 11.4 ID Group: Distribution of Incorrect Responses by AGG and NAGG Participants.

It was hypothesized that the AGG group would have identified proportionally more clips as conveying 'Anger'. However, groups gave a similar proportion of 'Angry' answers with 25% of the AGG group's and 23.46% of the NAGG group's responses being 'Angry'. A pair-wise comparison between groups confirmed that there was no significant difference between the AGG and NAGG groups (U=213, p=.767). Similar comparisons for the remaining three response categories also failed to find significant differences in the number of errors by the AGG and NAGG groups ('Sad': U=191, p=.402; 'Happy': U=180.000, p=.262; 'Neutral': U=204, p=.604).

PARTICIPANTS WITHOUT IDS

As with the investigation into accuracy of AGG and NAGG groups, comparisons of overall responses and incorrect answers were replicated for young people without IDs. This was in order to examine whether findings were specific to young adults with IDs. As with the ID group, the AGG subgroup without IDs did not identify more clips as 'Angry' overall (U=232, p=.579) or incorrectly identify more clips as being 'Angry' (U=254, p=.578) than NAGG participants. No other group differences were found in the overall responses ('Sad': U=211, p=.311; 'Happy': U=220, p=.405; 'Neutral': U=255, p=.982) or

in the incorrect responses ('Sad': U=227, *p*=.424; 'Happy': U=215, *p*=.340; 'Neutral': U=251, *p*=.875) given by groups.

11.3.3.3 Comparisons Between Participants With and Without IDs.

ACCURACY

As with the AGG and NAGG sub-groups of participants with IDs, accuracy of the ID and ND groups were compared for each specific condition and across all conditions. Accuracy of each group is presented below in Figure 11.5:
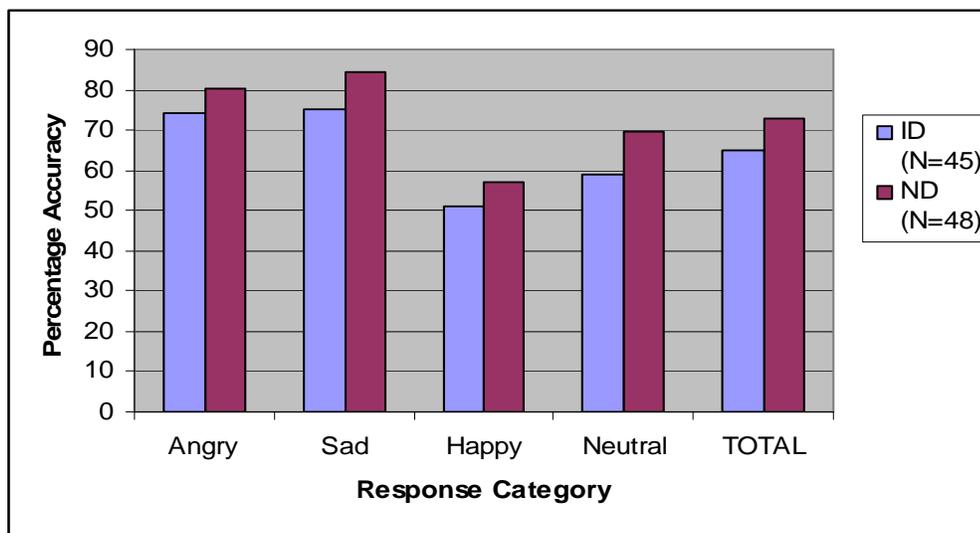
Figure 11.5. Accuracy of ID and ND Groups.

It was hypothesised that the ND group would be more accurate than the ID group. Although both groups correctly identified the majority of stimuli, the ND group appear to have been more accurate than the ID group, correctly identifying emotion in 72.74% of the displays compared to the ID group's overall accuracy of 64.81%. This difference was found to be statistically significant (U=694, *p*=.003).

Accuracy of the ID and ND groups for each individual condition were also compared. The ND group was found to be significantly more accurate at identifying 'Sad' emotion (U=227, *p*=.038). The ND group also tended to be more accurate at identifying 'Neutral' movies, however, this difference was not significant (U=251, *p*=.068). Significant

differences were not found for the two other conditions ('Angry': U=254, p=.253; 'Happy': U=215, p=.305).[8]

RESPONSE TENDENCIES

In keeping with comparisons between the aggressive and non-aggressive subgroups, the overall response tendencies and distribution of incorrect responses of participants with and without IDs were compared. Groups were not found to differ in the number of responses given for any of the categories ('Angry': U=1026, p=.672 'Sad': U=978, p=.422; 'Happy': U=973, p=.399; 'Neutral': U=917, p=.206). There were also no differences found in the groups' distribution of errors ('Angry': U=845, p=.063 'Sad': U=913, p=.186; 'Happy': U=879, p=.107; 'Neutral': U=1037, p=.733).

GENDER COMPARISONS

In order to test whether gender imbalances between groups could have had an influence on the results, the accuracy, incorrect responses and overall response tendencies of males and females in each group were also compared.

For the participants with IDs, no differences were found in accuracy ('Overall': U=174, p=.551 'Angry': U=191, p=.849 'Sad': U=175, p=.568; 'Happy': U=153, p=.257; 'Neutral': U=174, p=.551) overall response tendencies ('Angry': U=185, p=.752 'Sad': U=145, p=.180; 'Happy': U=194, p=.909; 'Neutral': U=161, p=.354) or the distribution of errors ('Angry': U=167, p=.424 'Sad': U=144, p=.172; 'Happy': U=171, p=.502; 'Neutral': U=163, p=.381).

Males and females without IDs were not found to differ in accuracy ('Overall': U=240, p=.323; 'Angry': U=245, p=.319 'Sad': U=243, p=.323; 'Happy': U=267, p=.416; 'Neutral': U=240, p=.323). However, males were found to identify more anger and to incorrectly identify displays as angry (U=171, p=.012; U=180, p=.021 respectively).[9] No other gender differences were found for overall responses ('Sad': U=259, p=.542;

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[8] If Bonferroni corrections are applied, the difference in overall accuracy remains significant (p= .015) but the difference in accuracy for Sad movies becomes non-significant (p= .190).
[9] If Bonferroni corrections are applied, the gender difference in the number of 'Angry' responses remains significant (p= .048) but the difference in 'Angry' errors becomes non-significant (p= .084).

'Happy': U=280, *p*=.863; 'Neutral': U=244, *p*=.356) or the distribution of errors ('Sad':

U=271, *p*=.718; 'Happy': U=233, *p*=.231; 'Neutral': U=279, *p*=.849).

11.4 Study 3. Emotion Recognition from Dynamic Cues DISCUSSION

11.4.1 Interpretive Summary

Contrary to the study's hypotheses, findings did not suggest that the ability to identify emotion was related to aggression in young adults with IDs. Similarly, no evidence was found of any response biases or tendencies that might be related to aggression. There were also no significant differences for the non-disabled subgroups. These findings are broadly in line with those of the systematic review in Chapter 7 which found only one of the four studies to have investigated this subject recovered any evidence that participants with IDs and problems of aggression had relative deficits in emotion recognition (Woodcock & Rose, 2006; Walz & Benson, 2005; Matheson and Jahoda, 2005; Jahoda et al, 2006a).

The present study took a methodologically novel and sophisticated approach to examining the influence of a longstanding theoretical factor in frequent aggression in this population. These findings constitute further well-controlled evidence that fails to support the idea that deficits in emotion recognition contribute to aggression in people with IDs. In the context of existing findings, it appears that there remains little in the way of a mandate for continuing to research emotion recognition deficits in people with IDs.

Although no differences were found between aggressive and non-aggressive groups, non-disabled participants were found to be more accurate than participants with IDs overall and for the 'Sad' displays. Arguably, this finding could suggest that the ability to identify emotion from dynamic cues is a common deficit in young adults with IDs. It is plausible that such difficulties could predispose people with IDs to misinterpret the intent of others in social situation which could in turn lead to conflict or other difficult social situations. This could well contribute to the higher rates of conflict and victimisation encountered by people with IDs (Jahoda & Markova, 2004; Levy & Packman, 2004; Sobsey, 1994). However, although they were significantly less accurate than the ND group, the ID group correctly identified the emotion in 64.8% of the displays which was less than 8% lower

than the accuracy of their non-disabled peers. As such, further research would be required to ascertain whether this difference has any meaningful impact on their lives.

11.4.2 Limitations of the Study

As mentioned in the discussion for Study 2, there were socio-demographic differences between groups that may have had an influence on the comparisons between groups (see p.162). As these issues apply to Studies 2, 3 and 4, they are discussed in some detail in the general discussion at the end of the present thesis.

One specific concern is of the potential confounding influence of gender imbalances between groups. The effects of these imbalances were evaluated by conducting comparisons between male and female participants for each main measure in each study. Unfortunately, because there were only two females in both the ID and ND aggressive subgroups, it was not possible to conduct such comparisons between the aggressive and non-aggressive subgroups. Gender comparisons for ID and ND groups revealed no differences in accuracy. However, non-disabled males were found to give more 'angry' responses and more incorrect 'angry' responses than females. Consequently, it must be acknowledged that such findings draw the validity of the non-disabled subgroup comparisons into question. Given that no group differences were found between aggressive and non-aggressive subgroups, it is difficult to gauge the actual influence of these gender differences.

The PLD task was designed specifically for this study. As such, data on the validity and reliability of the task are yet to be produced. Also, no normative data was available for the displays themselves. One final issue is that because the displays show movies of actors, they only depict the simulated conveyance of emotion rather than the natural expression of actual emotion. Consequently, it is debatable as to whether the task actually measures ability to read emotional cues from a person's gait. However, there would clearly be many logistical and moral obstacles to obtaining systematically recorded displays of people walking in genuine emotional states. It is most likely that this is the reason why previous studies looking at emotion recognition from dynamic cues have tended to use actors (e.g. Hubert et al, 2006).

11.4.3 Implications and Future Research

While the existing literature gives little support to the idea that deficits in emotion recognition contribute to aggression in this group, their findings may advocate an interesting new direction for research. PLDs were consciously chosen for the present study because they isolate biological motion from other environmental cues. Similarly, most other studies have investigated emotion recognition and aggression by using stimuli of specific types of cues, usually facial expression (e.g. Woodcock & Rose, 2006; Walz & Benson, 2005; Jahoda et al, 2006a; Matheson and Jahoda, 2005). Interestingly, the only finding that links emotion recognition accuracy to aggression came from a task that used 'contextually rich' stimuli (pictures of emotion-typical scenes with various cues) rather than stimuli designed to isolate specific types of cues (facial expression, walking gait).

In light of these findings, it may be that a difficulty weighing up the complex array of social cues, often conflicting cues, present in a real-life situation is the true nature of the apparent emotion recognition/aggression relationship (Zaja and Rojahn, 2008). Further research may wish to clarify whether the enduring, but poorly evidenced, link between emotion recognition deficits and aggression are in fact rooted in limitations in other areas of processing.

One possible focus for such research might be the relationship between attentional biases and aggression. It may be that although aggressive people are not necessarily poorer at identifying specific social cues, they pay more attention to cues that might be construed as hostile. Much like attentional biases observed in individuals with depression, aggressive individuals may then be more likely to focus on hostile cues, thereby, missing other cues that might paint situations in a more innocuous light (Mogg et al, 1995). Eye-tracking technology, which has already been used to similar ends with non-disabled participants, may provide an ideal platform for such research by allowing the researcher to examine precisely what cues participants pay the most attention to in social scenes (Horsley, et al, 2010). Another objective for future research might be to examine whether aggressive individuals consider less information before making an appraisal about others' emotions or intent. Tasks could be developed to measure the reaction times of participants' attributions to dynamic stimuli.

Finally, the task developed for the present study was one of the first to examine social information processing of dynamic cues in adults with IDs. It might be useful to develop similar tasks with dynamic stimuli as a way of examining other aspects of SIP in aggression. For example, movie-based vignettes of provocative interactions, which could be accompanied with audio, could prove to be a more engaging format for participants in research into areas such as intent attribution or outcome expectancy. Such video-based vignettes have already been used to investigate SIP in participants without IDs (Fontaine et al, 2009).

11.4.4 Conclusion

In conclusion, the present study found no evidence that tendencies or deficits in the interpretation of dynamic social cues are linked to aggression in young adults with IDs. Despite the enduring association between deficits in emotion recognition and aggression in people with IDs, this study is one of many that have found no evidence of such deficits in aggressive people with IDs. As argued above, it may be that the true nature of the purported link between emotion recognition and aggression is in fact that aggressive people may have more difficulties weighing up complex arrays of social information. Whether or not this transpires to be the case, it would appear that there is very little to support the argument that deficits in emotion recognition underpin aggression in this group.

Chapter 12 Study 4: Predicted Outcomes of Submission and Aggression

12.1 Study 4. Predicted Outcomes of Submission and Aggression
INTRODUCTION

To date, studies examining SIP in aggressive adults with IDs have generally concentrated on the earlier stages of processing such as the encoding and interpretation of social cues. For example, the preceding study of this thesis examined whether young adults with problems of aggression demonstrate biases or deficits when asked to identify emotion from dynamic cues. However, simply noticing hostile social cues or interpreting cues as hostile does not necessitate an aggressive reaction. Once a social situation has been conceptualized as being hostile, the individual has still to generate response options and choose from these options. Amongst other things, this decision making process will be driven by the expected consequences of each available response option. In particular, research with the typically developing population has found that aggressive individuals predict more positive outcomes from aggression than do non-aggressive participants (Slaby & Guerra 1988; Perry et al, 1986).

Two recent studies sought to examine whether aggressive adults with IDs also predict different outcomes from aggression than non-aggressive peers. Pert & Jahoda (2008) argued that because many adults with IDs commonly experience a sense of powerlessness, they might feel particularly resistant to responding submissively to provocation. They predicted that views on submissive behaviour could also have a role in aggression in this group. For this reason, both studies explored the predicted outcomes of both aggressive and submissive responses to provocation.

In line with earlier research with non-disabled participants, both studies employed tasks using illustrated vignettes depicting a protagonist provoking another unseen character. Participants were asked to imagine that they were the character being provoked and were then shown the vignettes. At the end of each vignette, participants were either asked to

imagine responding in a submissive or aggressive manner. They were then asked to predict the consequence of such a response across a range of domains. Kirk et al (2008) found that aggressive participants predicted more positive consequences, positive peer evaluation and positive self-evaluation following aggressive responses. Non-aggressive participants were significantly more likely to predict positive peer evaluation of submissive behaviour. Pert et al (2008) did not find any significant differences between groups. However, more aggressive participants expected peer disapproval of submissive behaviour and to feel bad about themselves. More non-aggressive participants thought submissiveness would reduce the hostility of others.

These findings suggest that response evaluation influences aggression in adults with IDs. However, a recent study found that outcome expectancy does not help explain aggression in children with IDs (van Nieuwenhuijzen et al, 2006). This mirrors the findings of developmental research with typically developing participants which suggests that response evaluation may only become an important factor in aggression during adolescence (Lansford et al, 2006; Fontaine et al, 2009). Given that outcome expectancy has been linked to aggression in adults with IDs but not in children, it would seem plausible that the importance of decision-making to aggression in this group may also emerge during adolescence. However, no study has examined whether predicted outcomes of aggression have any influence on aggression in older adolescents with IDs. Therefore, the present study sought to investigate whether the findings observed in post-adolescents with adults with IDs could be replicated with a sample of young adults. To assess the extent to which findings are uniquely characteristic of people with IDs, results were compared with non-disabled control groups of aggressive and non-aggressive people.

If outcome expectancy does influence aggression in adolescents with IDs, it is reasonable to expect particular types of outcomes to matter more to people at this stage. Previous findings suggest that peer-norms are likely to have an influence on decision-making processes for adults of all ages (Fontaine et al, 2009; Pert & Jahoda, 2008; Kirk et al, 2008). It is, in fact, thought to be particularly salient to teenagers and young adults for whom peer group norms about aggression are thought to carry particular weight (Cairns & Cairns, 1994). However, given that young people with IDs tend to enjoy less autonomy and to have fewer friends than non-disabled young people, it is possible that perceived parental appraisal may continue to have an important influence during adolescence and into adulthood (Caton & Kagan, 2007). Indeed, research into health risking behaviour found that when deciding how best to respond to situations, people with IDs give more

weight to the perceived values of their parents than their non-disabled peers do (Pownall et al, 2010). Despite this, little is known about whether parents' beliefs about aggressive behaviour also play a role in the aggressiveness of individuals with IDs. For this reason the present study examined the potential influence of perceived parental attitudes to aggressive behaviour in young people with IDs as well as further examining the influence of peer attitudes and other key outcomes.

12.2 Study 4. Predicted Outcomes of Submission and Aggression
METHODS

12.2.1 Aims

This study examined whether young people with IDs, and problems of aggression, anticipate different outcomes from aggressive and submissive responses to social conflict. Previous research with adults of all ages suggests that aggressive individuals may predict a more negative outcome from submissive responses (Kirk et al, 2008). Specifically, findings suggest that individuals with aggression problems expect less peer approval of submissive behaviour than non-aggressive people with IDs. On the basis of these existing findings, it was deemed appropriate to offer the following directional hypotheses:

> 1) Young adults with IDs and frequent aggression will offer more positive predicted outcomes from aggressive responses to conflict than their non-aggressive peers.
> 2) Young adults with IDs and frequent aggression will offer more negative predicted outcomes from submissive responses to conflict.

In addition to comparing the direction of the groups' predictions (i.e. positive or negative outcomes), this study also aimed to explore whether aggressive and non-aggressive young adults with IDs tended to predict different types of outcomes from aggressive and submissive behaviour. Furthermore, it sought to examine whether aggressive and non-aggressive individuals differ in their own predicted responses to provocation.

12.2.2 Design

A cross-sectional design was employed to compare the responses of aggressive (AGG) and non-aggressive (NAGG) participants with IDs. In order to evaluate whether any patterns of processing were specific to young people with IDs, comparisons were repeated between groups of aggressive and non-aggressive young people without IDs.

12.2.3 Power Calculation

One previous study of outcome expectancy in people with IDs has uncovered significant differences between aggressive and non-aggressive groups with sample sizes of 18 (Kirk et al, 2008). Thus, it was estimated that a sample of 24 participants per group would be suitable for the present study. This calculation was made using the PS power and sample size calculator and is based on a 0.05 significance level and a power of 0.8.

12.2.4 Inclusion and Exclusion Criteria

12.2.4.1 Inclusion Criteria

The following criteria were required for inclusion in the designated groups:

1. **All Participants**: Aged 16-20 years old.

2. **ID Group**: Identified by staff as having a mild to moderate intellectual disability (presence of an ID was later verified by completion of the Wechsler Abbreviated Scale of Intelligence).

3. **Aggressive Groups**: Staff-reported history of recent and frequent aggressive behaviour (six or more significant acts of physical or verbal aggression in preceding six months)

Staff at Additional Supports Needs colleges verified that potential participants had sufficient receptive and expressive language skills to engage in the interview. To minimize potential socio-economic differences, efforts were made to recruit participants of both groups from largely the same areas of Central Scotland.

12.2.4.2 Exclusion Criteria

Individuals identified as, or suspected of, having Autism Spectrum Disorders were excluded due to the qualitative impairments in social interaction and communication and understanding associated with this disorder (DSM-IV-TR, 2000).

12.2.5 Recruitment

All data for Studies 2, 3 and 4 were collected over two sessions with the same participants. As such, the recruitment procedure for Study 4 was identical to that outlined in the Methods Section for Study 2 (see p.129).

12.2.6 Justification of Measures

Studies investigating SIP and aggression often utilise vignettes depicting scenes of social conflict. However, the scenarios used in these tasks are usually developed without a clear evidence base. In Study 1, rich data were collected reflecting the experiences of social conflict encountered by young adults with IDs. These data offered a unique opportunity to develop vignettes depicting social conflict that were tailored to the actual experiences of young people with IDs.

The vignettes that were developed on the basis of Study 1's findings, offer a tool for looking at a number of areas of SIP in relation to aggression, including social goals or attribution of hostile intent. The present study used these vignettes to address outcome expectancy of submissive and aggressive behaviour for two key reasons. Firstly, the two studies that have looked at this area in people with IDs both found promising results, suggesting that outcome expectancy is an area worth further investigation (Kirk et al, 2008; Pert et al, 2008). Kirk et al (2008) found that aggressive individuals predicted significantly more positive outcomes form aggression and significantly more negative outcomes form submissive behaviour. Although Pert et al (2008) did not find significant differences, they also found clear trends that mirror the findings of Kirk et al's study.

These findings indicate that differences in outcome expectancy may contribute to aggression in adults with IDs.

Research with non-disabled youths has shown peer appraisal to have a strong influence on decision making at this developmental stage (Cairns & Cairns, 1994). Interestingly, research into health risking behaviour found that young people with IDs may give more weight to the perceived values of their parents than their non-disabled peers do (Pownall et al, 2010). Therefore, while predicted peer appraisal might have an important influence on behaviour of people in this age-group, parental beliefs may have a particularly strong influence on individuals with IDs. Given the existing links between outcome expectancy and aggression, there is a clear rationale for examining how the predicted outcomes of other people might influence aggression in young people with IDs.

As vignettes have already been used successfully to explore SIP in people with IDs, there is good reason to use a vignette-based task (Kirk et al, 2008; Pert & Jahoda, 2008). Furthermore, vignettes offer unique advantages over other methods. The narratives of vignettes create a naturalistic context that can feel more 'real' to participants and, thus, involve them more with the given scenario (Hughes & Huby, 2002). In doing so, vignettes can in turn facilitate a particularly authentic account of a person's attitudes, perceptions or beliefs. Finally, responses of children with IDs to hypothetical vignettes designed to examine SIP have been found to correlate with their reactions in real life situations (van Nieuwenhuijzen et al, 2005b)

12.2.7 Development of Outcome Expectancy Task

The outcome expectancy task was based largely on the Beliefs About Responses to Threat Task (BARTT) measure used by Kirk et al (2008) and the Social Goals and Strategy for Conflict assessment (SGASC) measure used by Pert & Jahoda (2008). In accordance to these previous studies, the task involved participants being presented with scenarios where someone was acting in a provocative manner towards them. They were then asked to imagine reacting to this situation in either a submissive or verbally aggressive manner. After each scene, participants were asked a set series of questions.

12.2.7.1 Protocol

The protocol for this study was based on that of Pert & Jahoda (2008). As illustrated below in Figure 12.1 four open-ended questions were each followed immediately by corresponding forced choice questions followed by an additional open-ended question regarding how the participant would respond to a similar situation if it happened in real life (see Appendix J for full protocol including instructions for researcher):

(Provocative Vignettes)

    A. What do you think would happen after you did this?
    B. Would something good or bad happen?

    A. When you (walked away/shouted at them etc), what would your friends think of you?
    B. Would they think you were strong or weak?

    A. When you (….), what would your parents think of you?
    B. Would your parents think you were strong or weak?

    A. How would doing this make you feel about yourself?
    B. Would doing this make you feel good or bad about yourself?

    A. What would you do if this happened to you?

(Positive Vignettes)

    • How would you feel when [he gives you the present etc]?
    • What do you think about [your friend etc]?
    • What does [he] think of you?

Figure 12.1: Question Protocol for Outcome Expectancy Task

As outlined previously in the Rationale section, there was reason to predict group differences in the expected parental appraisal of aggressive and submissive behaviour. Therefore, a pair of questions not included in previous studies in this area, regarding parental appraisal, were included in the protocol.

12.2.7.2 Vignettes and Stimuli

The content of the vignettes was developed using data gathered from participants in Study 1. As the vignettes were also used in the Scenario Rating Task in Study 2, a detailed account of this development process is provided in the Methods section for that study (p.134).

Five provocative scenarios were developed that represented the most salient features of conflict reported by participants in Study 1. In order to provide a balance and prevent participants becoming 'stuck' in a particular response set, four 'positive' scenarios were also developed. It was also envisaged that by including the positive vignettes, there would be less risk of participants being upset by the provocative scenarios. As there were no data to base these on, the positive vignettes were adapted from those used previously by Kirk et al (2008). In the four final vignettes, the protagonist 1) receives praise from a teacher 2) receives a gift from a friend 3) is invited to a party by new friends and 4) a shopkeeper is being kind to them. Summaries of the final vignettes can be found below and the full vignettes are described in Appendix J.

Provocative Scenes
- Physical Violence: *(in the corridor, you are tripped and mocked by classmates).*
- Unprovoked personal insult: *(At a bus stop, unknown peer laughs at you and tells you to go somewhere else).*
- Social Aggression: *(in a cafeteria, friend tells you that a classmate at another table was telling "nasty stories" about you).*
- Chastisement: *(parent tells you off unfairly).*
- Let down: *(after you have waited over half an hour for them, a friend phones to cancel a trip to the cinema because they "can't be bothered").*

Positive Scenes
- Your friend gives you a present.
- Your teacher compliments your work
- Your friend's other friends like you.
- A shopkeeper kindly allows you to take a chocolate bar even though you do not have enough money with you.

Following the precedent of previous studies, photographs were produced to illustrate the scenes (Kirk et al , 2008; Pert & Jahoda 2008). Initially, several possible images for each scene were sketched by the researcher. Then, the research team chose the images that communicated the story of each scene most clearly. Provocative scenes were depicted via two or three photographs. Two of the positive scenes had two images while it was decided that the remaining two scenes were best depicted with only one image. All photographs

were taken using a digital camera. All images used were in full colour, had resolution of 2048 by 1536 (see Appendix J for full illustrated vignettes). The illustrations used in the tasks were all between A5 and A6 in size and were laminated. Photographs were taken in various locations around Glasgow city and all actors were non-disabled. As with the storylines of the vignettes, a more detailed account of the decision making processes behind the illustrations can be found in the Methods section for Study 2 (p.134).

12.2.7.3 Piloting

The task included five provocative vignettes with alternate submissive and aggressive conditions and four positive vignettes. As such, participants responded to fourteen scenarios altogether. The final vignettes can be found in Appendix J and the interview protocol was as outlined above in Figure 12.1.

Piloting was conducted with five typically developing adults and two young people with IDs. The following feedback was obtained and subsequent amendments made:

i) VIGNETTE NARRATIVES:

In Vignette 1, where the individual is tripped, two of the participants did not realise that the trip was clearly intentional. The wording of the vignette was changed from "…deliberately tripped" to "tripped up on purpose" and stress put on the "on purpose" when reading the scene. In the submissive response to the same vignette, the participant "turns to walk away" while they are still supposed to be on the ground. This was changed to "…get up and (walk away)."

Vignette 2, where a friend informs the participant that a classmate has been telling insulting stories about him or her, did not appear to be sufficiently provocative to participants. Also, the participants with IDs reported feeling unsure about their answers to questions regarding outcome and self-appraisal. Both of these comments seemed to arise because there was a degree of ambiguity about whether the person at the other table had in fact said these things. To resolve this, it was made clear that the protagonist trusts the friend's opinion by inserting "Since she's a good friend, you believe what she says." To be

more provocative, it was made clear that the person was "Saying nasty things about you *to the rest of your classmates.*"

Finally, in Vignette 5, where the protagonist has waited for their friend for a very long time, there is no mention of "waiting" at the cinema. To resolve this, "You're waiting at the cinema but…" was inserted at the start of the second sentence.

ii) RESPONSES

Some aggressive responses were not perceived to be aggressive enough. Indeed, two of the five pilot participants without IDs anticipated clearly positive outcomes from aggressive responses to scenes 1 and 5.

In Vignette 1, the aggressive response of "you shout at them, calling them names and telling them they had better not laugh at you or else" may have seemed like a fairly understandable response given the severity of the provocation. It may not have been clear from the wording that this response was a threat. The wording was therefore changed to "*You jump towards them, shouting angrily and telling the person that tripped you: 'You're dead!'*"

In Vignette 5, the original aggressive response was *"You shout down the phone, telling him not to treat you like this again or else."* Again, it may not have seemed a threatening enough response. Also, the reference to "not treating me like this" may have implied a degree of assertiveness rather than aggressiveness. Hence, the wording was changed to "you shout down the phone, and tell them *that if they do something like this again, they're for it."*

iii) QUESTIONS

In the first pilot session, the prompts for parental and friend appraisals did not always seem to elicit answers in keeping with the response categories (weak or strong). Instead, some participants wanted to give appraisals that were more readily coded as "Right/Wrong" or "good/bad" rather than "weak/strong". With subsequent participants, it was clarified that the researcher was looking for how the person appraised them rather than their behaviour.

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Also, "would they think this was showing strength or being weak?" seemed to fit more naturally with the scenes than "would they think you were strong or weak."

12.2.8 Measures

12.2.8.1. Outcome Expectancy Task

As outlined above, a task based on the Beliefs About Responses to Threat Task (BARTT; Kirk et al, 2008) was developed to examine participants' predictions about the consequences of enacting aggressive and submissive responses to threat-scenarios. Participants were read a number of brief vignettes, illustrated by photographs, depicting provocative social situations. For each vignette, participants were asked to imagine reacting in an aggressive or submissive manner. Participants were then asked to predict 1) the consequence of the action 2) how they would feel about enacting the action 3) what their friends would think and 4) what their parents would think. They were then asked to indicate 5) how they would react to the situation. Questions 1 to 4 had open-ended and forced choice sub-questions while question 5 was open-ended. Participants were also presented with four positive scenes which were randomly dispersed among the ten provocative scenarios. Randomisation was achieved by using a Latin Square. The vignettes used in the task were developed specifically for this study on the basis of findings from Study 1 of the present thesis. The full vignettes and question schedules can be found in Appendix J. The task took between 40 to 60 minutes to complete.

12.2.8.2 Wechsler Abbreviated Scale Of Intelligence (WASI; Wechsler, 1999)

The two-subscale version of the WASI provides an estimate of general intellectual ability by testing vocabulary and matrix reasoning skills. The WASI is an abbreviated version of the Wechsler Adult Intelligence Scale–III (WAIS -III; Wechsler, 1997). The WASI can be completed in a relatively brief period of time and has acceptable Correlation scores with the WAIS -III at 0.87 for Vocabulary, 0.66 for Matrix Reasoning and 0.87 overall (Wechsler, 1999). Each participant completed the WASI to ensure that they had been assigned to the appropriate group.

12.2.8.3 Checklist of Challenging Behaviour (CCB; Harris, 1993; See Appendix E)

The aggression subscale of the CCB was completed with staff members with six or more months experience of working with the particular participant they reported on. CCB scores were used to assign each participant to the aggressive or non-aggressive subgroup. Participants were assigned to the appropriate aggressive subgroup if they were reported to have enacted six or more acts of verbal or physical aggression in the preceding six months. This measure was developed specifically for use with staff working with people with IDs.

12.2.9 Procedure

All measures used in Studies 2, 3 and 4 were completed with the same sample over the same two sessions (see Table 12.1 below). The Outcome Expectancy task was completed by itself in Session One while the WASI was completed in the second session.

Table 12.1
Schematic of procedure of Studies 2, 3 & 4 (measures used in Study 4 are highlighted in bold).

Participants	Session	Study	Measure	Duration	Function
Test and Control Groups (A-ID, NA-ID, A-ND, NA-ND):	**SESSION ONE**	**STUDY 4**	**Belief about Response to Threat Task (BARTT)**	**40-60 minutes (approx)**	**Explores participants' expected outcomes of aggressive and submissive behaviour**
	SESSION TWO	STUDY 3	Emotion Recognition Task (E-WALK)	30 mins (approx)	Measures accuracy and of emotion recognition from human motion.
		STUDY 2	Scenario Rating Task	10-15 minutes (approx)	Records how recently participants experienced different forms of social conflict and how provocative they find them.
		STUDY 2	Family Aggression Interview	10 minutes (approx)	Levels of anger and aggression in household.
		STUDIES 2, 3 & 4	**Wechsler Abbreviated Scale of Intelligence (WASI; 2-subscale vers.)**	**15 minutes (approx)**	**Indicator of intelligence (Vocabulary, Matrix Reasoning)**
Teacher/Lecturers:		**STUDIES 2, 3 & 4**	**Checklist of Challenging Behaviour**	**5 minutes (approx)**	**Indicator of Ps' recent aggressive behaviour.**

All tasks were completed in a private room on the grounds of the participating institution. Participants were made aware that a member of staff was present in an adjacent room and that they were free to withdraw from the experiment at any time.

In the first session, participants were asked to complete the outcome expectancy task with the researcher as outlined above in the measures section. The full illustrated vignettes complete with researcher's instructions and question protocol can be found in Appendix J. The remaining measures were completed in the second session on a separate day, normally within a week of the first session (see Table 11.1 above for a schematic overview). The WASI was completed last because it was judged to be contradictory to the open spirit of the interview which sought to explore the experiences of participants.

Finally, with the participants' permission, staff members, that had known participants for at least six months, were asked to complete the aggression section of the aggression section of the Checklist of Challenging Behaviour with the researcher (Harris, 1993).

12.2.10 Analysis Strategy

Forced-Choice Questions

Responses to questions 1 and 4 were coded as either 'good' or 'bad' and responses to questions 2 and 3 were coded as 'strong' or 'weak'. Responses for each item were initially entered into separate columns of the database for each vignette. For each item, responses for all "aggressive ending" vignettes and similarly for all "submissive ending" vignettes were then collapsed into separate columns. **ANALYSIS**: As the data was categorical in nature, it was decided that chi square comparisons would be conducted between the responses of AGG and NAGG subgroups to each of the four forced-choice questions. Separate sets of comparisons were to be conducted for responses to vignettes with aggressive endings and vignettes with submissive endings. Finally, these comparisons were to be repeated for AGG and NAGG subgroups without IDs.

Open-Ended Questions

Once responses had been collected, content analysis was used to identify applicable categories to code each of the open-ended items. For each item, responses for all "aggressive ending" vignettes and similarly for all "submissive ending" vignettes were collated into separate columns. **ANALYSIS**: As with the forced-choice questions, it was decided that chi square comparisons would be conducted between the responses of AGG and NAGG subgroups to each of the four forced-choice questions. Separate sets of comparisons were to be conducted for responses to vignettes with aggressive endings and

vignettes with submissive endings. Finally, these comparisons were to be repeated for AGG and NAGG subgroups without IDs.

12.3 Study 4. Predicted Outcomes of Aggressive and Submissive Behaviour
RESULTS

12.3.1 Introduction

As outlined in the preceding Methods section, the aim of Study 4 was to examine whether aggressive and non-aggressive individuals would predict different outcomes from submissive and aggressive responses to provocation (p.202). It aimed to test two directional hypotheses about these predicted outcomes:

1) Young adults with IDs and problems of frequent aggression will offer more positive predicted outcomes from aggressive responses to conflict than their non-aggressive peers.

2) Young adults with IDs and problems of frequent aggression will offer more negative predicted outcomes from submissive responses to conflict than their non-aggressive peers.

In addition to comparing the direction of the groups' predictions (i.e. positive or negative outcomes), this study also aimed to explore whether aggressive and non-aggressive young adults with IDs tended to predict different types of outcomes from aggressive and submissive behaviour. Furthermore, it sought to examine whether aggressive and non-aggressive individuals differ in their own predicted responses to provocation.

As the same 93 participants completed Studies 3 and 4, the socio-demographic details of participants can be found in the Results section for Study 3 (Chapter 11, page 185).

12.3.2 Coding

To address the hypotheses and research objectives, the predicted consequences of responding submissively or aggressively to provocative scenarios were compared between aggressive (AGG) and non-aggressive (NAGG) young people with IDs. Participants were shown provocative scenarios, ending with either a submissive or aggressive imagined reaction from the participant. They were then asked to predict the outcome of the imagined reaction in respect to four different categories of outcome:

1. Direct consequence (e.g. "get punched", "he walks away")
2. Friends' appraisal of behaviour (e.g. "mature", "bit of a 'softie'")
3. Parental appraisal of behaviour.
4. Self-appraisal (how the participant would feel after reacting in that way).

Each of these four questions had an open ended and a forced-choice component. Answers to the forced-choice questions essentially gave a general appraisal as to whether the participant predicted consequences that were "positive" or "negative". Such data is less ambiguous and conducive to quantitative comparisons. However, the level of interpretation that can be extracted from this data was intrinsically limited to how positive or negative the groups' predictions were. It was hoped that by including open-ended questions, it would be possible to record richer data that allow for more nuanced insights into differences between the groups' predictions.

In addition to the four paired questions regarding outcome expectancy, participants were asked what their responses would have been should they have found themselves in the same situations. Responses to forced-choice and open-ended questions were coded using different strategies.

12.3.2.1. Forced Choice and Open-Ended Questions

The first four questions of the outcome expectancy task included forced choice conditions with two response options. The exact response options varied between the questions but essentially reflected a 'positive' or 'negative' perception or outcome (e.g. 'weak' or 'strong'; 'good' or 'bad'). After interviews began, it became apparent that several

participants' were predicting different opinions for each of their parents. In such instances, the predicted appraisal of the parent of the same sex as the participant was coded. This theoretical reasoning behind this comes from Social Learning theory. It predicts that aggressive behaviour of parents of the same sex may have a particularly strong influence on later aggressiveness of a child (Bandura et al, 1961). This may be particularly true of males who may view their father's aggressive behaviour as sex appropriate behaviour (Fauls & Smith, 1956). There is evidence to support this argument in that marital aggressiveness of same-sex parents is found to influence aggressive problem-solving in children (Durman & Margolin, 2007).

Several stages of coding were employed to analyse the five open-ended questions. Firstly, responses were coded into three initial categories of 1) positive appraisal (e.g. "done the right thing") 2) negative appraisal (e.g. "terrible, guilty") or 3) no/unclear/neutral response (e.g. "same either way"). Where a response included both positive and negative components, the response was coded in accordance with the answer to the corresponding forced choice question.

The second level of coding involved content analysis of the positive and negative responses. Answers to each interview item were grouped into categories that reflected the different responses given by participants. The research team then discussed the categories of each coding frame; adjusting them where necessary until agreement was reached. Responses that were discernibly positive or negative, but did not include a specific appraisal of the submissive or aggressive behaviour, were coded as 'unspecific positive' or 'unspecific negative'. Where a response included components that could be coded into different categories, the response was categorised on the basis of the first component. Examples of participants' responses to the open-ended questions, and how they were coded, are given in Appendix K.

For some of the questions, the proportions of responses by each group that fell into the no/unclear/neutral response category were markedly different. Therefore, although the proportions of unclear responses would not offer an insight into the response tendencies of the groups, they would likely have a considerable influence on results of any comparisons between groups. For this reason, it was decided that non-responses and unclear responses would be excluded from analysis.

A second independent rater was asked to use the coding frames to categorize 40% of the responses. The sample was selected at random from the responses all participants. Overall agreement between the two raters was 87.5% across all questions. Inter-rater reliability analyses were conducted for responses to the each question using Kappa statistics. For the vignettes ending with aggressive outcomes, analyses of responses to the four outcome expectancy questions yielded the following results: Q1. Kappa=.740, (p<.001); Q2. Kappa=.755, (p<.001); Q3. Kappa=871, (p<.001); Q4. Kappa=.912, (p<.001). The analyses of responses to the four equivalent questions for the submissive outcome condition yielded the following results: Q1 Kappa=0.718, (p<0.001); Q2 Kappa=0.880, (p<0.001); Q3 Kappa=0.872, (p<0.001); Q4 Kappa=.742, (p<.001). Finally, analysis of responses to the predicted outcome question had the following results: Kappa=.853, (p<.001).

12.3.3 Results

Although directional hypotheses were proposed for comparisons between AGG and NAGG subgroups with IDs, two-tailed Chi Squares are presented. Technically, it is possible to conduct a one-tailed Chi Square test. However, given that the Chi Square Test is an intrinsically non-directional statistic, many statisticians advise against the use of one-tailed Chi Squares as it may inflate the risk of Type I error (Haig, Personal Communication). It was, therefore, concluded that comparisons would be two-tailed. To aid interpretation of the results of these comparisons, standard residuals have either been presented in the appropriate main table or included in an appendix.

To evaluate the risk of confounding influences from gender imbalances in the present sample, supplementary comparisons between males and females are reported for responses to the forced-choice questions. Given that there were only two females in both the ID and ND aggressive subgroups, it was not possible to conduct such comparisons between the aggressive and non-aggressive subgroups.

12.3.3.1 Forced Choice Questions

Results from the forced-choice questions are reported in Table 12.2. It shows the predicted outcomes of aggressive behaviour and submissive behaviour given by the aggressive and non-aggressive participants with IDs.

Table 12.2
ID Group: AGG & NAGG Subgroups (Forced Choice Questions)

COMPARISON:	AGGRESSIVE RESPONSE		SUBMISSIVE RESPONSE	
	AGG group	**NAGG Group**	**AGG group**	**NAGG Group**
Question 1: (predicted consequences) "Would something Good or Bad happen?"				
Good	5	17	50	96
(Std. Residuals)	(-0.9)	(0.6)	(0.2)	(-0.1)
Bad	70	133	25	54
(Std. Residuals)	(0.3)	(-0.2)	(-0.3)	(0.2)
	χ^2 (1)= 1.23; *p*=.267		χ^2 (1)= .156; *p*=.693	
Question 2: (predicted friends' appraisal) "Would they think you were strong or weak?"				
Strong	33	65	44	81
(Std. Residuals)	(0.1)	(0.0)	(0.4)	(-0.3)
Weak	42	84	31	69
(Std. Residuals)	(-0.1)	(0.0)	(-0.4)	(0.3)
	χ^2 (1)= .01; *p*=.924		χ^2 (1)= .441; *p*=.507	
Question 3: (predicted parental appraisal) "Would they think you were strong or weak?"				
Strong	27	39	49	100
(Std. Residuals)	(1.1)	(-0.8)	(0.0)	(0.0)
Weak	46	108	21	42
(Std. Residuals)	(-0.7)	(0.5)	(0.0)	(0.0)
	χ^2 (1)=2.54; *p*=.111		χ^2 (1)= .04; *p*=.95	
Question 4: (predicted affective outcome) "Would doing this make you feel good or bad?"				
Positive	21	47	47	97
(Std. Residuals)	(-0.4)	(0.2)	(-0.1)	(0.1)
Negative	54	103	28	53
(Std. Residuals)	(0.2)	(-0.2)	(0.2)	(-0.1)
	χ^2 (1)= .263; *p*=.608		χ^2 (1)= .868; *p*=.768	

i) VIGNETTES ENDING WITH AGGRESSIVE RESPONSES

Although it was predicted that the AGG group would anticipate a greater proportion of positive outcomes from responding aggressively to provocation than the NAGG group, no significant differences were found between the two groups (See Table 12.2).

ii) VIGNETTES ENDING WITH SUBMISSIVE RESPONSES

Similarly, it was predicted that the AGG group would anticipate proportionally fewer positive outcomes from responding aggressively to provocation than the NAGG group.

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Again, no evidence was found of any differences between aggressive and non-aggressive people with IDs (Table 12.2).[10]

12.3.3.2 Open-Ended Questions

Although no differences were found in the direction of the groups' predicted outcomes (i.e. positive or negative), it was still possible that differences would emerge from the open-ended answers. Coded responses to the four open-ended questions, regarding outcome expectancy, are illustrated below in Table 12.3 along with participants' own predicted responses:

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[10] It is worth noting that for both aggressive and submissive conditions, results of all four comparisons would remain non-significant if one-way Chi Square comparisons had been conducted.[10]

Table 12.3
ID Group: AGG & NAGG Subgroups (Open Ended Questions)

AGGRESSIVE ENDINGS			SUBMISSIVE ENDINGS		
	AGG Group	**NAGG Group**		**AGG Group**	**NAGG Group**

Question 1: (predicted consequences) "What do you think would happen after this?"

AGGRESSIVE ENDINGS			SUBMISSIVE ENDINGS		
Negative Responses			**Negative Responses**		
Conflict (now or future)/aggression	59	92	Conflict/aggression	8	40
Told off/punished	5	17	Not right/looks weak	4	0
			(*Non-specific negative &		
Not right/harm to others	5	15	neg.emotion)	6	7
(Non-specific Negative)	2	1	**Positive Responses**		
Positive Responses			Resolved/adaptive	22	49
*positive	1	10	Right	4	2
			(Non-specific Positive)	9	6
(Uncoded Responses)	3	5	(Uncoded Responses)	22	46
	χ^2 (4)= 8.0; *p*=.091		****SIG.DIF.***** χ^2 (5)= 22.8; p<.001		

*Question 2: (predicted friends' appraisal) "When you ***, what would you're friends think of you?"*

AGGRESSIVE ENDINGS			SUBMISSIVE ENDINGS		
Negative Responses			**Negative Responses**		
Conflict/trouble/punishment/harm	4	7	Ought to React	12	39
Not right/pointless	14	27	Weak/mocked	10	21
Neg appraisal of P	1	22	(Non-specific Negative)	0	2
(Non-specific Negative)	10	18			
Positive Responses			**Positive Responses**		
Right/ought to)	12	28	Right/nice/kind	6	8
Appraisal of P(Brave/strong/proud)	5	8	Avoid trouble/adaptive	6	14
(Non-specific Positive)	10	11	(Non-specific Positive)	21	28
(Uncoded Responses)	19	29	(Uncoded Responses)	20	38
	χ^2 (6)= 11.2; *p*=.083			χ^2 (5)= 5.92; *p*=.314	

*Question 3: (predicted parental appraisal) "When you ***, what would you're parents' think of you?"*

AGGRESSIVE ENDINGS			SUBMISSIVE ENDINGS		
Negative Responses			**Negative Responses**		
Risk of trouble/punishment/hurt	6	10	Ought to React	11	27
Behaviour wrong/pointless	8	25	Weak/mocked	7	7
Neg appraisal of P	17	33	(Non-specific Negative)	1	4
(Non-specific Negative)	17	22			
Positive Responses			**Positive Responses**		
Correct action (Right/ought to)	8	16	Right/nice/kind	6	11
Appraisal of P(Brave/strong/proud)	2	1	Avoid trouble/adaptive	5	26
(Non-specific Positive)	5	10	Emotion	4	13
			(Non-specific Positive)	16	26
(Uncoded Responses)	*12*	*33*	(Uncoded Responses)	25	36
	χ^2 (6)= 4.38; *p*=.625			χ^2 (6)= 7.55; *p*=.273	

Question 4: (predicted affective outcome) "How would doing this make you feel about yourself?"

AGGRESSIVE ENDINGS			SUBMISSIVE ENDINGS		
Negative Responses			**Negative Responses**		
Feeling about behaviour	33	52	Feeling about behaviour	16	40
Concern for self (sad, fear)	10	13	Concern for self/impression	8	20
Concern about impression	3	10	(Non-specific Negative)	1	3
(Non-specific Negative)	5	12	**Positive Responses**		
Positive Responses			Avoid trouble	7	7
*Positive	15	40	Right,nice,kind,happy	4	16
			(Non-specific Positive)	21	44
(Uncoded Responses)	9	23	(Uncoded Responses)	18	20
	χ^2 (4)= 3.75; *p*=.441			χ^2 (5)= 3.86; *p*=.570	

Question 5: (predicted own response) "What would you do if this happened to you?"

	AGG Group	NAGG Group
Phys Agg	14	6
Verbal Ag/Provoke	18	20
Passive	26	56
Tell Someone	4	10
Assertive	13	49
Unclear/other	0	9
**** χ^2 (5)= 24.5; p<.001		

****p>.05 *Categories collapsed due to low number of responses.
NOTE: Counts of uncoded responses are reported in the table but were not included in Chi Square comparisons.

i) VIGNETTES ENDING WITH AGGRESSIVE RESPONSES

Approximately 18% of the NAGG groups' predicted friends' views were negative appraisals of the participant, while the AGG group made only one such prediction. However, no significant differences in the expected outcomes of aggression were found between the AGG and NAGG groups (See Table 12.3). The large majority of participants in both groups predicted that conflict or further aggression would ensue from responding aggressively to provocation. Responses to Questions 2, 3 and 4 were somewhat more evenly spread across categories.

ii) VIGNETTES ENDING WITH SUBMISSIVE RESPONSES

Table 12.3 illustrates that the AGG and NAGG groups predicted consequences of submissive behaviour were significantly different (χ^2 (5) = 22.8; *p*<.001). Standardised residuals indicate that the most notable group difference was that 38% of the NAGG group's predicted outcomes were of conflict or aggression but only 15% of the AGG group's predicted outcomes were of this type of outcome (see Appendix L for table of standardised residuals). Large and comparable proportions of each group reported that submissive behaviour would resolve the situations of conflict. There were no significant differences found for responses to the other three questions (all p>0.05).

iii) PREDICTED OWN RESPONSE

Table 12.3 shows that the predicted responses to conflict of the AGG group were significantly different to those of the NAGG group (χ^2 (5)= 24.5; *p*<.001). The standardised residuals suggest that the greatest amount of variance was explained by the relatively high number of physically aggressive responses proposed by the AGG group in comparison to the NAGG group (see Appendix L for standardised residuals). The non-aggressive group appeared to offer more assertive responses than the AGG group but a similar number of passive responses.

12.3.3.3 Participants Without IDs

In order to examine whether these findings reflect the wider population of young adults or are specific to young people with IDs, comparisons were repeated between aggressive and non-aggressive individuals without IDs.

i) FORCED CHOICE QUESTIONS: Unlike the comparisons between participants with IDs, significant differences were found between the predicted outcomes of aggression by the AGG and NAGG subgroups without IDs (see Table 12.4 below).

Table 12.4
ND Group: AGG & NAGG Subgroups (Forced Choice Questions)

COMPARISON:	AGGRESSIVE ENDINGS		SUBMISSIVE ENDINGS	
	AGG group	NAGG Group	AGG group	NAGG Group
Question 1: (predicted consequences) "Would something Good or Bad happen?"				
Good	27	15	39	112
(Std. Residuals)	(3.5)	(-2.5)	(-1.6)	(1.1)
Bad	53	145	41	48
(Std. Residuals)	(-1.6)	(1.1)	(2.1)	(-1.5)
	**** χ^2 (1)= 21.9; *p*=<.001		**** χ^2 (1)= 10.3; *p*=.001	
Question 2: (predicted friends' appraisal) "Would they think you were strong or weak?"				
Strong	56	74	28	67
(Std. Residuals)	(1.9)	(-1.4)	(-0.7)	(0.5)
Weak	24	86	52	93
(Std. Residuals)	(-2.1)	(1.5)	(0.5)	(-0.4)
	**** χ^2 (1)= 12.1; *p*<.001		χ^2 (1)= 1.05; *p*=.305	
Question 3: (predicted parental appraisal) "Would they think you were strong or weak?"				
Strong	35	39	38	107
(Std. Residuals)	(2.3)	(-1.6)	(-1.2)	(0.8)
Weak	36	112	31	42
(Std. Residuals)	(-1.6)	(1.1)	(1.6)	(-1.1)
	**** χ^2 (1)= 12.0; *p*=.001		**** χ^2 (1)= 5.9; *p*=.015	
Question 4: (predicted affective outcome) "Would doing this make you feel good or bad?"				
Positive	44	52	29	68
(Std. Residuals)	(2.1)	(-1.5)	(-0.6)	(0.4)
Negative	36	108	51	92
(Std. Residuals)	(-1.7)	(1.2)	(0.5)	(-0.3)
	**** χ^2 (1)= 11.25; *p*=.001		χ^2 (1)= 0.865; *p*=.352	
*****p*>.05				

The AGG group predicted significantly more positive outcomes from aggression than the NAGG for each of the four forced-choice questions (χ^2 (1)= 21.9, *p*<.001; χ^2 (1)= 12.1, *p*<.001; χ^2 (1)= 11.97, *p*=.001; χ^2 (1)= 11.25, *p*=.001 respectively). Again, in contrast to the comparisons between participants with IDs, subgroup differences were also found in the predicted outcomes of submissive behaviour. Specifically, the AGG group predicted that submissive behaviour would result in more negative consequences and parental

appraisal (χ^2 (1)= 10.3; *p*=.001; χ^2 (1)= 5.9; *p*=.015 respectively). No such differences were found in overall consequences or peer appraisals (χ^2 (1)= 1.05; *p*=.305; χ^2 (1)= 0.865; *p*=.352 respectively).

ii) OPEN-ENDED QUESTIONS: Results from the open-ended questions also differed from those of the participants with IDs (see Table 12.5 below).

Table 12.5
ND Group: AGG & NAGG Subgroups (Open Ended Questions)

AGGRESSIVE ENDINGS	AGG Group	NAGG Group	SUBMISSIVE ENDINGS	AGG Group	NAGG Group
Question 1: (predicted consequences) "What do you think would happen after this?"					
Negative Responses			**Negative Responses**		
Conflict (now or future)/aggression	43	120	Conflict/aggression	23	41
Told off/punished	14	8	not right/looks weak	14	4
			(*Non-specific negative &		
Not right/harm to others	0	15	negative emotion)	5	4
(Non-specific Negative)	3	3	**Positive Responses**		
Positive Responses			Resolved/adaptive	21	70
*Positive	18	13	Right	2	13
			(Non-specific Positive)	1	12
(Uncoded Responses)	2	1	(Uncoded Responses)	13	16
	**** χ^2 (4)=30.9; *p*<.001			**** χ^2 (5)=29.6; *p*<.001	
*Question 2: (predicted friends' appraisal) "When you ***, what would you're friends think of you?"*					
Negative Responses			**Negative Responses**		
Not right/pointless	11	22	Ought to React	13	38
Neg appraisal of P	6	28	Weak/mocked	28	48
(*Non-specific Negative &					
Conflict/punishment)	5	14	(Non-specific Negative)	1	6
Positive Responses					
Right/ought to)	13	28	**Positive Responses**		
Appraisal of P(Brave/strong/proud)	7	12	right/nice/kind	6	22
(Non-specific Positive)	21	21	avoid trouble/adaptive	6	11
			(Non-specific Positive)	8	26
(Uncoded Responses)	17	35	(Uncoded Responses)	18	9
	χ^2 (5)=9.56; *p*=.089			χ^2 (5)=4.9; *p*=.428	
*Question 3: (predicted parental appraisal) "When you ***, what would you're parents' think of you?"*					
Negative Responses			**Negative Responses**		
Behaviour wrong/pointless	6	37	Ought to React	28	27
Neg appraisal of P	18	50	Weak/mocked	4	11
(*Non-specific Negative &					
conflict/punishment)	9	14	(Non-specific Negative)	0	6
Positive Responses			**Positive Responses**		
Correct action (Right/ought to)	10	15	right/nice/kind	7	37
Appraisal of P(Brave/strong/proud)	3	13	avoid trouble/adaptive	5	20
(Non-specific Positive)	12	8	emotion	6	6
			(Non-specific Positive)	14	36
(Uncoded Responses)	22	23	(Uncoded Responses)	16	17
	**** χ^2 (5)=17.4; *p*=.004			**** χ^2 (6)=21.4; *p*=.002	
Question 4: (predicted affective outcome) "How would doing this make you feel about yourself?"					
Negative Responses			**Negative Responses**		
Feeling about behaviour	23	69	Feeling about behaviour	17	38
Concern for self	1	8	Concern for self	6	8
Bad about impression	7	20	Bad about impression	23	37
Other negative	5	12	(Non-specific Negative)	5	11
Positive Responses			**Positive Responses**		
Proud/Happy	3	11	Avoid trouble	2	22
Justified	5	14	Right,nice,kind,happy	5	4
(Non-specific Positive)	28	18	(Non-specific Positive)	17	32
(Uncoded Responses)	8	8	(Uncoded Responses)	5	8
	**** χ^2 (6)=23; *p*=.001			χ^2 (6)=10.3; *p*=.114	
Question 5: (predicted own response) "What would you do if this happened to you?"					
Phys Agg	23	15			
Verbal Ag/Provoke	28	54			
Passive	14	62			
Assertive	12	27			
Unclear/other	3	2			
	**** χ^2 (4)=22; *p*<.001				

****p>.05 *Categories collapsed due to low number of responses.

The AGG and NAGG groups predicted different consequences from aggression (χ^2 (4)=34.2; p<.001). While the NAGG group predicted negative outcomes due to aggression being "wrong" or potentially harming someone, no AGG participants predicted such outcomes. Significant differences were also found in predicted parental appraisal of aggression (χ^2 (5)=17.4; p=.004). Specifically, the NAGG group were more likely to predict that their parents would appraise aggression as being wrong or pointless. Finally, the groups predicted different emotional outcomes as a result of aggression (χ^2 (6)=23; p=.001). The NAGG group predicted feeling concern about what people would think about them if they were aggressive.

Group differences were also found in the predicted outcomes of submissive behaviour (see Table 12.5 above). As with the participants with IDs, the AGG group predicted significantly different consequences from those not identified as having problems with aggression (χ^2 (5)=29.6; p<.001). For the participants without IDs, the NAGG group seemed to be more likely to expect submissive behaviour to resolve the provocative scenes depicted in the vignettes. There were also significant differences between predicted parental appraisal of the AGG and NAGG groups (χ^2 (6)=21.4; p<.002). Most strikingly, the NAGG group displayed a tendency to predict that their parents would view submissive response to provocation as 'right' or 'nice'. The NAGG group also appeared to be more likely to predict that their parents would think submissive behaviour would avoid conflict.

PREDICTED OWN RESPONSE: As with the participants with IDs, significant differences were found in the anticipated responses of the two groups (χ^2 (4)=22; p=<.001). The NAGG group gave proportionally more passive responses and fewer physically aggressive responses than the AGG group. However, there was no obvious difference between the proportions of assertive or verbally aggressive responses predicted by the groups.

12.3.3.4 Gender Comparisons

In order to evaluate the potentially confounding influence of gender imbalances between groups, the responses to forced-choice questions by males and females in each group were compared. For participants with IDs, no gender differences were found for the submission condition (Q1: χ^2 (1)=0.938, p=.333; Q2: χ^2 (1)=.655, p=.418; Q3: χ^2 (1)=.442, p=.506;

Q4: χ^2 (1)=3.09, p=.079), aggression conditions (Q1: χ^2 (1)=.05, p=.946; Q2: χ^2 (1)=.069, p=.792; Q3: χ^2 (1)= .368, p=.848; Q4: χ^2 (1)=1.04; p=.308) or in participants' predicted own response (χ^2 (3)=2.11, p=.549).

There were also no differences between males and females without IDs for submissive conditions or in predicted own response (Q1: χ^2 (1)=.805, p=.370; Q2: χ^2 (1)=1.29, p=.525; Q3: χ^2 (1)=1.23, p=.267; Q4: χ^2 (1)=.449, p=.503; Q5: χ^2 (3)=.796, p=.851). However, males without IDs were found to predict more positive consequences from aggression and more peer approval (χ^2 (1)=3.99, p=.046; χ^2 (1)=6.34, p=.012 respectively). Significant differences were not found for parental appraisal or predicted affect (χ^2 (1)=3.76, p=.052; Q4: χ^2 (1)=3.41, p=.065 respectively).

12.4 Study 4. Predicted Outcomes of Aggressive and Submissive Behaviour
DISCUSSION

12.4.1 Interpretive Summary

12.4.1.1 Predicted Outcomes of AGG and NAGG Groups with IDs

Participants with IDs and problems of aggression did not expect more positive outcomes from aggressive behaviour than their non-aggressive peers. Similarly, the groups did not differ in their predicted outcomes of submissive behaviour. These findings were contrary to the Study's hypotheses and failed to replicate the findings of previous studies with adult samples of a wider age-range (Pert & Jahoda, 2008; Kirk et al, 2008). There was, however, a difference in the groups' responses to the open-ended questions where, surprisingly, the aggressive participants anticipated submissive behaviour to result in less conflict and aggression than the non-aggressive participants. This was in contrast with trends observed by Pert et al (2008) where more non-aggressive participants predicted that submissive behaviour would reduce hostility in others.

This finding could be viewed as evidence that there are differences between the aggressive and non-aggressive groups in their expectations of submissive behaviour. However, it is

equally possible that this anomalous finding was a result of a methodological issue with this question. Unfortunately, a particularly high proportion of the aggressive group's responses to this particular open-ended question could not be coded (29.3%). As a likely consequence of this, while 66.6% of the AGG group's responses to the corresponding forced-choice question were positive, only 33.9% of their open-ended answers were positive. This is a strong indication that the data for this question may not be representative of the views of this group. Given this limitation and how counter-intuitive the finding seems in the context of existing research, it should be interpreted with caution.

While there was little clear evidence of differences between the subgroups with IDs, the aggressive participants without IDs were found to predict significantly more positive consequences from aggression for all four outcomes. Similarly, they predicted significantly more negative outcomes from submissive behaviour for three of the four questions. One possible implication of this is that while predicted outcomes of different response options contribute to aggressive behaviour in young adults without IDs, such factors are less important for people with IDs until later in adulthood. In previous research, factor analyses have shown that the factors associated with the 'Decision Making' stage of SIP, such as outcome expectancy, are not necessary to explain aggression in children with IDs (van Nieuwenjuizen et al 2006). Arguably, the present findings might indicate that decision making factors may not become important until after late adolescence giving further evidence that the cognitive tendencies associated with aggression in people with IDs may change or develop through the lifespan.

However, this interpretation should be considered with a degree of caution. Faced with questions about provocation and aggression, some aggressive participants might have felt that their own behaviour was under scrutiny and, consequently, felt compelled to give socially desirable answers rather than their actual views. Such an effect would most likely have been greater in people with IDs who have been shown to be more prone to acquiescence (Finlay & Lyons, 2002). This may explain why significant differences were only found between participants without IDs

12.4.1.2 Predicted Outcomes of AGG and NAGG Groups Without IDs

As well as having different expectations about how positive the outcomes of aggressive and submissive behaviour would be, groups without IDs also differed in their responses to the open-ended questions. Non-aggressive participants were more likely to show concern that aggression was wrong or could harm somebody and were also more likely to expect their parents to view aggression as wrong or pointless. Similarly, the non-aggressive participants were more likely to expect submissive behaviour to resolve conflict and for their parents to view such behaviour as 'right' or 'good'. These results might suggest that a key difference between the groups is that non-aggressive individuals were more concerned with the moral acceptability of aggression and submission.

The non-aggressive participants without IDs were also more likely to expect to feel bad about how others would view them if they were aggressive. Given that they also predicted less parental approval of aggression, in both the open-ended and forced-choice questions, it appears that perceived parental values about how to deal with provocation may remain important in aggression for non-aggressive adolescents. Interestingly, this study's findings provide more evidence for parental influences on aggression in non-disabled young people than peer influences. This is perhaps surprising in that peer influences are often identified as increasingly influential factors in aggression during adolescence (Pettit, 1997; Cairns & Cairns, 1994).

12.4.1.3 Predicted Own Responses

As might be anticipated, the participants with IDs and problems of aggression predicted that they would give more aggressive responses, particularly of a physically aggressive nature, than the non-aggressive participants (see Table 12.3 on p.214). Perhaps more interestingly, the non-aggressive participants appeared to give more assertive responses but a similar number of passive responses. These findings may indicate that non-aggressive people with IDs are not simply more passive in how they deal with provocation but are more likely to deal with provocation in a willful but non-aggressive manner.

For the non-disabled group, aggressive participants were also found to report more aggressive responses. However, in contrast to the ID group, the aggressive participants

without IDs were found to report fewer passive responses but the same number of assertive responses. This is in keeping with the finding that aggressive individuals without IDs predicted more negative outcomes from submissive (passive) behaviour than the non-aggressive group, a trend not mirrored by participants with IDs.

12.4.2 Limitations of the Study

As explained in the discussion for Study 2, there were socio-demographic differences between groups that may have had an influence on the comparisons between groups (see p.157). As these issues apply to Studies 2, 3 and 4, they are discussed in some detail in the general discussion at the end of the present thesis.

One specific concern was of the impact of gender imbalances between groups. The effects of these imbalances are evaluated for each of the studies by conducting comparisons between male and female participants for each main measure in each study. While no gender differences were found for the group with IDs, males without IDs were found to predict more positive consequences and peer appraisal as a result of aggression than females. Therefore, it must be conceded that the marked gender imbalance between the aggressive and non-aggressive subgroups without IDs could have influenced the significant differences in predicted outcome and peer appraisal observed between these subgroups.

Responses to the open-ended questions were recorded by hand by the researcher during interviews. It is possible that audio recordings of interviews may have produced richer data and, consequently, enabled a more nuanced comparison of the groups' beliefs. It is likely that this would have also reduced the number of uncodable responses and would thereby have given a more representative account of the sample's views.

For each forced-choice and open-ended question, responses regarding each of the five vignettes were collapsed. As such, each participant contributed five responses to the data analysed for each question. Responses to five different scenarios were analysed so that findings would be generalisable to a wider range of common conflict experiences, rather than just one specific scenario. However, it might be argued that the data were not

independently observed and that, consequently, chi-square comparisons were not the most appropriate statistical test to use.

The outcome expectancy task used in the present study included a considerably greater number of vignettes as well as more questions than those used previously with people with IDs (Pert & Jahoda, 2008; Kirk et al, 2008). It should be acknowledged that the attentional demands put on participants in the present sample was likely to have been greater than in previous studies. However, the inclusion of more scenarios was a conscious decision on the basis that including a number of different forms of provocation would better represent the varied experiences of people in this group. Also, unlike in previous studies, the outcome expectancy task was the only measure completed by participants in that given session.

Another effect of using a larger number of provocative scenarios than other studies is that the aims of the task may have been more transparent to participants. This could have increased the risk of participants giving socially desirable answers. One might expect this risk to be higher for individuals that identify themselves as being aggressive as they may be more likely to feel uncomfortable talking about their views on aggression.

12.4.3 Implications and Future Research

This study found compelling evidence that predicted outcomes of submissive and aggressive behaviour have an influence on aggression in non-disable young people. To the knowledge of the author, this is the first study to find evidence that beliefs about submissive behaviour have an influence on aggression in people without IDs. Researchers investigating SIP in aggressive people without IDs may wish to explore this relationship further and, in time, incorporate predicted outcomes of submissive behaviour into future psychosocial models of aggression.

The study failed to identify similar effects for people with IDs at this developmental stage. Future studies might seek to evaluate whether there are age related differences in the role of outcome expectancy in aggression by comparing the predicted outcomes of young adults with a group of older adults with IDs.

The fact that significant differences were found between groups without IDs for responses to several of the open-ended questions suggests that the relationship between predicted outcomes and aggressive behaviour might be more subtle than simply the direction (i.e. a 'good' or 'bad') of the expectations. For example, when it comes to deciding whether or not to act aggressively, some types of 'negative' expectations, such as being punished, might be more of a deterrent than others. Future research might choose to look at the relative importance of different categories of negative and positive outcomes to aggressive and non-aggressive people.

The five provocative scenarios used in the outcome expectancy task have been developed to represent salient features of conflict for young adults with IDs. As well as providing a useful research measure, the task could be adapted to serve a clinical purpose. Aggressive individuals offered more aggressive responses to the vignettes. Consequently, the vignettes could provide an initial assessment of the aggressiveness of young adult patients with IDs. Whether changes in a patient's responses to the vignettes over the time could be used to chart treatment change over time is an empirical question for a future study.

12.4.4. Conclusion

Predicted outcomes of submissive and aggressive behaviours were not found to differ significantly between aggressive and non-aggressive young people with IDs. This was in stark contrast to the non-disabled participants where aggressive participants viewed aggression more positively, submissive behaviour more negatively and seemed to demonstrated less concern with the moral acceptability of aggression. Although the primary focus of the present study was the participants with IDs, it should be acknowledged that these findings offer strong evidence that beliefs about the consequences of different responses to provocation might contribute to aggressiveness in young adults as predicted by the Social Information Processing Model (Crick and Dodge, 1994).

Also, the study found that anticipated parental appraisal may have an influence on aggression in non-disabled young people but failed to find similar evidence of the influence of anticipated peer appraisal. To the knowledge of the author, this is the first time that parental appraisal has been included in a study exploring predicted outcomes and aggression and this novel finding is likely deserving of further research.

Results also indicate that rather than aggressive individuals with IDs holding negative beliefs about submissive responses to provocation, they are, for some reason, more disinclined to consider assertive responses. Theoretically, it might be argued that aggressive individuals are less likely to respond assertively because such responses may be viewed as more difficult to enact than aggressive or passive responses. Arguably, assertive responses to conflict typically require more self-control, social awareness and communicative competence than passive or aggressive alternatives. It is possible that there are differences in some of these competencies between aggressive and non-aggressive young people with IDs. What is perhaps more likely is that non-aggressive individuals have more self-efficacy with respect to assertive behaviours. Of course, it is one thing for participants to report that they would respond assertively and for them to actually do so. For this reason, further research would be required to clarify whether these inferences are accurate.

Chapter 13 General Discussion

13.1 Introduction

The intention of this thesis was to further the understanding of how psychosocial factors contribute to frequent aggression in young adults with intellectual disabilities (IDs). In the preceding chapters, the findings of four research studies, each addressing distinct aspects of aggression, have been summarised and discussed individually. The present chapter will consider the implications of these findings in the context of existing theory and evidence and, thereby, attempt to present an account of frequent aggression in young adults with IDs. This will be followed by a discussion of possible implications of these findings and a critical evaluation of the research. Finally, conclusions will be drawn from the presented research.

13.2 Theoretical and Research Context of Thesis

In order to give a context to the four research studies, the theoretical background and existing research in this area will be summarised briefly. A significant minority of adults with IDs display frequent aggressive behaviour (Tyrer et al, 2006). Such behaviour typically results in an array of problems for the individual and those around them (Gardener & Moffat, 1990; Bruininks et al, 1994). Historically, frequent aggression in this group has been viewed as a direct consequence of certain cognitive deficits inherent to IDs (Gardener & Moffat, 1990). However, it has become apparent that problems of aggression in people with IDs are rooted in a far wider range of factors, much as they are for people without IDs (Jahoda et al, 2001). In particular, recent research has started to identify how cognitive and social factors might underlie aggression in this group (e.g. Jahoda et al, 2006b; Pert & Jahoda et al, 2008).

Following the precedent of recent research into the cognitive factors in aggression, the present thesis has been approached through a Social-Information Processing (SIP) framework (Lemerise & Arsenio, 2000). SIP explains social behaviours by the sequence of cognitive processes that occur between encountering a social stimulus and enacting a

response to it (Crick and Dodge, 1994; Huesmann, 1998; Lemerise and Arsenio, 2000). It proposes that processing tendencies and aptitudes are driven by the unique 'database' of acquired and inherent personal factors, such as social schemas and emotionality, that each individual carries into social situations. As the systematic review presented in Chapter 7 concluded, there are a diverse range of factors that contribute to problems of aggression in all sections of the population, including people with IDs. One advantage of the SIP model is that it offers a theoretical framework that links the various cognitive factors into one coherent model of aggression.

In the course of the systematic review, factors associated with several of these stages of SIP were found to have roles in aggression (Chapter 7, p.89). Firstly, the review found evidence that the way social information is encoded and interpreted can contribute to aggression. Two studies had found that aggressive adults with IDs may interpret the facial expressions of others more negatively while three other studies found aggressive participants to attribute more hostile intent in social situations (Matheson & Jahoda et al, 2005; Walz and Benson, 2005; Jahoda et al, 2006b; Pert & Jahoda, 2008; Basquill et al, 2004; Pert et al, 1999). There was further evidence that aggressive individuals may seek different outcomes from social situations and predict more favourable outcomes from aggressive responses (Pert & Jahoda, 2008; Kirk et al, 2008). It also appears that such individuals are less likely to respond assertively to social situations (Jahoda et al, 1998; Pert & Jahoda, 2008). Finally, the review also found some tentative evidence of aggressive people with IDs demonstrating specific deficits in emotional perception of contextual cues and in problem-solving skills (Matheson & Jahoda et al, 2005; Basquill et al, 2004).

In short, the review found ample evidence that social information processing does contribute to aggression in this group. However, it also acknowledged that further research of a high quality is required to develop a clear profile of what cognitive biases and tendencies are important to this group. One specific limitation of the reviewed studies was that they typically included participants of a wide range of ages. Evidence shows that the profile of SIP changes throughout the lifespan (Fontaine, et al 2009). For people with IDs, it might be expected that the experiences of adults at specific stages may be underrepresented in the literature.

On this basis, it was decided that the present thesis would concentrate on individuals at one such developmental stage. After consideration, the author concluded that there was particularly good reason to investigate aggression in people at the transition to adulthood.

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For one, evidence has shown that the profile of SIP in aggressive children with IDs might be different from the profile in adults (van Nieuwenhuijzen et al, 2006). Given that there has been no research focussing on people in transition from adolescence to adulthood, it is difficult to know whether patterns of SIP for aggressive young adults are more like those of younger adolescents or post-adolescent adults. Also, transition to adulthood could be a particularly damaging time for young people with IDs to have problems of aggression, in that many of the employment and education opportunities for people with IDs are limited to school-leavers (Caton & Kagan, 2007). It is therefore important that the underlying factors behind such problems are understood for people at this particular stage.

13.3 Theoretical Synthesis

The four studies of the thesis each investigated facets of aggression that had been identified as salient by the systematic review. To an extent, they can be seen as addressing consecutive stages of social information-processing (see Figure 13.1 below).
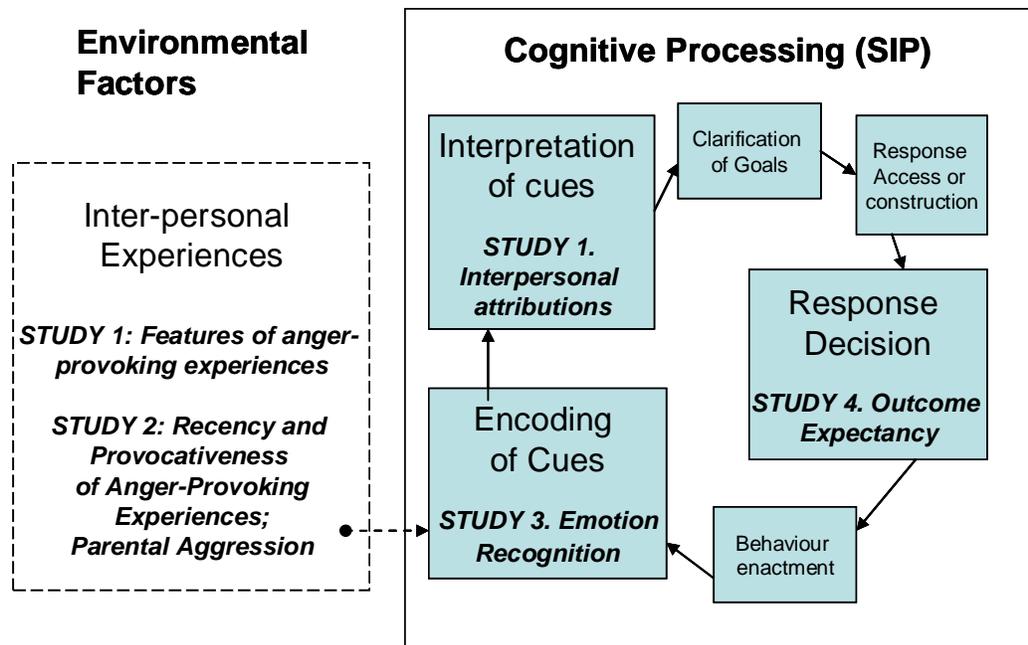
Figure 13.1 Schematic diagram of the potential factors of aggression addressed by each of the four studies (abbreviated SIP sequence adapted from Lemerise & Arsenio, 2000).

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Studies 1 and 2 examined young people with IDs' experiences of social conflict, seeking to identify contextual features of conflict that might typically provoke aggression. Using novel but intuitively meaningful stimuli, Study 3 sought to examine whether aggressive individuals differ in how they encode and interpret dynamic social cues. Lastly, a final study explored whether aggressive young people with IDs anticipate different outcomes from aggressive and submissive responses to provocation. The present section will explore how the findings of these studies contribute to an overall picture of aggression in young adults with IDs in the context of the Social Information Processing model (Lemerise & Arsenio, 2000). As such, this section has been structured in accordance with the sequential stages of the SIP model starting with 1) the social events that typically provoke conflict before discussing 2) the ways in which these events are interpreted, 3) views on possible responses to such events and, finally, 4) the typical responses to such events.

13.3.1 Contexts of Social Conflict

One recommendation of the systematic review was that research should examine which common experiences and environmental factors in the lives of people with IDs might contribute to problems of aggression. It is crucial to understand which kinds of social experiences provoke anger, a key mediating factor in aggression (Baker & Bramston, 1997; MacMahon et al, 2006a). Doing so also equates to identifying the social stimuli that trigger the patterns of processing that lead to aggression. The author noted that the limited existing studies into provocative experiences in this group might not represent the experiences of adolescents and younger adults. For example, existing evidence shows that conflict for adults with IDs typically involves other service-users (Baker & Bramston, 1997; MacMahon et al, 2006a). It is unclear whether this generalises to people who spend the majority of their time in school or college rather than in adult resource centres. Also, at a stage typified by increased interpersonal awareness and independence for most young people, it was predicted that young adults might hold age-specific views on interpersonal conflict (Shepperdson, 2001).

For this reason, the first two studies of the thesis sought to build a picture of what experiences typically provoke aggression in young adults with IDs. In Study 1, participants were invited to discuss a recent experience that made them feel angry through a semi-structured interview. The conflict experiences reported by participants were commonly of

verbal and physical aggression and tended to involve people they were not close to, predominately peers from outside their friendship group. This was in contrast to the non-disabled control group who generally chose to discuss more relational experiences of conflict with people closer to them.

This has interesting parallels with the findings of Study 2 where non-disabled participants reported encountering conflict with parents more recently than their peers with IDs. Furthermore, the ND group also reported higher levels of parental aggression and anger. Together, these findings appear to show that young people with IDs may encounter less conflict at home with their parents than their non-disabled peers. However, while both groups in Study 2 identified conflict with parents as having occurred more recently than other forms of conflict, they were also in agreement that conflict with parents was less provocative than other forms of conflict.

In Study 1, participants with IDs were also more likely to feel personally targeted during the incidents they discussed. Overall, the accounts of participants in that study imply that young people with IDs commonly encounter direct, aggressive victimization, often at the hands of their peers. Not surprisingly, participants in Study 2 seemed to identify scenarios developed to reflect these experiences as more provocative than the other categories of conflict. However, although more participants with IDs in Study 1 discussed experiencing aggression, it was the participants without IDs, in Study 2, who reported having more recent experiences of aggression.

Interestingly then, findings of Studies 1 and 2 do not imply that young people with IDs encounter more conflict than non-disabled peers. However, they do suggest that many young people with IDs report experiencing different forms of conflict from non-disabled peers, namely direct aggression from people outside their social circle.

Neither study identified any significant differences between the types of provocative experiences that aggressive and non-aggressive participants encountered. However, Study 2 did find that participants with problems of aggression had encountered social conflict, and physical aggression in particular, more recently than their non-aggressive peers. It could be that having more regular experiences of conflict and aggression might contribute to the aggressiveness of these individuals. This would be in keeping with existing evidence that experiences of aggression contribute to future aggressive behaviour (e.g. Brame et al, 2001).

While research into aggression in young people often concerns peer conflict, evidence suggests that parental aggression might contribute to the development of aggression in adolescents (Bradshaw & Garbarino, 2004; Williams et al, 2007). Studies 1 and 2 found descriptive evidence indicating that this could be the case in young people with IDs. While four of the twelve aggressive participants in Study 1 chose to discuss incidents of parental conflict, not one participant without problems of aggression discussed such incidents. In the second study, there was a similar trend, with aggressive participants tending to have encountered parental conflict more recently than the non-aggressive participants. It is possible that in addition to encountering more conflict and physical aggression, aggressive individuals with IDs are more likely to encounter conflict with their parents.

However, it could equally be that aggressive individuals may have been more likely to become involved in interpersonal conflict with others, including their parents, because of their own aggressive behaviour. As such, inferences of causal links between the experiences of participants and their aggressiveness should be considered with caution.

13.3.2 Encoding/Interpretation of Cues

In general, it seems that the most salient features of conflict for many young people with IDs are aggression, the involvement of strangers and a sense of being victimised by the experience. As would be expected, Study 2 also indicated that aggressive young people with IDs might encounter such scenarios more often than non-aggressive peers. From a SIP standpoint, the next stage in understanding aggression would be to examine whether there is anything about the way aggressive individuals encode the information present in such situations that might contribute to their behaviour. Given the emergence of these themes of direct aggression and victimization, it followed that such an investigation should focus on the encoding of hostile or 'angry' cues.

As summarised by the systematic review in Chapter 7, several studies have examined the possible roles of socio-emotional awareness in aggression, with varied results. It was observed that although much social meaning is communicated via dynamic cues, such as body language, no study had examined whether the encoding of dynamic social cues was linked to aggression (Clarke et al, 2005; Pollick et al, 2003). For this reason, the third

study sought to build on the work of previous studies into the encoding stage of SIP by using dynamic cues of people walking in ways that convey particular emotions.

The study did not find that aggressive individuals were any less accurate at identifying emotion than their non-aggressive peers or that they tended to identify more 'anger' more than other emotions. Similar results were obtained for the non-disabled group. As this study was the first to examine emotion recognition using dynamic cues, it is possible that future research may wish to revisit this area with a larger sample or an alternative set of stimuli. However, Study 3 becomes one of several to find no relationship between aggression and the ability to identify specific de-contextualised emotion cues (Matheson & Jahoda, 2006; Walz & Benson, 2005; Jahoda et al, 2006a; Woodcock & Rose, 2007).

In addition to finding no group difference in emotion recognition ability, participants with problems of aggression were no more likely to identify anger from dynamic cues. This is somewhat less in keeping with the evidence from studies with post-adolescent adults, where aggressive participants with IDs have often been found to be more likely to identify anger from static images of facial expressions (Walz and Benson, 2005; Matheson and Jahoda, 2005). This trend of aggressive individuals perceiving others as more angry or negative is mirrored at other stages of SIP, where aggressive individuals appear to be more likely to interpret others' behaviour as intentionally hostile (Jahoda et al, 2006b; Basquill et al, 2004; Pert et al, 1999).

In line with previous research using images of facial expressions, participants with IDs were found to be poorer at identifying affect than non-disabled participants (Zaja and Rojahn, 2008). It may be that, in addition to having difficulties identifying emotion from static facial expressions, people with IDs may have difficulties identifying other forms of emotional cues. However, as noted in the study's discussion section, both groups correctly identified emotion in over 60% of the clips and the actual difference in accuracy between the groups was as little as 8%. Therefore, while it can be said that young adults with IDs appear to be poorer at discerning emotion from the way people walk, it is less obvious whether this difference has any impact on their everyday functioning.

13.3.3. Response Evaluation

The first three studies of this thesis examined how particular kinds of social interactions, and the ways in which they are interpreted, might lead to aggression. However, even if an individual has interpreted an event as being hostile or threatening, there is still the opportunity for that person to choose to respond aggressively or otherwise. The SIP model implies that several processes typically occur in the wake of an event being interpreted and before a response is enacted. Driven by what they wish to achieve from the situation, the individual must generate possible responses to the situation, choose one of these options and then enact it.

Amongst other factors, this final decision making process will be mediated by the individual's views on what the outcomes of different responses options are likely to be. In adults with and without IDs, it has been shown that aggressive individuals might expect different outcomes from certain responses. Specifically, it appears that they may expect more positive outcomes from aggression and less positive outcomes from submissive responses (Fontaine et al, 2008; Pert et al, 2008; Kirk et al, 2008).

Recent research with non-disabled individuals has indicated that response evaluation may only become an important factor in aggression during adolescence (Lansford et al, 2006; Fontaine et al, 2009). Similarly, while there is evidence that response evaluation influences aggression in adults with IDs, a recent study found that it does not help explain aggression in children with IDs (Pert et al, 2008; Kirk et al, 2008; van Nieuwenhuijzen et al, 2006). However, no study has examined whether predicted outcomes of aggression have any influence on aggression in adolescents with IDs.

With a view to examining whether response evaluation influences aggression in young adults with IDs, the final study examined predicted outcomes of aggression and submissive responses to provocation. Specifically, there was an interest in predicted social appraisal of such behaviours. Research with non-disabled youths has shown peer appraisal to have a strong influence on decision making at this developmental stage (Cairns & Cairns, 1994). Other research exploring health-risking behaviour found that young people with IDs give more weight to the perceived values of their parents than their non-disabled peers do (Pownall et al, 2010). For this reason, this study also decided to examine predicted parental appraisal of aggression and submission. To the knowledge of the author, this was the first

study, including people with or without IDs, to specifically examine the role of predicted parental appraisal in aggression. It may also have been the first to examine beliefs about submissive behaviour of aggressive people without IDs.

Aggressive participants with IDs were not found to predict more positive outcomes from aggression or less positive outcomes from submission. Indeed, aggressive participants appear to have been less likely than non-aggressive participants to expect submissive behaviour to result in more conflict. This was in stark contrast to the non-disabled control groups where the aggressive subgroup predicted significantly more positive outcomes from aggression and less positive outcomes from submissive responses.

Findings did not suggest that the predicted outcomes of aggression and submissive responses to conflict contributes to aggression in people with IDs, at this stage in their lives. In the context of previous findings with children and post-adolescent adults, this might suggest that decision evaluation processes may not become an important factor in aggression in this group until later in adulthood. Interestingly, the results strongly suggest that, by the transition to adulthood, the response evaluation stage of SIP has become an important factor in aggression for people without IDs. Researchers have described this as the most cognitively sophisticated processing stage of SIP as it builds on previous SIP stages and is closely mediated by executive function and social schemas (Fontaine et al, 2008). On this basis, it is possible that these findings reflect a relative delay in the cognitive development of decision-making of people with IDs.

If the development of SIP follows an idiosyncratic trajectory for people with IDs, then it will be necessary for researchers to build a developmental account of SIP and aggression that is specific to people in this group. Although several longitudinal studies have examined the development of SIP in people without IDs, few have followed cohorts of aggressive and non-aggressive participants with IDs (Pettit et al, 2010; Fontaine et al, 2008; van Nieuwenhuijzen et al, 2006). Moreoever, a developmental delay would imply that for people with IDs, the relationships between SIP and aggression continue to develop into early adulthood. As such, future longitudinal studies in this area with participants with IDs may wish to continue to follow their samples into adulthood.

While the discrepancy between participants with and without IDs was striking, the inference that this reflects developmental differences should be viewed with caution. In fact, it is equally possible this finding stems from common challenges associated with

interviewing participants with IDs. Existing evidence suggests that people with IDs may be particularly likely to offer acquiescent or socially desirable responses to research questions (Finlay & Lyons, 2002). Several unexpected findings from this thesis indicate that some of the participants with IDs included in the thesis may have felt compelled to give such responses. Evidence suggests that parental opinions are particularly important to young people with IDs (Pownall et al, 2010). It might then have been expected that parental appraisal would have a pronounced influence on aggression in this group in particular. However, while it had a clear link to aggression in the non-disabled group, no differences in parental appraisal were found for the participants with IDs. Perhaps most compellingly, although people with IDs are found to be particularly vulnerable to parental abuse and aggression, the sample with IDs actually reported less parental aggression and less recent exposure to aggression in general (Strickler, 2001; Nabuzoka & Smith, 1993; Emerson, 2005).

It is perhaps telling that all of these unexpected findings pertain to the disclosure of potentially difficult or incriminating information. Faced with questions about provocation and aggression, some aggressive participants could have felt like the task was putting their own behaviour under scrutiny and, consequently, felt compelled to give socially desirable answers rather than their actual views. The likelihood that these findings were down to socially desirable responding is perhaps increased by the fact that the ID and ND groups were well matched for other potentially confounding factors such as social deprivation and history of aggression. In short, although these findings may well point to interesting differences in the development of SIP between people with and without IDs, it does seem quite possible that the findings may have been confounded.

13.3.4 Response Decision

Once an individual has interpreted the situation facing them, generated possible responses and considered the merits of each option, their final steps in the SIP model are to select and enact their response (Lemerise & Arsenio, 2000). Both Studies 1 and 2 recorded participants' reports of how they have responded or would respond to scenarios of conflict. Clearly, it would be expected that aggressive individuals would react more aggressively than non-aggressive individuals in a number of contexts. However, there is a finer level of detail to the response decision process that merits exploration. For example, it might be

predicted that non-aggressive people would be more likely to respond passively to provocation. Perhaps owing to the small quantity of data collected, no obvious group differences were observed for Study 1. However, Study 4 revealed some interesting group differences in respect to response decision.

As anticipated, aggressive participants in the final study predicted responding more aggressively than the non-aggressive participants. More surprisingly, the non-aggressive group gave more assertive responses but a similar number of passive responses to the aggressive group. In other words, the groups appeared to share similar views about when it is appropriate to give active (aggressive or assertive) rather than passive responses to provocation. This was in contrast to the comparisons between the non-disabled sub-groups where the aggressive participants gave fewer passive responses but a similar number of assertive responses to the non-aggressive group. In a sense this mirrors findings of the outcome expectancy task where the aggressive participants without IDs reported negative expectations of submissive behaviour while no such differences were found for the participants with IDs.

It appears that rather than holding negative beliefs about submissive responses to provocation, aggressive individuals with IDs are more disinclined to consider assertive responses. Arguably, assertive responses to conflict typically require more self-control, social awareness and communicative competence than passive or aggressive alternatives. It is possible that aggressive individuals were less likely to predict responding assertively because such responses were viewed as more difficult to enact than aggressive or passive responses. Interestingly, research with adolescents without IDs has already shown that reactive aggression may be related to higher self-efficacy in respect to enacting aggressive behaviour (Arsenio, 2009). In light of this and the findings of Study 4, it may be worth including questions about self-efficacy in future research into decision making processes in people with IDs.

13.4 Recommendations

The findings of the thesis have now been considered in the context of the SIP model. However, there are also a number of broader implications about how aggression is conceptualised theoretically and how it is approached in research. In this section, these recommendations will be considered along with implications for policy and clinical practice.

13.4.1 Implications for Theory and Future Research

13.4.1.1 Findings for Non-disabled Participants

This thesis was primarily concerned with sources of aggression in young adults with IDs, and included non-disabled groups as a way of showing whether findings were specific to people with IDs. However, several findings from Study 4 may have important implications for the understanding of aggression in the non-disabled population of young adults.

In contrast to the ID groups, striking differences were found between the aggressive and non-aggressive groups without IDs. Compared to non-aggressive participants, the aggressive group predicted that aggression would lead to more positive consequences, better parental and peer appraisal and to feeling better about themselves. They also appeared to be less concerned about whether aggression was 'wrong', whether their parent's thought it was 'wrong' or what others thought about them in general. These findings strongly suggest that young adults' beliefs about the consequences of aggression is related to how aggressively they behave. This is in line with findings of previous studies with children and adolescents (Lansford et al, 2006; Fontaine et al, 2006; Fontaine et al, 2010). To the knowledge of the author, this was the first study to find that aggressive people from the non-disabled population may predict more negative outcomes from submissive behaviour. Specifically, they predicted more negative consequences from and more negative parental appraisal of submissive behaviour.

In fact, the clarity of these findings might indicate that early adulthood may be a stage when outcome expectancy has a particularly pronounced role on aggression. This would fit with findings of developmental research which show that SIP mechanisms pertaining to

decision making become increasingly important factors in aggression from childhood to mid-teenage years (Fontaine et al, 2009). These mechanisms are thought to emerge as adolescents become increasingly skilled at evaluating different response options (Fontaine et al, 2010). The present findings might suggest that as cognitive processing skills continue to mature, into early adulthood, the importance of decision-making on SIP may also continue to develop. Previous longitudinal studies have typically examined how the relationships between SIP and aggression develop from childhood to mid-adolescence (e.g. Fontaine et al, 2010, Lansford et al, 2006). Given that this is the age range at which the lethality of aggression typically peaks, future research may wish to examine how these relationships continue to develop in to later adolescence and early adulthood (Arria et al, 1995).

Study 4 may also be the first study to show that expected parental appraisal of aggressive and submissive behaviour might contribute to aggression in young adults without IDs. This was a particularly interesting finding given that transition to adulthood is typically a stage where young people actively seek to differentiate themselves from the authority of their parents (Shepperdson, 2001). As such, research with adolescents has typically concentrated on the emerging influence of peer norms and appraisal on aggression and paid less attention to perceived views of parents (e.g. Lansford et al, 2006; Fontaine et al, 2010). However, the findings of Study 4 suggest that the perceived appraisal of parents is at least as important as that of peers. Perhaps even at a stage where many young people are outwardly 'rebelling' against the values of their parents, the views of their parents retain an important influence on their behaviour.

These findings would seem to suggest that future research into outcome expectancy should include questions regarding perceived parental beliefs. Moreover, in addition to examining predicted outcomes, future studies could consider the weight participants put on the beliefs of different people in their lives such as peers and parents. It would also be interesting for longitudinal studies to compare the relative influence of parental opinion with peer opinion as people pass through adolescence to adulthood.

13.4.1.2 Beyond Cognitive Processing

Considered collectively, the findings of the thesis have some interesting implications for future research of aggression in people with and without IDs. As mentioned in the previous section, Study 3 was one of many studies to find no evidence that difficulties identifying emotion contribute to aggression. This was found to be the case for participants with and without IDs. In themselves, these findings put further scrutiny on the deficit model of aggression which argues that problems of aggression in people with IDs is primarily rooted in cognitive impairments (Gardner & Moffat, 1990). What is more, when one considers these findings in the context of the other results of the thesis, an interesting pattern emerges.

The emotion recognition task, which failed to detect any difference between aggressive and non-aggressive participants, investigated impersonal, generic forms of processing. In contrast, the significant differences that were identified between aggressive and non-aggressive participants in this thesis either came from discussing personal experiences or from using theoretical social interactions. For example, the aggressive participants in Study 2 were more likely to encounter the sorts of social interactions that they found most angering. Also, in Study 4, aggressive and non-aggressive participants without IDs predicted very different outcomes from submissive and aggressive responses to provocative social interactions. These findings appear to indicate that the social context in which cognitive processing takes place may be crucial to understanding relationships between SIP and aggression.

Interestingly, this pattern seems to hold across the existing literature where studies that have successfully linked SIP to aggression have generally examined processing in the context of naturalistic social scenarios (e.g. Jahoda et al, 2006b; Fontaine et al, 2006). For example, studies that have found evidence of hostile attribution style and outcome expectancy have generally used vignettes where the individual has to imagine full social scenarios rather than isolated stimuli such as facial expressions (e.g. Basquill et al, 2004; Kirk et al, 2008). Moreover, studies frequently find that aggressive processing styles are only observed when participants are asked to imagine that they are taking part in the scenes (Jahoda et al, 2006b). Perhaps most tellingly, the only study that successfully links emotion recognition accuracy to aggression used a task with 'contextually rich' stimuli (pictures of emotion-typical scenes with various cues) rather than stimuli designed to isolate specific types of cues (facial expression, walking gait; Matheson et al, 2005). In

summary, the findings of the thesis, as well as those of previous research, indicate that the aspects of social cognition that mediate aggressive behaviour only occur in a broader social context.

This interpretation closely mirrors recent Systems Theory accounts of SIP and aggression, which stress that no cognitive process occurs in isolation (Fontaine, 2006; Fontaine et al 2008). Instead, the many internal factors involved in social cognition are inextricably linked. Moreover, these factors are in constant and reciprocal interaction, not only with each other, but with other factors in the immediate social context (e.g. an individual's facial expression), and with the internal psychological structures of the individual (e.g. social schemas). In the context of the present findings, this account highlights the need to understand which features of everyday experiences activate these processing styles. Studies 1 and 2 explored this area, finding that aggressive individuals with IDs reportedly encountered physical aggression and conflict more often than their non-aggressive peers. Future research should perhaps seek to clarify whether there are specific contextual factors, such as parental conflict, that might be particularly provocative to people with IDs. Moreover, research should also consider the mechanisms by which such experiences might influence specific online processing factors such as hostile attribution style.

13.4.1.3 Self-Concept and Aggression

From another perspective, this pattern of findings may have a more subtle implication. It appears that aggressive individuals only demonstrate characteristic styles of SIP when they are personally invested in social scenarios. In addition to highlighting the salience of these contextual factors, this points to the importance of understanding the underlying personal factors that would lead the individual to be invested in particular social scenarios. For example, it might be possible to ascertain that an individual is particularly likely to perceive hostility when a same-sex peer mentions their family while at school. However, the reasons why these particular contextual factors are salient to the individual remain wholly unclear. Without understanding how more latent, personal factors might influence online processing, there is a risk that psychosocial accounts of aggression might remain somewhat mechanistic.

Interestingly, findings from Study 4 may give an indication of what some key personal factors might be. This study strongly suggested that aggressive individuals without IDs

expect more positive outcomes from aggression (Lansford et al, 2006; Fontaine et al, 2008). A more novel finding of the study was that aggressive participants without IDs also predicted more negative consequences from and more negative parental appraisal of submissive behaviour. In line with this, aggressive participants predicted giving far fewer passive responses to aggression but a similar number of assertive responses. Together, these findings would seem to suggest that aggressive people not only see aggressive responses to conflict as more adaptive but find submissive alternatives to be particularly unappealing. From the perspective of SIP, this would also suggest that aggressive individuals are not only driven to be aggressive as a means of achieving certain ends but also as a way of avoiding undesirable outcomes (Kirk et al, 2008). It has been hypothesised that such an aversion to submissive behaviour might be rooted in a fear of losing social status or respect (Wilkinson, 2004; Kirk et al, 2008).

This interpretation supports the idea put forward by Jahoda et al (2001) that a crucial dimension absent from current SIP accounts of aggression might be self-beliefs. In addition to having an implicit and automatic view of one's self, it is thought that humans are compelled to construct a more deliberative view of themselves for others (Sandstrom et al, 2007; Jahoda et al, 2001). It may be expected that people who have fewer resources in their lives to bolster their self-esteem might be particularly reliant on social status to maintain a positive self-image (Wilkinson, 2004). In turn, such individuals might feel more threatened by the prospect of being perceived in a negative light by others. It has been argued that, for many individuals, aggression might be one of several ways by which to protect the self from such threats (Trower & Chadwick, 1995). For this reason, Jahoda et al (2001) recommended that in addition to mapping cognitive mechanisms and, indeed, the contextual factors that might activate them, future models of aggression should incorporate the underlying self-beliefs that might motivate aggressive behaviour.

Given that people with IDs are often ascribed low social status, it has been argued that they may be particularly susceptible to aggression as a means of ego-defence (Crocker et al, 1998; Kirk et al, 2008). However, the evidence of Study 4 suggests that this may also be the case for young people without IDs. One possible reason why this effect was observed in this sample might be that a large proportion of the sample was from relatively socially deprived backgrounds. By definition, individuals from more deprived backgrounds have less social capital to bolster their self-esteem which may leave some more vulnerable to perceived threats to social status (Wilkinson et al, 2004).

Furthermore, growing up in more socially deprived settings may also reinforce a preference for dominating social strategies over more egalitarian strategies (Wilkinson, 2004). It seems plausible that the apparent relationship between parental appraisal and aggression may be mediated by general sub-cultural norms that are more widespread in socially deprived groups (Wilkinson, 2004). This interpretation of Study 4's findings would seem to suggest that there may be important links between self-concept, social cognition and socio-demographic factors such as social deprivation that contribute to aggression. However, it remains for research to test this view by empirically exploring these theoretical relationships.

13.4.1.4 Socially Desirable Responses

Study 4 failed to find any evidence of differences in outcome expectancy between aggressive and non-aggressive people with IDs. However, the apparent reluctance of some participants with IDs to discuss their beliefs and experiences may further highlight the relationship between self and aggression. It might be expected that individuals who identify themselves as having socially undesirable traits, such as a problem with aggression, may be likely to feel more self-conscious about perceived attempts to expose this trait. For such individuals, even if the task successfully elicited styles of processing akin to those that occur during real social interactions, they might feel more conscious that the responses might reflect on them personally.

If these findings were indeed artefacts of acquiescence, it would suggest that far from being cognitively incapable of understanding the more complicated psychosocial questions in SIP research, some participants with IDs may have a particularly keen awareness of the potential implications of the revealing sensitive information. As service use is characterised by the sharing of information between professionals, it would make sense that respondents with IDs might feel less confident in the confidentiality of discussions with researchers. Also, with less functional independence in their lives, they may feel more vulnerable to being punished by authority figures for incriminating themselves or, indeed, others during interviews (Shepperdson, 1994).

Another interpretation of this would be that many people with IDs and problems of aggression feel a sense of shame about their behaviour. This would seem feasible given evidence that non-disabled individuals with problems of aggression can be prone to feeling

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shame (Tangney et al, 1996). If aggressive young people with IDs feel ashamed about being aggressive, this suggests an awareness that aggressive behaviour is morally wrong or a contravention of social rules. Although recent research with non-disabled people has begun to demonstrate the importance of socio-moral beliefs, this is yet to be examined in people with IDs (Arsenio et al, 2009; Fontaine et al, 2009; Erdley & Asher, 1998). These findings suggest that future research into decision making of aggressive people with IDs should explore response valuation as well as outcome expectancies of aggressive and submissive behaviour.

13.4.1.5 Methods

The apparent importance of the contextual triggers and underlying self-beliefs may have very important methodological implications for future research into aggression. For one, it appears that a participant's personal, and perhaps emotional, investment in the social stimuli used in SIP tasks may be a prerequisite for obtaining authentic accounts of processing tendencies that lead to aggression. It might also be important to ensure that the social scenarios, typically used as stimuli in such tasks, engage participants in a sufficiently naturalistic way. Some recent studies have sought to personalise social scenarios typically utilised in SIP tasks by ensuring that they reflect the experiences of the target population and by using self-referent narratives (Jahoda et al, 2006b). To make the scenes feel more realistic, studies have begun to use video based illustrations rather than photographs (Fontaine et al, 2009). Other studies have gone a step further by asking participants to respond to role-plays of social scenarios instead of vignettes (van Nieuwenhuijzen et al, 2005).

Many of the tasks exploring SIP of aggressive individuals use social stimuli or scenarios that are supposed to be provocative to the participant. For example, the outcome expectancy task of Study 4 was carefully developed to reflect angering social experiences of young people with IDs. Such tasks aim to elicit participants' cognitive and behavioural responses to such situations. However, an essential part of how real provocative experiences influence processing to lead to aggression is by arousing high levels of anger. For example, the emotional and physiological arousal of anger in itself is found to increase hostile attribution style and is thought to induce other styles of processing associated with aggression (MacMahon et al, 2006a; Lemerise & Arsenio, 2000). It follows that for

research methods to successfully tap into the key styles of SIP that lead to aggression, it is essential to elicit a genuine, emotional state of anger in participants.

For this reason, some have argued that it might be necessary to use additional techniques to induce a state of anger in participants. The task of arousing anger in participants is of course fraught with ethical and methodological obstacles. However, studies are beginning to show how anger might be aroused effectively and in an ethical manner in a research setting. Indeed, MacMahon et al (2006a) were the first to trial such a measure on a participant with IDs. They used actual experiences of the participant to induce anger and calmness. Crucially, they found that increasing their participant's anger increased their hostile attribution style. Although this novel technique would need to be developed and evaluated further, the mediation of anger arousal may prove integral to eliciting more authentic accounts of SIP from participants with IDs.

13.4.1.6 Self-Consciousness

It appears, then, that in order to obtain more authentic accounts of SIP, future studies should continue to find ways of making tasks as personal and realistic as possible. However, it could be argued that in particular cases, making tasks more personalised or involving could make some individuals feel that their behaviour or beliefs were under scrutiny. As discussed previously, it may be that such concerns may have led to socially desirable responses from some of the participants with IDs in the present thesis.

In order to prevent self-conscious responses, it is crucial that researchers working with people with IDs take care to build rapport with participants and assure them that their responses are confidential. Similarly, reminding participants that the researcher is interested in their beliefs and experiences and that there are no right answers might help prevent socially desirable responding. This said, although the author took these steps during each of the four studies, it appears that participants may have given socially desirable responses to tasks in Studies 2 and 4. Therefore, researchers in this area may need to explore additional ways of preventing participants from giving overly self-conscious responses.

One novel technique that could prove engaging to young adults with IDs might be a SIP task in the format of a computer-game. In particular, a role-playing game, where

participants, playing themselves, are immersed in a virtual environment where they must negotiate social scenarios with virtual people. One could easily envisage that a task using interactive scenarios with film based illustrations could provide sufficiently naturalistic to elicit more authentic processing than standard vignettes. Crucially, by being in the format of a computer-game, and requiring participants to respond to 'virtual people' rather than a researcher, such a task might diminish participants' concern about the implications of their responses. Thereby, the likelihood that participants would feel compelled to give socially desirable responses could be reduced. Potentially then, a role-play computer game task might provide a solution to both the problem of engaging participants in realistic processing and the problem of self-conscious responding.

Similar techniques have been used in education and have been used to study empathy in teachers (Tettegah et al, 2006). However, given that there is no precedent to using virtual-environment tasks to examine social cognition, it is difficult to anticipate its effectiveness. It is plausible that in using a 'game' style format, participants would not take their responses seriously or not approach the situations as they would in real life. In particular, participants that are used to playing computer games may also be accustomed to taking on alter-egos and may find themselves taking on the role of a fictitious character in the scenarios. Despite this caveat, and given the theoretical potential for solving two key methodological issues with examining SIP in adults with IDs, this method may be worth exploring in future research.

13.4.2. Implications for Clinical Practice and Policy

The studies in the present thesis used novel measures to examine potential factors in aggression of young adults with IDs that were relatively or wholly unexplored by previous research. As such, results should be seen predominately as informing future research into these areas. However, the findings of the thesis could have several direct implications for clinical practice.

Study 4 found very strong evidence that perceived parental appraisal of aggressive and submissive behaviour might contribute to aggression in young adults without IDs. Currently, there are a wide array of well evidenced family based therapies and parent-training programmes to treat aggression (e.g. Glick, 2006; Henggeler et al, 1999).

However, these are predominately implemented with children and younger adolescents. To an extent, the findings of Study 4 indicate that such interventions might also be effective interventions for aggression in individuals at the transition to adulthood.

While participants with IDs performed somewhat more poorly than their non-disabled peers on the emotion recognition task, no deficits were identified that were specific to individuals with problems of aggression. In light of observations made in the systematic review, this study is one of many that have failed to link cognitive deficits in socio-emotional understanding in this group (see Zaja & Rojahnn, 2008 for a published review). This would seem to draw into question the underlying theoretical argument for the application of emotional awareness training, a common component of interventions for aggression in this group (Taylor et al, 2002). Although several clinical trials have evaluated interventions for anger and aggression problems in people with IDs, several reviews of this literature have noted that little is known about which specific components of these intervention are most effective (e.g. Willner, 2007; Whitaker, 2001). As such, the paucity of evidence linking emotional understanding and aggression highlights the need for careful evaluative research of the individual components of such interventions.

In Scotland, recent mental health policy has stressed the importance of age-appropriateness in intervention and, elsewhere, the need to support people with IDs during transition periods (SE, 2008; SE, 2000). This may be particularly important where measuring SIP which is inherently contingent on the social situations that people are faced with. Unlike the majority of research measures for adults with IDs, some of the novel measures used in this thesis were developed specifically to reflect the experiences of young adults with IDs. As such, some may be adapted to serve a variety of useful functions in the clinical setting.

Study 1 found that young people with IDs frequently felt victimized by peers. This is congruent with existing research with post-adolescent adults (MacMahon et al, 2006b; Benson & Fuchs, 1999). It is also in keeping with evidence that young people with intellectual disabilities in full-time education, may be particularly likely to encounter bullying (Nabuzoka & Smith, 1993; Lunsky and Benson, 2001). These findings indicate that contingency-based training components of interventions for people with IDs and problems of aggression may wish to focus more on scenarios of victimization by unknown peers. The findings of Study 1 may also be of utility to teachers and other professionals working with young adults with IDs. The prevalence of victimization in college contexts

suggests that institutional anti-bullying programmes of secondary schools may also be of value in the college setting.

The vignette task used in Study 4 proved to be highly sensitive to differences in outcome expectancy of aggressive and non-aggressive young people without IDs. Although the vignettes used were designed to reflect the experiences of young people with IDs, they may prove particularly useful for assessing different aspects of SIP such as social goals, hostile intent style or response self-efficacy, in young people without IDs. The outcome expectancy task could be used as an initial assessment of the aggressiveness of young adult patients with IDs. Alternatively, they could be used to assess the progress of a patient being treated for problems of aggression. The measure could be completed with a patient in initial sessions and then repeated later in the intervention. Finally, the scenarios could be adapted to be used in role-plays during contingency based training sessions.

Although no differences were found in which scenarios were the most provocative, the scenario-rating task of Study 2 may still be of some utility. For example, in that it represents common experiences of young people with IDs, it could be used in initial sessions with young adults with problems of aggression as a 'menu' of example scenarios of social conflict, much like Novaco's Provocation Inventory (Novaco, 2003). Such a measure could help young adults IDs identify the most salient conflict experiences in their own lives. Similarly, the recency sub-task could be used as a measure of a client's day-to-day exposure to different forms of interpersonal conflict.

As discussed in previous sections, the fact that the outcome expectancy task did not detect differences between aggressive and non-aggressive individuals with IDs demonstrates that caution is required when tailoring research methods to the needs of people with IDs. It also highlights that similar caution should be shown when adapting contingency-based clinical measures, such as provocation inventories. It may be that more involved processes, such as role-plays, may provide more authentic accounts from patients than the measures using more hypothetical stimuli such as vignettes.

13.5 Limitations of the Thesis

Methodological shortcomings specific to each of the four studies are discussed in their corresponding discussion chapters. In the present section, the more pervasive issues and limitations of the thesis will be discussed in greater depth. This will also be an opportunity to explain the circumstances surrounding some of these issues and to reflect on key decisions made during the course of the doctorate.

13.5.1 Sample Sizes

In that the focus of the thesis was aggression in people with IDs, perhaps the most significant limitation was the number of participants with problems of aggression who were recruited. Study 1 was an exploratory study predominately seeking to compare the experiences of people with and without IDs, with the intention of conducting post hoc comparisons between aggressive and non-aggressive individuals in each group. In fact, the number of individuals with and without IDs included in Study 1 was actually in line with targets set before recruitment. However, even though there were a similar numbers of aggressive and non-aggressive individuals in the ID group, there was insufficient data to allow more than descriptive comparisons.

It could be argued that with the primary focus of the thesis being aggression, recruitment for Study 1 should have focused on including two groups of young people who have IDs with and without problems of aggression. This would have allowed for more powerful comparisons between these groups, perhaps revealing clearer insights into contextual and perceptual features of conflict that were specific to those with problems of aggression. However, there were good reasons for including a non-disabled group in the first study. Problematic aggression is more common in people with IDs than in the wider population with conservative estimates indicating that 11% of people in this group have difficulties (Tyrer et al, 2006). By including individuals without IDs, it is possible to say whether there are certain experiences specific to the lives of people with IDs that predispose many people in this group to be more aggressive.

Also, many individuals with IDs encounter negative social interactions, such as victimization, which can be damaging to the individual (Jahoda & Markova, 2004; Levy &

Packman, 2004; Sobsey, 1994; Lunsky and Benson, 2001). For this reason, Study 1 also aimed to explore the experiences of social conflict in the broader population of young people with IDs regardless of their aggressiveness. The non-disabled participants thereby provided a useful indicator of whether the experiences reported by participants were specific to people with IDs.

In the main phase of data collection (for Studies 2, 3, and 4), the primary aim during recruitment was to include sufficient numbers of participants with and without problems of aggression to allow for statistical comparisons. As such, the non-disabled comparison groups were included for subtly different reasons. Firstly, comparisons between participants with and without IDs served to illustrate whether any differences observed between aggressive and non-aggressive groups were actually a result of the participants' intellectual deficits. They also served to show whether differences in SIP between aggressive and non-aggressive young people with IDs are specific to this group. As previous chapters have shown, the everyday experiences of young people with IDs can differ dramatically from those of their non-disabled peers. Also, different mechanisms of SIP are found to depend on different degrees of cognitive capacity (Fontaine, 206, Fontaine et al, 2010). Given these two considerations, it is important to consider whether aggressive individuals with IDs would demonstrate the same patterns of SIP as non-disabled peers with problems of aggression.

Unfortunately, while an *a priori* power calculation for the second phase of studies recommended groups of 24 participants for adequate power, only 15 participants with IDs and 16 participants without IDs were found to have problems of aggression. Furthermore, as the Scenario Rating task commenced after the data collection process had begun, three participants without IDs and problems of aggression did not complete the task. Therefore, there is a risk that differences between aggressive and non-aggressive individuals may have gone undetected because the aggressive groups were underpowered.

It is worth considering the difficulties that contributed to this limitation and the efforts made to mitigate these difficulties. When the initial recruitment strategy for the main phase of recruitment was being devised, the researcher considered recruiting aggressive participants from clinical services offering anger management programmes. However, it was considered better to reduce the risks of confounding effects of socio-demographic differences by recruiting aggressive and non-aggressive participants from the same sites. In Study 1, approximately half of the participants with IDs were identified as having

problems of aggression. Given that the majority of participants for the later studies were to be recruited from the same sites as Study 1, this was taken as a strong indication that sufficient sub-samples of aggressive and non-aggressive individuals could be recruited for the main phase of data collection.

When it was realised that the college departments were providing insufficient participants with problems of aggression, steps were taken to find more suitable participants. A research proposal was submitted to the Scottish Prison Service for approval to interview eligible inmates of a young offenders' institution. Although no methodological or moral objections to the study were given, staffing limitations at this institution meant that they were unable to support recruitment from this site. According to the author's records, at least 19 college departments and 17 charity or state run youth groups in the central Scotland area were approached regarding recruitment. With ethical approval from Glasgow City Council, all known schools within the council boundaries that provide additional support for young people with learning difficulties were approached. Similarly, schools for individuals with behavioural difficulties were also approached. In both categories of schools, very few pupils were found aged 16 or over with problems of aggression. Staff reported that by the time they are sixteen, most individuals with problematic behaviour had either "grown out of it" or had left secondary education.

It might be concluded that individuals with IDs, and problems of aggression aged between 16 and 20 are a difficult group to recruit. Once at a school-leaving age, such individuals may see little reason, and receive little encouragement, to stay in secondary education. The results of Study 1 seemed to suggest that a large proportion of young adults with IDs and problems of aggression may make their way into Further Education courses for people with additional learning needs. However, this was not the case in the second phase of recruitment. Interestingly, a staff member at one of the additional learning needs departments commented that their department had recently started to take more consideration of the conduct of potential students when evaluating their applications.

One alternative explanation for the low number of aggressive individuals is that some staff members may have become wary of the aims of the research project. Some may have felt concern that if a large number of students were identified as having problems of aggression, it might reflect badly on their college department. Consequently, it is feasible that some might have been reluctant to give accurate accounts of the students' behaviour in

the challenging behaviours interviews. However, it should be acknowledged that there was no specific reason to think this was the case.

13.5.2 Gender Imbalance

The proportion of males and females were similar for the ID and ND groups in the Study 1. However, in the main phase of data collection, there was a notable difference in the distribution of males and females across the ID and ND groups. There was an even more dramatic gender imbalance between the aggressive and non-aggressive subgroups without IDs. There is a risk that these imbalances had a confounding influence on the results of the three final studies. This is especially pertinent given the plentiful evidence of differences in the nature and extent of aggressive behaviour by males and females across the lifespan (e.g. Archer, 2004; Fabes, Martin, & Hanish, 2003).

To evaluate the impact of gender differences in the sample, supplementary comparisons between males and females are reported for each of the main measures of Studies 2, 3 and 4. In each of the three studies, marked gender differences were found for the non-disabled participants. Surprisingly, this was not found to be the case for participants with IDs with the only significant gender difference being that male participants in Study 1 reported more aggressive responses to their experiences of conflict. Unfortunately however, these findings do draw into question the validity of the non-disabled comparison group and, in particular, the comparisons between the aggressive and non-aggressive subgroups without IDs.

Rates of direct aggression are generally found to remain higher in males than females across the lifespan (Archer et al, 2004). In that no special effort was made to recruit equal numbers of aggressive males and females, the proportions of aggressive females in this sample may accurately reflect those of the general population of young adults. It could be argued that if quota sampling had been used, groups would have better balanced in respect to gender. However, this would have been practically challenging as the primary measure of aggression was conducted post hoc.

13.5.3 Other Limitations

As Studies 2, 3 and 4 used the same sample, a relatively large number of comparisons were conducted between the same groups of participants. When multiple comparisons are conducted between groups, it becomes more likely that the null hypotheses will be incorrectly rejected (Zaykin et al, 2002). As such, there is a greater chance that some of the statistically significant results reported in these studies may have been the result of Type I errors. It should be acknowledged that this risk would have been diminished if simultaneous-inference tests, such as Bonferroni Corrections, had been utilized during data analysis.

This said, while such adjustments reduce the likelihood of falsely rejecting one of the null hypotheses, they also increase the likelihood of making Type II errors (Moran, 2003). Given that the research presented in this thesis was largely exploratory in nature, it was considered particularly important to ensure that the included studies were sensitive to potentially salient group differences. Furthermore, because the sample of aggressive participants was smaller than the size recommended by the *a priori* power calculation, there was a greater chance that such findings might have gone undetected. For this reason, it was decided that statistical corrections for multiple comparisons would not be used in the analysis of results of these studies. However, it will be important for the findings of these studies to be tested in future by well-powered studies using more conservative statistical analyses.

An additional anomaly regarding the non-disabled group for the three final studies was their surprisingly low mean IQ of 93. One possible explanation for this may be that 26 of the 46 non-disabled participants were recruited from youth groups or youth clubs. The majority of these were recruited from two Princes Trust groups that help unemployed young people develop skills to help them secure employment. The majority of these individuals were early school-leavers and several other participants were recruited from youth clubs in hard to reach communities. In short, it is highly likely that many of the participants in the non-disabled group had completed fewer years of education than the average non-disabled 16-20 year old and this may explain the relatively low IQ scores seen in this group.

The low level of education in the ND group is perhaps reflected in their relatively high mean social deprivation score. However, it is worth noting that the Social Deprivation scores of the ID and ND groups were not found to be significantly different. Therefore, while the low mean IQ of this group may seem like a sampling problem, it could equally be viewed as an accurate reflection of young people without IDs from similar backgrounds to the group with IDs.

Although methodological limitations of specific measures are considered in the individual discussion for each study, there were several more general methodological limitations worth considering. The advantage of focusing exclusively on people in the transition to adulthood meant that it was possible to obtain data that more accurately reflects the social information processing of people at a specific developmental stage that is underrepresented in the existing literature. However, it is also difficult to infer whether the findings of the thesis generalise to older adults or, indeed, to younger teenagers. Indeed, as discussed previously, the current literature for people with and without IDs suggests that the roles of response decision mechanisms, such as outcome expectancy, become more prominent through the lifespan (Fontaine et al, 2010). It might have been interesting to include a group of post-adolescent or early-adolescent people with IDs. This would have offered an insight into the extent to which patterns in SIP observed in this sample are specific to people of this age group.

As conceded in the Discussion for Study 2, the Family aggression index was a very brief and rudimentary measure of parental aggression. It had been the intention of the author to interview the parents of a number of the participants in regards their own aggressiveness and their views on aggression. Unfortunately, it was not possible to complete these interviews due to time constraints of the PhD.

One point made in the systematic review was that existing studies have so far failed to examine the relationships between different stages of SIP in aggressive adults with IDs (see Chapter 7). In the non-disabled population, structural equation modelling has shown that response evaluation mediates the relationship between hostile attribution style and antisocial behaviour in adolescents without IDs (Fontaine et al, 2010). Similarly, factor analysis has been used to identify the relationship between the SIP mechanisms that underpin aggression in children with IDs (van Nieuwenhuijzen, 2006). Unfortunately, the results of a power calculation confirmed that the present studies were not sufficiently powered to conduct formal modeling analyses for our sample (Soper, 2011).

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Finally, it is worth acknowledging that three of the main measures were developed by the author during the course of the thesis. The vignettes for the Scenario Rating and Outcome Expectancy tasks were developed to reflect the experiences of conflict reported by young adult participants with IDs in Study 1. As no previous studies have examined the encoding of dynamic cues in aggression, there was no precedent for the Emotion Recognition task and, hence, was developed 'from scratch'. As such, there were inevitably methodological shortcomings in these measures. For example, the Outcome Expectancy task included more provocative scenes than previous studies. Faced with ten scenarios discussing responses to conflict, it is possible that some participants may have realised the aims of the study and been inclined to give socially desirable responses. In the case of the Emotion Recognition task, it is difficult to say how well the simulated emotion conveyed by the actors in the PLDs represents the way emotion is actually expressed by body movements (see the discussion chapters of the relevant Studies for further details). As discussed previously, it is possible that such methodological limitations could account for the lack of significant differences between aggressive and non-aggressive participants with IDs for these two measures.

13.6. Conclusion

The present thesis examined the psychosocial factors that underpin aggression in young adults with and without IDs. The clearest finding for young people with IDs was that aggressive participants with problems of aggression were more likely to encounter physical aggression and conflict in general. This highlights the importance for future research to identify more specific proximate factors that typically trigger aggressive behaviour in this group. Aggressive participants without IDs expected far more positive outcomes from aggression and negative outcomes from submissive behaviour. The thesis also found very clear evidence that young adults without IDs' expectations about the outcomes of aggression and submissive behaviour may contribute to problems of aggression. In particular, aggressive individuals appear to be influenced by the perceived beliefs of their peers and their parents. It might be concluded that developing a better understanding of the interpersonal influences on aggression is an important goal for future research.

The author argued that aggressive participants' aversion to being submissive might reflect a fear of losing social status. For such individuals, aggression may be a means by which to protect their social status. Furthermore, it was argued that the relative social deprivation of the non-disabled participants might contribute to vulnerabilities in participants' self-concepts which, in turn, may lead to greater sensitivity to provocation (Jahoda et al, 2001). As such, it may be that self-beliefs, and the factors that shape them, are also crucial to fully understanding aggression in young people with and without IDs.

The author would conclude that in addition to accounting for online processing (e.g. hostile attribution style) a comprehensive psychosocial account of aggression should be able to incorporate contextual triggers (e.g. same-sex peers) background factors (e.g. social deprivation) and the underlying self-constructs (e.g. vulnerable self concept). Recent theoretical incarnations of SIP, the prevailing psychosocial model of aggression, includes a 'database' of latent mental structures and accounts for emotionality and moral reasoning (Arsenio & Lemerise, 2004). As such, researchers revising the model have stressed that it has the potential to account for the proximal, distal and to some degree, latent personal factors of aggression (Fontaine, 2006). However, to date, empirical research has generally concentrated on the online processing factors of the model.

In particular, the literature for aggression in people with IDs, which remains in its relative infancy, has purely focused of the six processing steps of SIP. It will be important for future empirical research to flesh out the SIP model by examining how specific mechanisms interact with self-beliefs and environmental factors. Otherwise, there is a danger that through an overly mechanistic application of SIP theory in research, important factors in aggression will remain obscured.

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Appendix A Covering Letter and Study Overview for Study 1

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Dear *********

       I would be grateful if you would consider the enclosed research proposal. All necessary documents should be enclosed but if you require any further information or documentation, please do not hesitate to contact me.

Many thanks.

Yours sincerely

Peter Larkin

Inter-personal sources of conflict in young people with and without mild to moderate intellectual disabilities at transition from adolescence to adulthood.

Research Team:
Professor Andrew Jahoda, Peter Larkin, Dr Kenneth MacMahon, Dr Carol Pert

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Outline and Methodology:
Our research is trying to identify the types of situations in which young people with and without learning disabilities typically encounter conflict. The main motivation is that a significant minority of people with mild learning disabilities have problems with aggression and little is known about the social sources of these problems. Amongst other things, these problems can have a major impact on their further education and career prospects, especially at the key stage of leaving full time education. By asking young people with and without learning disabilities about a recent incident of conflict ("a time when someone did something that really bugged you") we hope to get an insight into key social triggers of aggression and into how people's perceptions of situations lead to that aggression.

There would be three phases of the study:

1. Very brief presentation (2-3mins) to classes identified by staff/leaders about the study. People are then given a week to sign a slip and either give it to their teacher/leader or pop it in a box in their classroom if they wish to participate.

2. Appointments would be made to interview people that are happy to participate. This would take about one hour.

3. A teachers that has known the participant for at least 3 months would be asked to give a very brief account of how aggressive they feel the pupil has been in the preceding 3 months. This would take about 2 minutes per participant and we could probably go through a large number of pupils in one block of time.

Data Protection:
The personal addresses, postcodes and telephone numbers will be recorded at the time of recruitment of participants and will be stored securely and separately from collected study data. The data from the study will be held in secure, password protected databases on university computers. Hard copies will be held in secure filing cabinets in locked university accommodation. Data held on computer databases, and in hard copy, will use unique participant identification codes such that no individual will be able to be identified from the data. Postal prefixes will be encoded by the assignment of area affluence scores. Data transfer between computers may be done via emails to and from the secure University/NHS email accounts of research team members.
All data will be held in keeping with the Data Protection Act.

Access and facilities being requested:
Facilities: Colleges/schools/Youth group, (x4)

Participants: young people aged 16-20 (approximately 60: 30 participants with mild-moderate learning disabilities, 30 participants without learning disabilities)
-Interview data, WASI scores will be gathered from participants. All potentially identifying information recorded will be anonymised.

Teaching staff/leaders (approximately 4)
- Teachers/leaders will be asked to indicate participants' incidence of aggressive behaviour in the preceding 3 months. This can be done over the phone and takes approx 2 minutes for each participants. Participants' permission will be obtained before teachers/leaders are consulted.

Miscellaneous
The research is being funded by NHS Greater Glasgow and Clyde as part of Peter Larkin's PhD studentship. The research will be reported in an article which will be submitted to relevant peer reviewed journals. Results will be fedback to participants via summary sheets and at least one summary/discussion event to which all participants will be invited.

Appendix B: Participant Information Pack for Study 1. (Information Sheet, Reply Slip)

B1 Information Sheet

 University *of* Glasgow

 NHS Greater Glasgow and Clyde

WHAT ANNOYS YOU?

INFORMATION

We would like to invite you to take part in a research study. The information sheet tells you about the study. Please read the information sheet, or ask someone to read it with you. This information sheet is for you to keep.

This research will find out what things other people do that make young people feel angry or annoyed. The study could help people like teachers to understand young people like you.
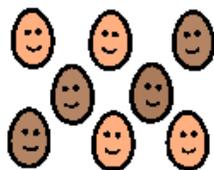
We hope that 30 young people with learning disabilities from the Glasgow area will be able to take part in this study. Everyone feels annoyed at others sometimes and we want to speak to people your age about this.

A researcher will talk to your class about the study. If you are interested in taking part in the study, you can speak to your teacher or the researcher after the talk. You can also ask your teacher or the researcher about taking part in the study.
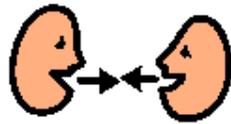
If you choose to take part in the study, you will be asked to meet the researcher for an interview in your school or college. In the interview, the researcher would ask you to talk about a time when someone annoyed you. The interviewer would ask you about what happened and how you felt about it. The researcher would then ask some other questions, like a quiz, to see what you are good at and what you find difficult.

We would like to record your interview. This makes it easier for us to talk to you. If you do not want the interview to be recorded, it is OK, the researcher can take notes instead.

Together, the interview and quiz will take about one hour. This study will take place between January 2009 and March 2009.

You do not have to take part in this study. It is OK to say no. If you don't want to take part, this will not change the care and support you receive.

You can change your mind about taking part, or stop, at any time. You do not have to say why. If you change your mind this will not change the care and support you receive.

If it is OK with you, the researcher will arrange to see you at your school or college. Your teacher or tutor will be in a nearby room. If you want, the researcher can arrange to see you somewhere else.

Researchers will not tell anyone else your name or address. The information will be kept very safely on a computer. But, if you tell us that you might harm yourself or other people we would have to tell people who could help you.

When the research study is finished, the researchers will write to you about what the study found. You will also be invited to a talk with all the other participants. At the talk, researchers will tell you more about the results of the study. You will be able to talk to the researchers and ask them questions.

Researchers will also write reports about the research. Your name will not be used in the reports. No one will be able to tell from the reports if you took part in the research.

You can ask us questions about the study. Our names and telephone numbers are shown below. You can contact them at any time.
If you would like to take part, you can complete the reply slip below or tell your teacher. You can also tell the researcher by phoning **0141 211 3918**. After two weeks we will phone to ask if you would like to take part

0141 211 3918

Researcher:

Peter Larkin

Section of Psychological Medicine,

Division of Community Based Sciences

Academic Centre, Gartnavel Royal

Hospital, 1055 Great Western Road,

Glasgow, G12 0XH.
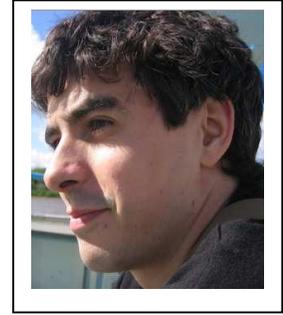
Telephone: 0141 211 3918

Research Team

Peter Larkin, PhD Student, University of Glasgow.
Telephone: 0141 211 3918

Prof. Andrew Jahoda, Chair in Learning Disabilities,
University of Glasgow. Telephone: 0141 211 0282

Dr. Ken MacMahon, Clinical Psychologist, Douglas Inch Centre,
Telephone: 0141 211 8000

Dr. Carol Pert, Consultant Clinical Psychologist, Glasgow Learning
Disability Partnership. Telephone 0141 276 23

B2 Participants Reply Slip

"WHAT MAKES US AGGRESSIVE?"

- I would like to take part in this study.   ☐

- I would like more information about the study.   ☐

SIGN…………………………………….

NAME……………………………………   CLASS………………..

If you have any questions about the study, you can ask your teacher or contact
Peter (the researcher) at: **0141-211-3918**   or   **p.larkin@clinmed.gla.ac.uk**

Appendix C Protocol & Answer Sheet for semi-structured interview used in Study 1

Sources of Conflict in young people with and without MIDs

Interview Questions

[Based on the Cognitive-Emotive Behavioural Assessment (CEBA; Trower et al, 1988; Jahoda et al, 1998)]

The interview questions will follow ABC sequences used by Jahoda et al (1998) with: (A) the activating event or incident, (B) beliefs about the event and (C) the consequent emotions and responses.

Begin the interview by getting the client to focus on an interpersonal conflict that occurred last 3 months, preferably during the past week. The conflict may be overt- where there was an argument- or covert- where everything was apparently serene on the surface but emotions were boiling away underneath! If necessary go through each day of the week and ask if there was an episode of interaction that caused any kind of discomfort. Try to get a conflict that caused a strong emotional C.

It is most important to help your client get in touch with the emotion that coloured the conflict, to as far as possible re-experience it. This is because the selection of events, beliefs and actions are driven by the emotion. These are emotion episodes, and the emotion has to be re-experienced to get the relevant psychological phenomena. An event that is rationally and coolly described will not lead to the reporting of an emotional episode but a rationalised version of it. You may have to remind the client at various points in the interview not to fall back on giving a rationalised account. Give the client space to give a general description of the conflict in their own words, and give them permission to use emotive language. The questions of the interview will roughly follow the following format:

- Ask the participant to recall a recent incident of interpersonal conflict which still arouses feelings of anger or other negative emotions.
- Ask participants to describe the incident (A)
- Ask participants to describe the nature of their behavioural responses and emotions (C)
- Ask participants to describe any techniques that they may have used to control their emotions and behaviour.
- Try to get participants to hold this emotion while you discuss i) how the participants felt they were perceived by the other person ii) whether they believe the way that the other person treated them was justified iii) How they perceived the other person

Name:	School/College:	P#:

Age:	M/F	Interviewer:	Date :

Activating event	**Beliefs**

Describe □ Categorise other's action □	**Primary** (OS) □ Categorise □ (SS) Actual endorsement □ Potential endorsement □ (SO) □ Categorise □ **Secondary** Preferred Action □ Action Choice □ Want/ought □

Consequences

Emotion	**Action**
General □	Describe □
Specific □	AcAc/InAc Categorise □ Emotional/Behavioural Control Strategy □

Notes:	**Address:**

Appendix D: Scenario Ranking Task Response Sheet & Illustration Cards

D1 Scenario Ranking Task Response Sheet

EXPERIENCES OF OUTCOME EXPECTANCY VIGNETTES.

EXPERIENCES

- **BUS STOP** (provoked by someone on street)

Ever? Y/N   Last time:_____

- **NASTY STORIES** (or rumours about you from people you know a little)

Ever? Y/N   Last time:_____

- **UNTIDY BED** (in trouble with parents, feels unfair)

Ever? Y/N   Last time:_____

- **TRIPPED** (or physically assaulted)

Ever? Y/N   Last time:_____

- **LET DOWN** (or undervalued by friend)

Ever? Y/N   Last time:_____

PROVOCATIVENESS RANKING

Rank vignettes from 1-5 where 1 is most provocative, and 5 is least provocative.

"BUS STOP"_____

"TRIPPED"_____

"RUMOURS"_____

"UNTIDY BED"_____

"CINEMA"_____

Notes_____
_____
_____
_____
_____
_____
_____
_____

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D2 Illustration Cards for **Scenario Ranking Task**

Male Set

BUS STOP

TRIPPED UP

TIDY YOUR

NASTY STORIES

LET DOWN by friend
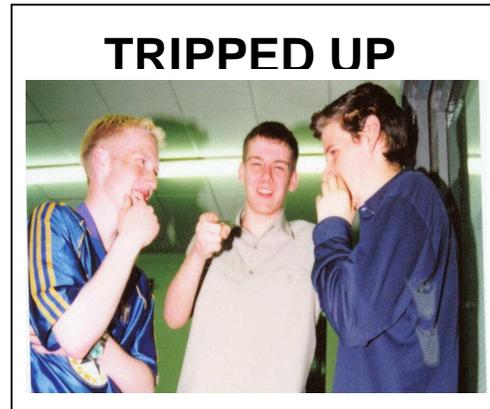
D2 Illustration Cards for Scenario Ranking Task

Female Set

TIDY YOUR ROOM

BUS STOP

TRIPPED UP

LET DOWN by friend

NASTY STORIES
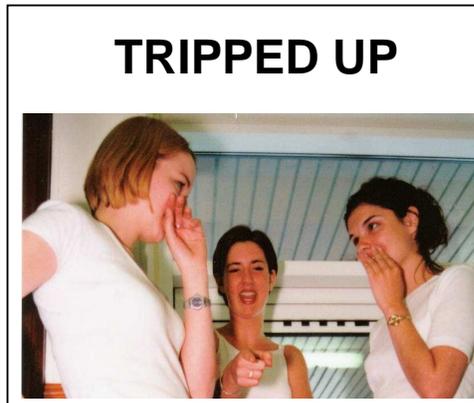
Appendix E: Checklist of Challenging Behaviour.

15/12/98

6. CHALLENGING BEHAVIOUR

Please rate the frequency of the behaviours listed below, according to the following frequency rating scale.

Frequency:
How often has this behaviour occurred during the past six months?

0 = never   This behaviour has not occurred during the past six months
1 = rarely   Has occurred during the past six months but not in the past month
2 = occasionally   Has occurred 1 - 4 times in the past month
3 = often   Occurred more than 4 times in the past month
4 = very often   Occurred daily or more often

	Aggressive Behaviour	Frequency
Physical aggression towards others	Hitting, grabbing, pushing, pulling, pinching, scratching, hair pulling, kicking, headbutting, biting, choking or throttling, throwing things at people, using objects as weapons against people	
Verbal aggression towards others/aggression towards others' property	Shouting and screaming at people, swearing at and abusing others, threatening others, deliberately damaging an individual's property.	
Aggressive behaviour not specifically directed at others	Muttering, cursing, shouting aloud, deliberately damaging objects, slamming doors, banging or knocking over objects, barging through places and past people.	

What is the approximate total number of aggressive incidents in the last 6 months?

Aggressive Behaviours	No. of incidents
Physically aggressive incidents	
Verbally aggressive incidents/ damage to another's property	
Incidents involving undirected aggressive behaviour	

What is the typical impact of these aggressive incidents? Please tick those that apply.

No damage or injury	
Small scale damage to property (eg, broken cups	
Larger scale damage to property (eg broken chairs, windows etc)	
Minor injury not requiring medical attention	
More serious injury requiring medical attention	
No impact	
Some concern, upset or annoyance for those around	
Fear, feelings of threat or anger for those around	

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30/11/98

In your opinion, what is the cause of the person's aggressive behaviour?

In your opinion, has the person's life or opportunities been affected by their aggressive behaviour?

Can you give a brief overall description of the person and their typical social behaviour (including aggressive and more pro-social behaviour)?

Appendix F: Recruitment Site Proposal and Cover Letter/Email for Phase 2.

F1 Cover Letter/Email (in email format)

Dear *********

Many thanks for taking the time to speak to me this afternoon and for considering helping me with my research. As discussed, here is a brief description of the aims of the study and what it involves for participating pupils. I have also attached a slightly more detailed overview of the study with a little more information on what the interviews involve.

The study aims to gain a better understanding of the social experiences and ways of thinking that can lead to aggressive behaviour in young adults between 16 and 20. I am interested in speaking to males or females within this age range and they don't have to have a history of being aggressive.

Normally, I would have an initial chat with students selected by staff to give them a bit of information about the study and allow them to ask me any questions they might have. It is best practice to then allow the student at least one day to consider whether they would like to take part and to consult with parents or teachers if they wish.

I would be hoping to speak to each young person that wanted to take part on two separate occassions. There is an initial 40-60 minute discussion about hypothetical scenarios and how they might deal with them. This would be followed at a later date (normally 2-14 days later) by a 30 minute session which includes watching movie clips of "stick-men" and guessing whether they feel angry, sad or happy and a problem solving task.

If you have any other questions about the study please feel free to contact me by email or by phone at 0141 232 2002/07501088310. Many thanks again and I hope to speak to you soon.

Kind Regards

Peter Larkin
PhD student
Psychological Medicine
Faculty of Medicine
University of Glasgow

F2 Research Proposal for Phase 2.

University of Glasgow | Section of Psychological Medicine

Cognitive and social aspects of aggression in young people with and without mild to moderate intellectual disabilities.

Research Team: Peter Larkin, Andrew Jahoda, Ken MacMahon, Carol Pert
Contact Point: Peter Larkin: 0141 232 2002, p.larkin@clinmed.gla.ac.uk

Outline and Aims

A large minority of young people with mild to moderate intellectual disabilities (MIDs) have significant problems with aggression. As well as putting a strain on support services, such problems can have lasting consequences for the relationships, employment and education opportunities of these individuals.

Our study aims to gain an insight into the thought processes that lead some young adults with intellectual disabilities to act aggressively. It will also provide valuable information about the sources of aggression in young adults without disabilities. Specifically, we will compare sensitivity to anger cues and beliefs about parental opinions between aggressive and non-aggressive participants.

Participants

The study focuses on frequent aggression in young people with mild to moderate intellectual disabilities but will include young people with and without MIDs. We aim to include 100 young people (50 young people with and 50 without intellectual disabilities) from several different colleges.

Procedure

We would be seeking to speak to each participating student on two separate occasions on school/college premises:

SESSION 1 (40-60 mins approx):
- *Outcome Expectancy Task* (participants are asked to imagine reacting aggressively to a number of scenarios and asked to predict the consequences of such actions).

SESSION 2 (30 mins approx):
- *Emotion Identification Task* (participants identify emotions in brief movie clips of everyday actions)
- *Weschler Abbreviated Scale of Intelligence* (participants complete brief intelligence scale with problem solving and vocabulary tasks).
- *Family Aggression Index.* Three yes/no questions about how commonplace anger and aggression is at the family home.

Appendix G: Phase 2: Participant Information Pack

University *of* Glasgow

NHS
Greater Glasgow and Clyde

"WHEN PEOPLE ARE MEAN"

INFORMATION

We would like to invite you to take part in a research study. The information sheet tells you about the study. Please read the information sheet, or ask someone to read it with you. This information sheet is for you to keep.

This study is to find out what young people think about being aggressive. It will also look at how young people understand body language. The study could help people like teachers to understand young people like you.
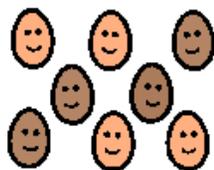
We hope that 48 young people with learning disabilities from central Scotland will be able to take part in this study. Everyone feels annoyed at others sometimes and we want to speak to people your age about this.

A researcher will talk to your class about the study. If you are interested in taking part in the study, you can speak to your teacher or the researcher after the talk. You can also ask your teacher or the researcher about taking part in the study.
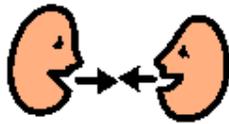
If you choose to take part in the study, you will be asked to meet the researcher TWO TIMES in your school or college.

SESSION 1

- The researcher would tell you some stories about different social situations. They would ask you to imagine reacting in different ways to these situations. They would then ask you what you think would happen if you did each reaction.

SESSION 2

- The researcher would show you movie clips of people. They would ask you if you think the person is angry, sad or happy.
- The researcher would then ask some other questions, like a quiz, to see what you are good at and what you find difficult.
- Then the researcher would ask you some questions about how you get on with different people you know.

Session 1 would take about 40 minutes and Session 2 would take about 25 minutes.

You do not have to take part in this study. It is OK to say no. If you don't want to take part, this will not change the care and support you receive.

You can change your mind about taking part, or stop, at any time. You do not have to say why. If you change your mind this will not change the care and support you receive.

If it is OK with you, the researcher will arrange to see you at your school or college. Your teacher or tutor will be in a nearby room. If you want, the researcher can arrange to see you somewhere else.

Researchers will not tell anyone else your name or address. The information will be kept very safely on a computer. But, if you tell us that you might harm yourself or other people we would have to tell people who could help you.

When the research study is finished, the researchers will write to you about what the study found. You will also be invited to a talk with all the other participants. At the talk, researchers will tell you more about the results of the study. You will be able to talk to the researchers and ask them questions.

Researchers will also write reports about the research. Your name will not be used in the reports. No one will be able to tell from the reports if you took part in the research.

You can ask us questions about the study. Our names and telephone numbers are shown below. You can contact them at any time.
If you would like to take part, you can complete the reply slip below or tell your teacher. You can also tell the researcher by phoning **0141 232 2002**. After two weeks we will contact your teacher/lecturer to ask if you would like to take part.

0141 232 2002

Researcher:

Peter Larkin

Mental Health and Wellbeing

Division of Community Based Sciences

Academic Centre, Gartnavel Royal Hospital

1055 Great Western Road,

Glasgow, G12 0XH.

Telephone: 0141 232 2002

EMAIL: p.larkin@clinmed.gla.ac.uk

Research Team

Peter Larkin, PhD Student, University of Glasgow.
Telephone: 0141 211 3918

Prof. Andrew Jahoda, Chair in Learning Disabilities,
University of Glasgow. Telephone: 0141 211 0282

Dr. Ken MacMahon, Clinical Psychologist, Douglas Inch Centre,
Telephone: 0141 211 8000

Dr. Carol Pert, Consultant Clinical Psychologist, Glasgow Learning
Disability Partnership. Telephone 0141 276 23

Appendix H: Household Aggression Index (from The Anger and Aggression Assessment; 3A; Taylor 1999).

FAMILY INTERVIEW SCHEDULE   **P# _____   Date_____**

<u>**Code**</u>

1. Did you know if your parents ever got angry?	Yes	1
	No	0
2. Did they fight with each other?	Yes	1
	No	0
3. Did they fight with anybody else?	Yes	1
	No	0
	TOTAL	___/3

Appendix I: Study 3 E-Walk Training Task Protocol

INTRODUCTION SCRIPT E-WALK TASK

"I'm going to show part of a movie"

***PLAY Example 1: "Stick-person"**

"What can you see?"

"Yes, its someone knocking on something"

"let's try a few more examples, this time instead of a "stick-person", you're going to see movies that just have moving dots. I'll show you what I mean. Just watch this next clip and tell me what you see."

*** (PRESENT- Example 2: "Walking PLD")**

"What did you see in that clip?"

"What do you think the lights are attached to?"

*** (Prompts as necessary)**
"(PROMPT 1) "They're not knocking this time, what do you think they're doing?*"*

REPEAT CLIP
"(PROMPT 2) *What did you see that time? What are they doing?"*
"(PROMPT 3) *Can you point to the person's head*?)"

"In the movie clips, the people doing the actions will be SAD, HAPPY, ANGRY or have NO EMOTION.
"After each movie clip, you will be asked if you think the person in the movie was ANGRY, SAD or HAPPY or had NO EMOTION."

*** (PRESENT "Smileys")**

"You can do this by pointing to one of the 4 pictures in front of you or by just saying your answer out loud.
"So, for an example, watch that clip again…."

*** PRESENT Example PLDs x4 (ANGRY, SAD, HAPPY NEUTRAL)**

AFTER EACH- *"Do you think the person in that clip was SAD, HAPPY, ANGRY or NO EMOTION?"*
NB Don't give answer, just ensure that they understand the task.

 (Once the participant has demonstrated that they understand)
"Ok, great, basically what you're doing is…..
1. Watching the movie clip.
Then
2. Guessing if the person was SAD, ANGRY, HAPPY or had NO EMOTION by choosing one of these pictures"

"Does this make sense to you so far? do you have any questions? In that case lets start. There's no time limit so just take your time and enjoy the task! Here's the first one"

Appendix J: Study 4 Outcome Expectancy task: Instructions for researcher & Illustrated Vignettes

Outcome Expectancy Task
(The line of questioning is based on the BARTT as used by Kirk et al, 2004. Vignettes are based on results of phase 1 and your existing vignettes)

"I'm going to tell you some stories along with some pictures. I would like you to imagine that you are the person that the stories are happening to."

Ask the following questions…

1. AFTER EACH PROVOCATIVE (and ambiguous?) STORY,

   1.a What do you think would happen after you did this?
   1.b Would something good or bad happen?
   2.a When you walked away, what would your friends think of you?
   2.b Would they think you were weak or strong?
   3.a When you walked away, what would your parents think of you?
   3.b Would they think you were weak or strong?
   4.a How would doing this make you feel about yourself?
   4b Would doing this make you feel good about yourself?
   5. What would you do if this happened to you?

2. AFTER EACH POSITIVE STORY

   - **How would you feel when he gives you the present?**
   - **What do you think about your friend?**
   - **What does he think of you?**

SCENE SUMMARIES

Provocative Scenes
   - Physical Violence:
   - Unprovoked personal insult
   - Rumours
   - Parent tells you off
   - Let down

Positive Scenes
   - Friend gives you a present
   - Teacher compliments your work
   - A friend's other friends like you.
   - A shopkeeper kindly let's you off with not having enough money for your purchase.

VIGNETTE 1. TRIPPED

A) *"You are walking down the corridor of the college/school between classes. Some people you know are standing about chatting. As you go past, one of them sticks out their foot and trips you up- on purpose. You fall to the ground. When you turn around, they are whispering to each other and laughing at you.*

AGG: *When you see them laughing you feel angry. You get up and jump towards them angrily, shouting with anger and telling the person that tripped you "you're dead!""*

1* What do you think would happen after you did this?

* Would something good or bad happen?

2.* When you shouted at them like this, what would your friends think of you?

* Would they think you were strong or weak?

3.* When you shouted at them like that, what would your parent(s) think of you?

* Would they think you were strong or weak?

4.* How would doing this make you feel about yourself?

* Would doing this make you feel good or bad about yourself?

* What would you do if this happened to you?

1.S) *"You are walking down the corridor of the college/school between classes. Some people you know are standing about chatting. As you go past, one of them sticks out their foot and trips you up- on purpose. You fall to the ground. When you turn around, they are whispering to each other and laughing at you.*

SUB: *When you see them laughing you feel upset, but you just get up, turn away from them and walk away.*

1* What do you think would happen after you did this?

* Would something good or bad happen?

2.* When you just walked away, what would your friends think of you?

* Would they think you were strong or weak?

3.* When you walked away, what would your Parent(s) think of you?

* Would they think you were strong or weak?

4.* How would doing this make you feel about yourself?

* Would doing this make you feel good or bad about yourself?

5. What would you do if this happened to you?

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Vignette 1 (Illustrations for Male Participants)

Image 1

Image 2

Image 3

Vignette 1 (Illustrations for Female Participants)

Image 1

Image 2

Image 3
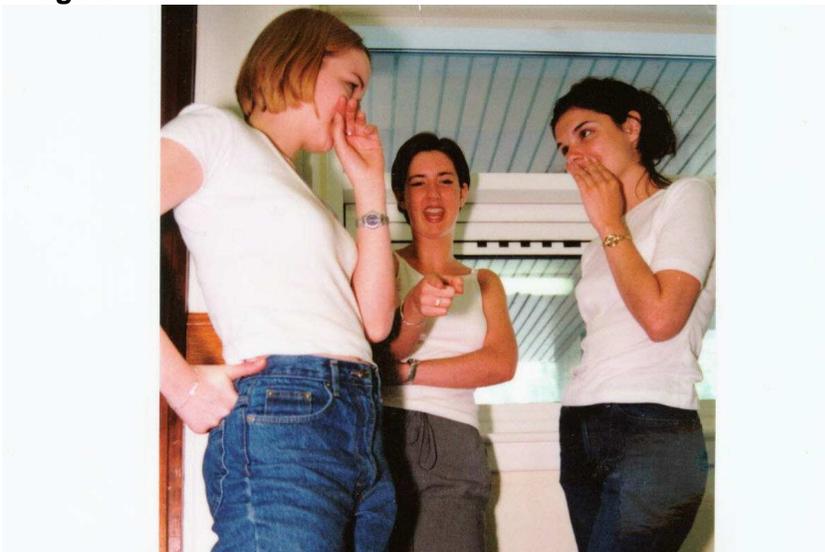
VIGNNETTE 2. RUMOURS

A) *"You are sitting talking with a good friend at lunch time and you notice that another guy/girl you know well is eating at another table. You tell your friend that you're going over to say hi. But before you can leave the table, the friend you are with stops you. He/she says that the other guy/girl said really nasty things about you to your other classmates yesterday. Since she is a good friend, you know that she's telling the truth."*

AGG: *"When your friend says this, you feel angry. You run over to the classmate at the other table and start shouting at them and calling them the worst things you can think of."*

1.* What do you think would happen after you did this?   * Would something good or bad happen?
2.* When you shout say these things to them, what would your friends think of you?   * Would they think you were strong or weak?
3.* When you shout say these things to them, what would your Parent(s) think of you?   * Would they think you were strong or weak?
4.* How would doing this make you feel about yourself?   * Would doing this make you feel good or bad about yourself?
5 What would you do if this happened to you?

2.S) *"You are sitting talking with a good friend at lunch time and you notice that another guy/girl you know well is eating at another table. You tell your friend that you're going over to say hi. But before you can leave the table, the friend you are with stops you. He/she says that the other guy/girl said really nasty things about you to your other classmates yesterday. Since she is a good friend, you know that she's telling the truth."*

SUB: *"When your friend tells you this, you feel upset but you don't say anything. You stay at your seat and finish your lunch without talking about it."*

1* What do you think would happen after you did this?   * Would something good or bad happen?
2.* When you just act like nothing has happened like this, what would your friends think of you?   * Would they think you were strong or weak?
3.* When you just act like nothing has happened like this, what would your Parent(s) think of you?   * Would they think you were strong or weak?
4.* How would doing this make you feel about yourself?   * Would doing this make you feel good or bad about yourself?
5. What would you do if this happened to you?

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Vignette 2 (Illustrations for Male Participants)

Image 1

Image 2

Vignette 2 (Illustrations for Female Participants)

Image 1

Image 2

VIGNETTE 3. BUS *A)* "You are waiting for the bus home and notice that a student you've seen at school/college but have never spoken to is walking towards the bus stop. When they see you they start pointing and laughing at you and tell you to go stand somewhere else."

AGG: *"When you hear this you get angry. You shout at them that you're not moving. You square up to them and tell them to get lost or else."*

1* What do you think would happen after you did this?

* Would something good or bad happen?

2.* When you square up to them like that, what would your friends think of you?

* Would they think you were strong or weak?

3.* When When you square up to them like that, what would your Parent(s) think of you?

* Would they think you were strong or weak?

4.* How would doing this make you feel about yourself?

* Would doing this make you feel good or bad about yourself?

5. What would you do if this happened to you?

3.S) **"You are waiting for the bus home and notice that a student you've seen at school/college but have never spoken to is walking towards the bus stop. When they see you they start pointing and laughing at you and tell you to go stand somewhere else."**

SUB: *"When they say this you feel upset but you don't say anything. You start walking along to the next bus stop."*

1* What do you think would happen after you did this?

* Would something good or bad happen?

2.* When you just walked away like that, what would your friends think of you?

* Would they think you were strong or weak?

3.* When you just walked away like that, what would your Parent(s) think of you?

* Would they think you were strong or weak?
4.* How would doing this make you feel about yourself?

* Would doing this make you feel good or bad about yourself?

5. What would you do if this happened to you?

Vignette 3 (Illustrations for Male Participants)

Image 1

Image 2

Vignette 3 (Illustrations for Female Participants)

Image 1

Image 2

VIGNETTE 4. PARENTS *A)* *"You get home from school/college and open the door to find your Mum/Dad looking really really angry with you. He/She points at your room and starts shouting at you saying that they'd told you to tidy your room a hundred times and you still haven't done it. You can't remember them asking you to tidy your room."* **AGG:** *"As soon as you hear this you feel really angry. You shout as loud as you can, calling them names and telling them that you hate them."*

1* What do you think would happen after you did this?   * Would something good or bad happen?
2.* When you shouted at them like that, what would your friends think of you?   * Would they think you were strong or weak?
3.* When you shouted at them like that, what would your Parent(s) think of you?   * Would they think you were strong or weak?
4.* How would doing this make you feel about yourself?   * Would doing this make you feel good or bad about yourself?
5. What would you do if this happened to you?

4.S) *"You get home from school/college and open the door to find your Mum/Dad looking really really angry with you. He/She points at your room and starts shouting at you saying that they'd told you to tidy your room a hundred times and you still haven't done it. You can't remember them asking you to tidy your room."* **SUB:** *"This makes you feel really upset. You say sorry and go to your room to start tidying."*

1* What do you think would happen after you did this?   * Would something good or bad happen?
2.* When you just go off to tidy your room, what would your friends think of you?   * Would they think you were strong or weak?
3.* When you just go off to tidy your room, what would your other Parent(s) think of you?   * Would they think you were strong or weak?
4.* How would doing this make you feel about yourself?   * Would doing this make you feel good or bad about yourself?
5. What would you do if this happened to you?

Vignette 4 Illustrations

Image 1

Image 2

VIGNETTE 5. CINEMA *A)* *"You've arranged to meet your friend at the cinema and you're really excited about seeing the movie. You are waiting outside the cinema but you're friend's about a half hour late and hasn't been answering their phone. Then, your friend calls you and says that they can't be bothered meeting you today because they're staying in to watch a dvd with a different friend."*

AGG: **When your friend says this you feel really angry. You shout down the phone telling him if they do anything like this again they are for it".**

1* What do you think would happen after you did this?

* Would something good or bad happen?

2.* When you shouted at them like this, what would your friends think of you?

* Would they think you were strong or weak?

3.* When you you shouted at them like this, what would your Parent(s) think of you?

* Would they think you were strong or weak?

4.* How would doing this make you feel about yourself?

* Would doing this make you feel good or bad about yourself?

* What would you do if this happened to you?

5.S) *"You've arranged to meet your friend at the cinema and you're really excited about seeing the movie. You are waiting outside the cinema but you're friend's about a half hour late and hasn't been answering their phone. Then, your friend calls you and says that they can't be bothered meeting you today because they're staying in to watch a DVD with a different friend."*

SUB: *"When your friend says this you feel really disappointed and upset. However, you tell them it's no problem and that you'll talk to them later."*

1* What do you think would happen after you did this?

* Would something good or bad happen?

2.* When you (walked away/shouted at them etc), what would your friends think of you?

* Would they think you were strong or weak?

3.* When you (walked away/shouted at them etc), what would your Parent(s) think of you?

* Would they think you were strong or weak?

4.* How would doing this make you feel about yourself?

* Would doing this make you feel good or bad about yourself?

* What would you do if this happened to you?

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Vignette 5 Illustrations

Image 1

Image 2

Positive Vignettes

6. *PRESENT "You meet a friend for lunch. Your friend has been on holiday and has brought you back a present."*

- How would you feel when [he gives you the present etc]?

- What do you think about [your friend etc]?

- What does [he] think of you?

7. *TEACHER "You've just arrived at school/college for the day and you bump into one of your teachers/lecturers. Last week you finished a really difficult piece of work for their class and your teacher/lecturer tells you that they thought it was the best in the class."*

- How would you feel when [he gives you the present etc]?

- What do you think about [your friend etc]?

- What does [he] think of you?

8. *NEW PALS "You're at your friend's house and you meet some of his/her other mates for the first time. You find that you get on really well with them and think to yourself that you would like to meet them again. While you are saying goodbye to everyone, one of your friend's mates tells you it was really nice to meet you and that she'd like you to come to her birthday party with everyone next weekend."*

- How would you feel when [he gives you the present etc]?

- What do you think about [your friend etc]?

- What does [he] think of you?

9. **SNACK "You are in a local shop to get a snack. When you go to pay the shopkeeper, you realise that you don't have enough money on you, you are short about 5p. When you tell the shopkeeper this, he smiles and says its ok, just take it and pay me the 5p next time."**

- How would you feel when [he gives you the present etc]?

- What do you think about [your friend etc]?

- What does [he] think of you?

Appendix K: Example Responses and Codes for Study 4

TABLE K1: EXAMPLE RESPONSES TO STUDY 4 VIGNETTES (AGGRESSIVE ENDINGS)

	Response Category	Example Response
QUESTION 1 "what'll happen next?"	Conflict/aggression	*"all three would gang up on me"*, *"Encourage more pushing"*
	Told off/punished	*"never be able to use computer, she wouldnt talk to me"* *"stick me in my room, though im 18"*
	Not Right/harm to others	*"someone would get hurt"*
	Positive	*"she wouldn't do it again"*
QUESTION 2 "what would your friends think?"	Not right/pointless	*"wrong but bad idea"*
	Neg appraisal of Participant	*"Idiot"*, *"I'm being a dick"*
	Right/ought to	*"I'm in the right"*, *"Cant let them bully you"*
	Positive Appraisal of P.	*"Good for you mate"*
QUESTION 3 "what would your parents think?"	Not right/pointless	*"Be the bigger man, walk away"*, *"Shoulda left it in case of trouble"*
	Neg appraisal of P.	*"A bit stupid"*, *"That I'm really immature"*
	Correct action	*"Done the right thing"*
	Positive appraisal of P.	*"Proud, you stuck up for self"*
QUESTION 4 "How would you feel about yourself?"	Feeling about behaviour	*"Angry at self, pissed off at myself"*
	Concern for self	*"a little worried about what's gonna happen"*
	Bad about impression	*"Really embarrassed"* *"make fool of my self, coulda avoided it"*
	Proud/happy	*"good about self that I've told her"* *"happy and proud"*
	Justified	*"did right in confronting him"*
QUESTION 5 "what would you do?"	Assertive	*"ask her calmly 'why?' "* *"ask her 'what happened?'"*
	Phys Aggression	*"batter them"*, *"punch her"*
	Verbal Aggression	*"get up and shout at them"*, *"tell them where to go"*
	Passive	*"just walk away"*, *"just ignore and walk away"*

TABLE K1: EXAMPLE RESPONSES TO STUDY 4 VIGNETTES (SUBMISSIVE ENDINGS)

	Response Category	Example Response
QUESTION 1 "what'll happen next?"	Conflict/aggression	*"He'd keep shouting at me"* *"May follow you, start more"*
	Not Right/look weak	*"They'd think 'he's a softy'"* *"He'll think 'Im getting away with it'"*
	Resolved/adaptive	*"Avoid fight"* *"Probably she'd walk away"*
	Right thing to do	*"Good, I done as I was told, room tidy"*
QUESTION 2 "what would your friends think?"	Ought to react	*"Shoulda taken it further"*
	Weak.mocked	*"Too shy",* *"Coward"* *"Wuss"*
	Right/nice/kind	*"I'm being mature"* *"Proud of me"*
	Avoid trouble/adaptive	*"Thats good, didnt cause trouble"* *"Good call, the girl wanted to scrap with you"*
QUESTION 3 "what would your parents think?"	Ought to react	*"Shoulda said something or reported it"*
	Weak/mocked	*"You're a push over"* *"Wuss"*
	Right/nice/kind	*"Right thing to do"* *"Not down to their level"*
	Avoid trouble/adaptive	*"Good cos didnt start things"* *"Better than black eye"*
	Emotion	*"She'd be well happy"*
QUESTION 4 "How would you feel about yourself?"	Feeling about behaviour	*"Should speak up for self"* *"Never told him right"*
	Concern for self	*"Sad, stupid, wanna know why. Don't like lack of resolution"* *"Gutted"*
	Bad about impression	*"Embarrassed, I looked like a total shite bag"*
	Avoid trouble	*"no big scene. done with"* *"no fight"*
	Right/nice/kind/happy	*"you shouldnt get involved"* *"I've done the right thing"*

Appendix L Standard Residuals and column percentages of Chi Square comparisons of responses to the open-ended questions of Study 4's Outcome Expectancy task:

Table L1. Study 4: Standard Residuals and Column Percentages for ID Group (Questions 1 & 2)

Aggressive Endings		AGG	NAGG	Submissive Endings		AGG	NAGG
Question 1: (predicted consequences) "What do you think would happen after this?"							
Conflict (now or future)/aggression	%	81.9%	68.1%	Conflict/aggression	%	15.1%	38.5%
	Std. Residual	.9	-.7		Std. Residual	-2.0	1.5
Told off/punished	%	6.9%	12.6%	Not right/looks weak	%	7.5%	.0%
	Std. Residual	-1.0	.7		Std. Residual	2.3	-1.6
not right/harm to others	%	6.9%	11.1%	(*Non-specific negative & neg.emotion)	%	11.3%	6.7%
	Std. Residual	-.7	.5		Std. Residual	.8	-.5
(Non-specific Negative)	%	2.8%	.7%	Resolved/adaptive	%	41.5%	47.1%
	Std. Residual	.9	-.7		Std. Residual	-.4	.3
*positive	%	1.4%	7.4%	Right	%	7.5%	1.9%
	Std. Residual	-1.4	1.1		Std. Residual	1.4	-1.0
				(Non-specific Positive)	%	17.0%	5.8%
					Std. Residual	1.7	-1.2
TOTAL Count		72	135	TOTAL Count		53	104
*Question 2: (predicted friends' appraisal) "When you ***, what would you're friends think of you?"*							
Conflict/trouble/punishment/harm	%	7.1%	5.8%	Ought to React	%	21.8%	34.8%
	Std. Residual	.3	-.2		Std. Residual	-1.2	.8
Not right/pointless	%	25.0%	22.3%	Weak/mocked	%	18.2%	18.8%
	Std. Residual	.3	-.2		Std. Residual	-.1	.0
Neg appraisal of P	%	1.8%	18.2%	(Non-specific Negative)	%	.0%	1.8%
	Std. Residual	-2.3	1.6		Std. Residual	-.8	.6
(Non-specific Negative)	%	17.9%	14.9%	Right/nice/kind	%	10.9%	7.1%
	Std. Residual	.4	-.3		Std. Residual	.6	-.5
Right/ought to)	%	21.4%	23.1%	Avoid trouble/adaptive	%	10.9%	12.5%
	Std. Residual	-.2	.1		Std. Residual	-.2	.2
Appraisal of P(Brave/strong/proud)	%	8.9%	6.6%	(Non-specific Positive)	%	38.2%	25.0%
	Std. Residual	.4	-.3		Std. Residual	1.2	-.8
Non-specific Positive)	%	17.9%	9.1%				
	Std. Residual	1.3	-.9				
TOTAL Count		56	121	TOTAL Count		55	112

Table L2. Study 4: Standard Residuals and Column Percentages for ID Group (Questions 3 & 4)

Aggressive Endings		AGG	NAGG	Submissive Endings		AGG	NAGG
*Question 3: (predicted parental appraisal) "When you ***, what would you're parents' think of you?"*							
Risk of trouble/punishment/ hurt	%	9.5%	8.5%		%		23.7%
				Ought to React		27	
	Std. Residual	.2	-.1		Std. Residual	7	.1
Behaviour wrong/pointless	%	12.7%	21.4%		%		6.1%
				Weak/mocked		4	
	Std. Residual	-1.0	.8		Std. Residual	*.1*	-.9
	%	27.0%	28.2%	(Non-specific Negative)	%	11	3.5%
Neg appraisal of P							
	Std. Residual	-.1	.1		Std. Residual	26	.3
(Non-specific Negative)	%	27.0%	18.8%	right/nice/kind	%	13%	9.6%
	Std. Residual	.9	-.7		Std. Residual	26	-.2
Correct action (Right/ought to)	%	12.7%	13.7%	avoid trouble/adaptive	%	10.0%	22.8%
	Std. Residual	-.1	.1		Std. Residual	-1.4	1.0
Appraisal of P(Brave/strong/proud)	%	3.2%	.9%	Emotion	%	8.0C	11.4%
	Std. Residual	.9	-.7		Std. Residual	-.5	.3
(Non-specific Positive)	%	7.9%	8.5%	(Non-specific Positive)	%	32.0%	22.8%
	Std. Residual	-.1	.1		Std. Residual	.9	-.6
TOTAL Count		63	117	TOTAL Count		50	114
Question 4: (predicted affective outcome) "How would doing this make you feel about yourself?"							
Feeling about behaviour	%	50.0%	40.9%	Feeling about behaviour	%	28.1%	30.8%
	Std. Residual	.7	-.5		Std. Residual	-.3	.2
Concern for self (sad, fear)	%	15.2%	10.2%	Concern for self/impression	%	14.0%	15.4%
	Std. Residual	.8	-.5		Std. Residual	-.2	.1
Concern about impression	%	4.5%	7.9%	(Non-specific Negative)	%	1.8%	2.3%
	Std. Residual	-.7	.5		Std. Residual	-.2	.1
(Non-specific Negative)	%	7.6%	9.4%	Avoid trouble	%	12.3%	5.4%
	Std. Residual	-.3	.2		Std. Residual	1.3	-.9
*Positive	%	22.7%	31.5%	Right,nice,kind, happy	%	7.0%	12.3%
	Std. Residual	-.9	.6		Std. Residual	-.8	.6
				(Non-specific Positive)	%	36.8%	33.8%
					Std. Residual	.3	-.2
TOTAL Count		66	127	TOTAL Count		57	130

Table L 3. Study 4: Standard Residuals and Column Percentages for ND Group (Questions 1 & 2)

Aggressive Endings		AGG	NAGG	**Submissive Endings**		AGG	NAGG
Question 1: (predicted consequences) "What do you think would happen after this?"							
Conflict (now or future)/aggression	%	55.1%	75.5%	Conflict/aggression	%	34.8%	28.5%
	Std. Residual	-1.5	1.0		Std. Residual	.6	-.4
Told off/punished	%	17.9%	5.0%	Not right/looks weak	%	21.2%	2.8%
	Std. Residual	2.5	-1.8		Std. Residual	3.5	-2.4
not right/harm to others	%	.0%	9.4%	(*Non-specific negative & neg.emotion)	%	7.6%	2.8%
	Std. Residual	-2.2	1.6		Std. Residual	1.3	-.9
(Non-specific Negative)	%	3.8%	1.9%	Resolved/adaptive	%	31.8%	48.6%
	Std. Residual	.7	-.5		Std. Residual	-1.4	1.0
*positive	%	23.1%	8.2%	Right	%	3.0%	9.0%
	Std. Residual	2.4	-1.7		Std. Residual	-1.3	.8
				(Non-specific Positive)	%	1.5%	8.3%
					Std. Residual	-1.5	1.0
TOTAL Count		78	159	TOTAL Count		66	144
*Question 2: (predicted friends' appraisal) "When you ***, what would you're friends think of you?"*							
Not right/pointless	%	17.5%	17.6%	Ought to React	%	21.0%	25.2%
	Std. Residual	.0	.0		Std. Residual	-.5	.3
Neg appraisal of P	%	9.5%	22.4%	Weak/mocked	%	45.2%	31.8%
	Std. Residual	-1.6	1.1		Std. Residual	1.2	-.8
(Non-specific Negative & Conflict)	%	7.9%	11.2%	(Non-specific Negative)	%	1.6%	4.0%
	Std. Residual	-.5	.4		Std. Residual	-.7	.5
Right/ought to)	%	20.6%	22.4%	Right/nice/kind	%	9.7%	14.6%
	Std. Residual	-.2	.1		Std. Residual	-.8	.5
Appraisal of P(Brave/strong/proud)	%	11.1%	9.6%	Avoid trouble/adaptive	%	9.7%	7.3%
	Std. Residual	.3	-.2		Std. Residual	.5	-.3
Non-specific Positive)	%	33.3%	16.8%	(Non-specific Positive)	%	12.9%	17.2%
	Std. Residual	1.8	-1.3		Std. Residual	-.6	.4
TOTAL Count		63	125	TOTAL Count		62	151

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Table L4 Study 4: Standard Residuals and Column Percentages for ND Group (Questions 3 & 4)

Aggressive Endings		AGG	NAGG	Submissive Endings		AGG	NAGG
Question 3: (predicted parental appraisal) "When you ***, what would you're parents' think of you?"							
Risk of trouble/punishment/ hurt	%	10.3%	27.0%	Ought to React	%	43.8%	18.9%
	Std. Residual	-1.9	1.2		Std. Residual	2.7	-1.8
Behaviour wrong/pointless	%	31.0%	36.5%	Weak/mocked	%	6.3%	7.7%
	Std. Residual	-.5	.3		Std. Residual	-.3	.2
Neg appraisal of P	%	15.5%	10.2%	(Non-specific Negative)	%	.0%	4.2%
	Std. Residual	.8	-.5		Std. Residual	-1.4	.9
(Non-specific Negative)	%	17.2%	10.9%	right/nice/kind	%	10.9%	25.9%
	Std. Residual	.9	-.6		Std. Residual	-1.8	1.2
Correct action (Right/ought to)	%	5.2%	9.5%	avoid trouble/adaptive	%	7.8%	14.0%
	Std. Residual	-.8	.5		Std. Residual	-1.0	.7
Appraisal of P(Brave/strong/proud)	%	20.7%	5.8%	Emotion	%	9.4%	4.2%
	Std. Residual	2.5	-1.6		Std. Residual	1.2	-.8
TOTAL Count		58	137	(Non-specific Positive)	%	21.9%	25.2%
					Std. Residual	-.4	.2
				TOTAL Count		64	143
Question 4: (predicted affective outcome) "How would doing this make you feel about yourself?"							
Feeling about behaviour	%	31.9%	45.4%	Feeling about behaviour	%	22.7%	25.0%
	Std. Residual	-1.2	.8		Std. Residual	-.3	.2
Concern for self (sad, fear)	%	1.4%	5.3%	Concern for self	%	8.0%	5.3%
	Std. Residual	-1.1	.8		Std. Residual	.6	-.4
Concern about impression	%	9.7%	13.2%	Bad about Impression	%	30.7%	24.3%
	Std. Residual	-.6	.4		Std. Residual	.7	-.5
(Non-specific Negative)	%	6.9%	7.9%	(Non-specific Negative)	%	6.7%	7.2%
	Std. Residual	-.2	.1		Std. Residual	-.1	.1
Proud/Happy	%	4.2%	7.2%	Avoid trouble	%	2.7%	14.5%
	Std. Residual	-.7	.5		Std. Residual	-2.1	1.5
Justified	%	6.9%	9.2%	Right,nice,kind, happy	%	6.7%	2.6%
	Std. Residual	-.4	.3		Std. Residual	1.2	-.8
(Non-specific Positive)	%	38.9%	11.8%	(Non-specific Positive)	%	22.7%	21.1%
	Std. Residual	3.4	-2.4		Std. Residual	.2	-.1
TOTAL Count		72	152	TOTAL Count		75	152

Table L5 Study 4: Standard Residuals and Column Percentages for ID & ND Group (Questions 3 & 4)

ID Group		AGG	NAGG	ND Group		AGG	NAGG
Question 5: (predicted own response) "What would you do if this happened to you?"							
Phys Agg	%	18.7%	4.0%	Phys Agg	%	28.8%	9.4%
	Std. Residual	2.8	-2.0		Std. Residual	2.9	-2.1
Verbal Ag/Provoke	%	24.0%	13.3%	Verbal Ag/Provoke	%	35.0%	33.8%
	Std. Residual	1.5	-1.1		Std. Residual	.1	-.1
Passive	%	34.7%	37.3%	Passive/tell someone	%	17.5%	38.8%
	Std. Residual	-.3	.2		Std. Residual	-2.3	1.6
Tell Someone	%	5.3%	6.7%	Assertive	%	15.0%	16.9%
	Std. Residual	-.3	.2		Std. Residual	-.3	.2
Assertive	%	17.3%	32.7%	Unclear/other	%	3.8%	1.3%
	Std. Residual	-1.7	1.2		Std. Residual	1.0	-.7
Unclear/other	%	.0%	6.0%				
	Std. Residual	-1.7	1.2				
TOTAL Count		75	150	TOTAL Count		80	160

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