

**Sibling Aggression: Associations with parenting styles, social dominance behaviour and co-occurring forms of family aggression**

**By**

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## **Abstract**

The thesis aimed to explore the experience of sibling aggression. Previous research has focused on the prevalence, predictors and effects of siblings engaging in aggressive behaviours with one another. However, there is a distinct lack of evidence that has explored the experience of this form of family violence. The thesis made an original contribution to knowledge by exploring the impact of multiple forms of family violence on the use of aggression between siblings, asking victims and/or perpetrators of these aggressive behaviours about their retrospective experiences and developing a quantitative measure of sibling aggression. A mixed methods approach was taken, employing archival, qualitative and quantitative techniques. More specifically, an archival study of the 1975 National Family Violence Survey (NFVS; Straus, Gelles & Steinmetz, 1980) was conducted to explore the relationship between co-occurring aggression and sibling aggression. The findings revealed that as co-occurring verbal or physical aggression increased within the family environment, the frequency of both physical and verbal aggression between siblings also increased. Following this, semi-structured interviews were conducted with victims and/or perpetrators of sibling aggression to explore this form of family violence further, particularly in relation to how aggression differs from play fighting, and the role of normalisation. The interviews identified that although aggressive acts of behaviour may look similar to those for play fighting, the motivations and functions of them differ. More specifically, play fighting was an enjoyable and game-like behaviour for children, whereas sibling aggression often occurred in response to a build-up of negative emotions, to maintain dominance or to overcome verbal arguments. The normalisation of sibling aggression was also important, particularly in relation to how parents responded to their children using aggressive behaviours with one

another. In the third study of this thesis, a questionnaire, the Experiences of Sibling Aggression (ESA) scale, was developed to not only test the themes derived from the interviews on a larger scale, but to also explore differences between victims and perpetrators of this form of family violence. Amongst a sample of participants recruited through social media and on a university campus, a four-factor model of the ESA scale was validated, with subscales that reflected; play fighting, sibling aggression, normalisation and dominance. The ESA scale was also shown to increase the likelihood of predicting mutual sibling aggression, with these participants scoring higher on the sibling aggression subscale (concerning the use of aggression to overcome negative emotions and solve arguments) when compared to a control group of participants who had no previous involvement in aggression with their sibling.

These studies have provided several key contributions to knowledge of sibling aggression. Firstly, they have highlighted the relationship between sibling aggression and multiple forms of family violence. Secondly, they have enhanced the understanding of how play fighting and sibling aggression are conceptualised and differ from one another, highlighting the importance of parents in intervening in these behaviours. Finally, the ESA scale was developed, specifically for the exploration of this form of family violence. The implications of the findings involve the need to consider contextual factors rather than only the individual acts of aggression between siblings. It can be concluded that sibling aggression is a serious form of family violence serving a different function when compared to play fighting among children. This should be reflected in both practice and future research.

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## **Chapter 1**

### **A review of the literature on sibling aggression**

This thesis aims to gain insight into the dynamics of sibling aggression. More specifically, this type of aggression will be explored in relation to co-occurring forms of family violence (i.e. aggression between spouses, children and parents), social dominance behaviours, parenting styles and personality traits. To do this, the research is split into three parts: (1) comparing the different types of family aggression included in the 1975 NFVS (Straus et al., 1980) to assess co-occurring forms of family violence, and to explore whether violent behaviours between siblings are associated with an increased or decreased amount of aggression occurring by and/or towards other family members; (2) using qualitative methods of data collection to gain insight into how perpetrators and victims of sibling aggression retrospectively talk about and account for their sibling relationships; (3) developing and validating a measure of sibling aggression: the Experiences of Sibling Aggression Scale.

This specific chapter aims to provide a background as well a review of the literature on sibling aggression. Firstly, definitions of sibling aggression will be discussed focusing on the types of behaviours engaged in before an exploration of the prevalence of sibling aggression based on previous studies is provided. This will include a discussion of measurement inconsistencies in previous research literature. The literature review will then explore why siblings use aggression towards one another, drawing upon three theoretical perspectives to explain this form of family violence. These are social learning theory (Bandura, Ross, & Ross, 1961), Resource

Holding Power (RHP; Parker, 1974) and social dominance (Hawley, 1999, 2002).

This chapter will then explore perceptions of sibling aggression at a familial and societal level. Finally, drawing on previous studies on sibling aggression, this chapter will highlight the key predictors and consequences of sibling aggression.

### 1.1. Sibling aggression

Approximately 80% of people in the UK and the US grow up with a sibling (Dunn, 2000). The sibling relationship is said to be one of the longest lasting relationships that individuals form (Circirelli, 1995; Dunn, 2000), providing a great deal of emotional support (Hardy, 2001). In particular, research shows that older siblings can teach their younger brothers and/or sisters cognitive and language skills (Brody, 2004). Despite this, there is an emerging literature documenting the potentially negative consequences of having a sibling; that is, brothers and/or sisters can have an impact upon behavioural problems in children, including aggression, anxiety, depression and self-esteem (Dunn, 2000). This section of the thesis will discuss the use of aggression between siblings highlighting issues around definitional inconsistencies and the prevalence of such behaviours.

#### *1.1.1. Defining sibling aggression*

Aggression can generally be defined as any behaviour directed towards another with an immediate intention to cause harm (Anderson & Bushman, 2002). This can be applied to aggression between siblings but when compared to current definitions that specifically describe this form of family violence, there appears to be an inconsistency. That is, the combination of interchangeable terms (e.g. rivalry, conflict, bullying and aggression) that are commonly used to describe this form of

family violence inhibit both the clear understanding of the behaviours that constitute sibling aggression as well as hindering the recognition that this is a societal problem (Eriksen & Jensen, 2009; Phillips, Phillips, Grupp, & Trigg, 2009). This cannot only make generalisations across different research studies difficult (Krienert & Walsh, 2011) but due to the widespread normalisation of these behaviours, it can become difficult to distinguish those which are typical of childhood development, and those that should be considered abusive and in need of intervention (McDonald & Martinez, 2016). This section of the thesis will critically examine the different terminology used to refer to sibling aggression specifically *sibling rivalry*, *sibling aggression*, *sibling bullying* and *play fighting*.

Firstly, *sibling rivalry* is described as a competitive behaviour, often used to gain attention, love or affection from parents (Taylor, 1988). Although this definition does not specifically prescribe individual behavioural acts as ‘sibling rivalry’, this term does suggest that the behaviours occur as a singular function, mainly for parental attention. This places a restriction on the behaviours that can be classed as sibling rivalry. Similarly, terms such as rivalry can be problematic because they cannot indicate the severity of the aggression (Caspi, 2012). This alongside a failure to convey the intent or frequency of the behaviours can make ‘sibling rivalry’ an unhelpful term.

*Sibling aggression* has been used as an all-encompassing term to include four different categories: competition, conflict, violence and abuse (Caspi, 2012). These different aspects are ordered by level of severity with play fighting being considered under the umbrella term of conflict (Caspi, 2012). Using such a broad term (in comparison to sibling rivalry) enables a wider consideration of differing aspects and levels of aggression between siblings (Caspi, 2012). Although this enables many

behaviours to be classified as sibling aggression, it is limited in that no one definition of sibling aggression is proposed. General aggression can be defined as an overt act, with intention to harm, resulting in conflict from a difference in interests amongst individuals (Felson and Russo, 1988). However, the four different factors that Caspi (2012) uses to describe sibling aggression (competition, conflict, violence and abuse) each carry with them their own definitions.

In addition, the term *sibling bullying* has been used frequently within the research literature. Bowes, Wolke, Joinson, Lereya and Lewis (2014) describe this as “a specific type of aggressive behaviour that is repeated over time, intended to both cause harm and to dominate” (p. 2). Although this definition acknowledges the intention to cause harm to a sibling, potentially aiding the discrimination of these behaviours from play fighting, Olweus (1993) proposes that for the term ‘bullying’ to be used correctly, two conditions need to be fulfilled. First that the behaviours should be repeatedly carried out, over time, and second that there should always be a power imbalance, either physical or psychological, meaning that the term bullying should not be used when those involved are approximately the same strength (Olweus, 1993). This could be problematic when describing aggressive behaviours among siblings. For example, it is important that singular behavioural acts of aggression are acknowledged as problematic. As weapon use between siblings does occur (e.g. Khan & Cooke, 2008; McDonald & Martinez, 2016), and these acts may not be repeated, they are likely to contain intention to harm and have potentially severe effects on the victim. Such behaviours can therefore be very different from bullying. In addition, there is evidence that mutual aggressive behavioural acts occur between siblings (Duncan, 1999). This implies that the distribution of power among siblings, who are often relatively close in age, is interchanging and that one sibling

does not always hold a dominant status of power over another. These complexities suggest that Olweus' (1993) two conditions cannot be met and that it is inappropriate to use the term 'sibling bullying' to describe aggressive behaviours among siblings.

Finally, *play fighting* can be "defined as verbally and physically cooperative play behaviour involving at least two children, where all participants enjoyably and voluntarily engage in reciprocal role-playing that includes aggressive make-believe themes, actions, and words; yet lacks intent to harm either emotionally or physically" (Hart & Tannock, 2013, p. 1). These behaviours are said to contain many similarities to direct aggression (Pellis & Pellis, 1996) and this term is often used interchangeably with the rough-and-tumble play in the research literature. In contrast to the alternative definitions explored above, that are used to refer to aggression between siblings, the term 'play fighting' touches on the specific behavioural acts used. For example, Pellegrini and Smith (1998) propose that acts such as running, chasing wrestling, falling, and openhanded slaps are typical play fighting behaviours. By including examples, it can become easier to identify play fighting. However, Hart and Tannock (2013) highlight a lack of intention to harm in play fighting behaviours, which implies that 'intention to harm' is a distinguishing factor between sibling aggression and play fighting.

Aside from play fighting, none of the other described definitions discuss particular acts of aggression. This becomes concerning when exploring the measures used in the research to indicate the prevalence of sibling aggression, as these are frequently act based. Studies such as Tucker, Finkelhor, Turner and Shattuck (2013), Khan and Cooke (2008) and Hardy, Beers, Burgess and Taylor (2010) have used frequency based measures of aggression, such as the CTS (Straus, 1979) to estimate prevalence rates. This focus on the behavioural acts means that play fighting could

be obscured within the prevalence statistics. Without gathering information on the intent or context of the behaviours, frequency based measures may not be helpful in correctly identifying victims and/or perpetrators of sibling aggression. This highlights the importance of further investigation into this area of family violence to see whether the behaviours being measured are reflective of what victims and perpetrators deem to be sibling aggression.

In addition, the comparison between domestic violence and sibling aggression should be noted. In the UK, the Home Office (Woodhouse & Dempsey, 2016) define domestic violence as;

any incident or pattern of incidents of controlling, coercive, threatening behaviour, violence or abuse between those aged 16 or over who are, or have been, intimate partners or family members regardless of gender or sexuality.

The abuse can encompass, but is not limited to: psychological, physical, sexual, financial or emotional (p.4).

Despite the age constraint placed on this definition, the behaviours could be considered similar to those that occur between siblings. Each term relating to sibling aggression discussed has been concerned with physical acts of aggression, attributing the functions of the behaviours as a method for maintaining or exerting dominance. It could therefore be inferred that sibling aggression should be considered as serious as traditional forms of domestic violence such as intimate partner violence (IPV). Given the UK Government's current introduction of policies and guidance for adolescent to parent violence (Home Office, 2015), there is the potential for children under the age of 16 to be considered capable of perpetrating domestic violence. It is therefore important to explore sibling aggression in greater depth, highlighting the

seriousness of this form of family violence. The types of aggressive behaviours that children engage may aid the understanding of sibling aggression.

### *1.1.2. Types of aggressive behaviours shown between siblings*

Aggressive behaviours are seen from an early age in children, often occurring between siblings. These behaviours can take two main forms: proactive and reactive. Reactive aggression is often conducted in response to an emotion, such as anger, frustration or provocation (Crick & Dodge, 1996). In contrast, proactive aggression is often carried out to achieve a desired goal (Crick & Dodge, 1996). Siblings can engage in a range of behavioural acts that are traditionally considered as proactive or reactive aggression. However, they are often perceived as a normal part of child development (Gelles, 1997). The functions and/or motivations of these behaviours, rather than the individual aggressive acts are therefore important in determining intention. Table 1.1 highlights behaviours, definitions and motivations of each type of aggressive act.

*Table 1.1*

Behaviours, definitions and motivations of the different types of aggressive acts

siblings can engage in.

<b>Aggression type</b>	<b>Definition</b>	<b>Behavioural Acts</b>	<b>Motivations</b>
Play fighting	Enjoyable verbal and physical play behaviours, which include aggressive themes, actions and words but lack an intention to harm (Hart & Tannock, 2013)	<ul style="list-style-type: none"> <li>• Grabbing</li> <li>• Hitting</li> <li>• Kicking</li> <li>• Pushing</li> <li>• Wrestling</li> <li>• Chasing</li> </ul> (Tannock, 2011)	<ul style="list-style-type: none"> <li>• Maintaining friendships</li> <li>• To develop skills for emotional control</li> <li>• To develop social skills and scripts</li> <li>• Asserting dominance</li> <li>• Developing skills to manage competitive interactions</li> </ul> (Jarvis, 2007; Smith et al., 2004; Pellegrini, 2002a; Pellis, Pellis & Foroud, 2005; Smith & Pellegrini, 2008)
Bullying	Aggressive or harmful behaviours that are intentionally and repeatedly carried out, often involving an imbalance of power. (Olweus, 1993)	<ul style="list-style-type: none"> <li>• Hitting</li> <li>• Social exclusion</li> <li>• Name calling</li> <li>• Threatening</li> <li>• Teasing</li> <li>• Pushing</li> <li>• Kicking</li> <li>• Restraining</li> <li>• Spreading rumours</li> </ul> (Juvonen, Graham & Schuster, 2006; Sapouna & Wolke, 2013; Olweus, 1993)	<ul style="list-style-type: none"> <li>• Maintaining a high status among peers</li> <li>• A response to a need to control and subdue others</li> <li>• To feel a sense of satisfaction from inflicting harm on others</li> </ul> (Olweus, 1993; Pellegrini, 2002b)
Verbal aggression	Verbal or non-verbal communication intended or perceived to intend to cause psychological harm to another individual. (Vissing, Straus, Gelles, & Harrop, 1991)	<ul style="list-style-type: none"> <li>• Threatening</li> <li>• Ridiculing</li> <li>• Insulting</li> <li>• Terrorising</li> <li>• Belittling</li> <li>• Name calling</li> <li>• Stony silence</li> <li>• Sulking</li> </ul> (Caffaro & Conn-Caffaro, 2006; Vissing et al., 1991; Weihe, 1997)	<ul style="list-style-type: none"> <li>• A substitute or precursor to physical aggression</li> <li>• In response to a high level of psychosocial problems</li> </ul> (Infante, Sabourin, Rudd, & Shannon, 1990; Vangelisti, 1994; Vissing et al., 1991)

Psychological aggression	The use of non-physical behaviours to deliberately cause harm to another sibling (Caspi, 2012)	<ul style="list-style-type: none"> <li>• Belittling</li> <li>• Intimidating</li> <li>• Provocation</li> <li>• Destroying possessions</li> <li>• Torturing/killing pets</li> <li>• Rejecting/isolating</li> <li>• Terrorism</li> <li>• Ignorance</li> </ul> (Garbarino & Vondra, 1987; Hart & Brassard, 1987; Weihe, 1997; Whipple & Finton, 1995)	<ul style="list-style-type: none"> <li>• Reaction to maltreatment from another sibling</li> <li>• Asserting dominance</li> </ul> (Whipple & Finton, 1995)
Physical aggression	Assertive physical contact, where one sibling intends to physically harm another (Abramovitch, Corter, & Lando, 1979; Morrill-Richards & Leierer, 2010)	<ul style="list-style-type: none"> <li>• Pushing</li> <li>• Hitting</li> <li>• Kicking</li> <li>• Using weapons to intentionally cause harm</li> <li>• Shoving</li> <li>• Biting</li> <li>• Pinching</li> <li>• Scratching</li> <li>• Hair pulling</li> </ul> (Abramovitch et al., 1979; Caffaro & Conn-Caffaro, 2006; Weihe, 1997)	<ul style="list-style-type: none"> <li>• Reinforcement of family and relationship roles</li> <li>• A way of retaliating against a perceived favoured child</li> <li>• Dealing with negative emotions</li> <li>• Reaction to dealing with other forms of family violence</li> <li>• To maintain a high status of dominance</li> </ul> (Green, 1984; Hawley, 2003a; Raffaelli, 1992)

Table 1.1 shows various similarities and differences among the different aggressive acts. These primarily concern the overlap between play fighting and bullying with physical, psychological and verbal aggression. These are discussed in turn.

Play fighting and physical aggression between siblings have similarities in terms of the behavioural acts they entail but differ greatly in their intention and motivation. Similar behavioural acts include hitting, kicking, pushing and wrestling (Caffaro & Conn-Caffaro, 2006; Tannock, 2011). However, play fighting does not contain the same malicious intent to harm that physical aggression does. The acquisition of important skills show play fighting in a more positive light, and for many children

the experience of engaging in these behaviours is enjoyable (Hart & Tannock, 2013). The motivations of aggression, on the other hand, are concerned with negative motivational factors, which are intentionally harmful to those involved. It is therefore important to consider play fighting in relation to sibling aggression. It is possible that siblings that use aggression towards one another will also engage in play fighting behaviours, whereas for others, all fighting may be play.

Bullying is also similar to play fighting and aggression (i.e. verbal, psychological and physical) in terms of the behavioural acts used, whilst remaining distinctly different in intent and motivation. Similar acts include hitting, kicking and name calling (Caffaro & Conn-Caffaro, 2006; Sapouna & Wolke, 2013; Tannock, 2011). Although bullying and aggression both include an intention to cause harm, one of the defining factors of bullying concerns the repetition of behaviours over time, whereas aggression can include single instances (as discussed in Section 1.1.1). The further motivations for aggression (verbal, psychological and physical) that have been linked to psychosocial problems, dealing with negative emotions and the reinforcement of family and relationship rules (Raffaelli, 1992; Vissing et al., 1991; Whipple & Finton, 1995) show the complex nature of the function of these behaviours. This is a stark contrast to the motivations for bullying that primarily concern the need to control others and to maintain a high social status (Olweus, 1993; Pellegrini, 2002b).

Exploring aggressive acts in relation to their intent and motivation is important in relation to sibling aggression. Looking at the behavioural acts alone may be misleading when investigating this form of family violence and it is clear that no single definition of sibling aggression can reach a high level of agreement amongst researchers. There are of course, other terms and types of behaviours used that are

not described here. This section of the literature review has focused on some of the most common terms and types of aggressive behaviours engaged in to provide a critical discussion. Following this, the thesis will use the term ‘sibling aggression’ throughout. The broad scope that the definition proposed by Caspi (2012) takes will allow for the full spectrum of the behaviours to be included. In the different studies included in the thesis, participants were asked to self-identify themselves as victims/perpetrators of this form of family violence. This is an attempt to overcome the issue of neglecting people who identify themselves as victims and/or perpetrators of this form of aggression but cannot be included in the study because their experiences do not fit with a prescribed definition, similar to studies such as that of McDonald and Martinez (2016). Limitations in the research on this area of aggression are partly related to the lack of a clear distinction between play and sibling aggression, illustrating a practical need to consider how differences can be identified. This thesis aims to contribute to this distinction by ameliorating the differentiation between play and aggression.

### 1.1.3. *Prevalence of sibling aggression*

Notwithstanding the debate surrounding the definition and measurement of sibling aggression, much of the available research in the literature has explored the prevalence of the kinds of behaviours that tend to be defined as such. Sibling aggression has only started to be recognised within the research literature in the past forty years. The first studies in the field found high rates of physically aggressive behaviours being used amongst siblings, with prevalence rates ranging from 82% (Straus et al., 1980) to 91% (Roscoe, Goodwin, & Kennedy, 1987) and verbal aggression rates as high as 99% (Steinmetz, 1977a). Although the research may

appear dated, more recent studies have shown that these high rates are still present in families today, with figures as high as 90% (Relva, Fernandes, & Mota, 2013), with step siblings having a greater risk of aggression and injury when compared with natural siblings (e.g. Deater-Deckard, Dunn, & Lussier, 2002; Jenkins, Simpson, Dunn, Rasbash, & O'Connor, 2005; Tanskanen, Danielsbacka, & Rotkirch, 2015). Similarly, sibling aggression has been frequently found to be mutual, as many of the victims also use aggression themselves and vice versa, so victimisation is associated with perpetration (Goodwin & Roscoe, 1990; Tippett & Wolke, 2015).

### Age Differences

Age has been shown to have an impact on the use of aggression between siblings, with the frequency of these behaviours decreasing as children become older (e.g. Cole & Kerns, 2001; Straus et al., 1980; Tippett & Wolke, 2015). A number of reasons have been proposed for this reduction in aggression. More specifically, it has been suggested that as children become older, they learn new methods to resolve conflict (Straus et al., 1980) and with this, become less reliant on physical aggression (Gelles, 1997; Recchia & Howe, 2009; Steinmetz, 1977b) increasing their use of verbal aggression with a sibling (Steinmetz, 1977b). Secondly, as they age, the function of the conflicts between siblings' changes, moving away from matters that concern the possession of objects, to those surrounding the individual's personal space (Steinmetz, 1977b). This, when combined with the increased time that children spend with their peer groups as they become older will reduce the amount of time spent with siblings (Gelles, 1997). This can be linked to routine activities theory (Cohen & Felson, 1979), which proposes that when the three elements of motivated offenders, suitable targets and the absence of a guardian come together, the greater

likelihood of crime. As children spend less time with their siblings as they grow older (Gelles, 1997), there is no longer a suitable target for aggression. This could therefore reduce the frequency of aggression between siblings because they are spending less time together.

Additionally, the age composition of groups of children has also been found to influence rates of aggression between siblings. More specifically, older siblings have been found to have higher perceptions of dominance within the sibling group in relation to their higher status and power when compared to younger siblings (Bigner, 1974; Furman & Buhrmester, 1985). That is, having a greater size, strength and height contributes to a higher status of dominance, meaning that they will have a greater share of desirable materials than their siblings with a lower status (Pratto, Sidanus & Levin, 2006). Therefore, due to their physical differences (Parker, 1974), older siblings are most often the perpetrator of aggression towards their sibling and younger siblings most likely to be victims (Graham-Bermann & Cutler, 1994). It has been suggested that this perceived power difference will encourage younger siblings to model the behaviours of their older siblings (Bigner, 1974). This modelling could encourage the likelihood of younger siblings using aggression to resolve conflict, increasing the likelihood for aggression between siblings.

### *Sex Differences*

The research on sex differences in the perpetration and victimisation of sibling aggression is mixed. Some research has found boys to be more aggressive to a sibling than girls, at all ages (e.g. Graham-Bermann, Cutler, Litzenberger, & Schwartz, 1994; Ostrov & Keating, 2004; Straus et al., 1980; Tippett & Wolke, 2015; Tucker, Finkelhor, Shattuck, & Turner, 2013). This can be explained through

the differences in RHP (Parker, 1974) that exist between girls and boys. By being the bigger, taller and stronger sibling, which boys often are, they may hold a higher status and therefore be more likely to engage in aggression to solve conflict because they are likely to be more successful in physical fights (Parker, 1974). However, other studies have found that aggression is often mutual, with girls and boys using similar levels of aggression with siblings (Duncan, 1999; Goodwin & Roscoe, 1990; Roscoe et al., 1987) or girls to be more aggressive than boys (Tanrikulu & Campbell, 2015). A reason for this disparity could come from the way that prevalence was measured. For example, Duncan (1999) used the Peer Relations Questionnaire (PRQ; Rigby & Slee, 1993) which measured the tendency for children to bully one another whereas Straus et al. (1980) used the Conflict Tactics Scale (CTS; Straus, 1979), which measured the frequency of specific behavioural acts across a given time (see Section 1.2 for a description of each of these measures). The measures differed in relation to the breadth of behaviours used to indicate whether aggression is present. The PRQ (Rigby & Slee, 1993) asks only five questions about sibling aggression, whereas the CTS (Straus, 1979) asks about very specific behavioural acts (e.g. pushed, punched, kicked). It is therefore possible that differences in terms of the breadth of acts covered in the measurement of this form of family violence influences the prevalence statistics found. Despite this, the mixed findings regarding such gender differences indicate that this form of family aggression may not be gender specific, and mutual perpetrators and victims should also be considered.

### *The Use of Verbal Aggression*

Although many studies within the field have focused on physical aggression between siblings, some have also studied the use of verbal aggression. Verbal sibling

aggression has been found to occur in the majority of cases, and may be a method of conflict resolution (Steinmetz, 1977a). The frequency of verbal aggression between siblings has been seen to double between age 2 to 4 years and then become relatively stable for children aged approximately 6 years of age or older (Perlman, Garfinkel, & Turrell, 2007). Perlman et al. (2007) have proposed that between the ages of 2 and 4 years, children gain the cognitive capacity and verbal skills to increase their use of verbal aggression toward a sibling. As the use of verbal aggression has been seen to occur in many instances, at a high frequency (Steinmetz, 1977a), it is likely that the behaviours could be a precursor to physical aggression. Verbal aggression is said to have a positive relationship with physical aggression (Stets, 1990). For example, using data from the 1985 NFVS, Stets (1990) found that generally, individuals went through the stages of no aggression to verbal aggression and finally, physical aggression. Stets (1990) proposes that the decision to become verbally aggressive involves an individual defining themselves as an aggressive person and that with this comes the potential to engage in physically aggressive behaviours. However, this process will be impacted by familial and cultural norms surrounding aggression (Stets, 1990).

Overall, it has been demonstrated that both verbal and physical aggression occur frequently between siblings in the family environment. However, looking solely at individual behavioural acts does not show whether the behaviours are experienced positively, as play fighting, or negatively as sibling aggression. It is therefore important to look beyond the figures and into why siblings are using this aggression towards one another by exploring the purposes and functions that the behaviours serve.

## 1.2. Measuring sibling aggression

Despite the growing research literature on sibling aggression, the measures used to explore this form of family violence have not developed to the same degree. When reporting the prevalence of sibling aggression, researchers either ask participants whether they have engaged in aggression with their sibling (or similar) or administer existing measures of aggression, adapting them for use with this particular sample (e.g. Duncan, 1999; Steinmetz, 1977a). Each of the measures used in the literature are primarily quantitative in nature, focusing on collecting a large quantity of data from many participants. Three of the most established measures used to explore the prevalence of sibling aggression are the *Conflict Tactics Scales* (CTS, CTS2; Straus, 1979; Straus, Hamby, Boney-McCoy, & Sugarman, 1996), the *Peer Relations Questionnaire* (Rigby & Slee, 1993) and the *Juvenile Victimization Questionnaire* (Hamby, Finkelhor, Ormrod, & Turner, 2004). Each of these will be discussed in turn, looking at the ability of these measures to apply to siblings.

### *1.2.1. The Conflict Tactics Scale (Straus, 1979) and Conflict Tactics Scale 2 (Straus et al., 1996)*

Two of the most commonly used measures, not only in the sibling aggression literature but also in the family violence literature are the CTS (Straus, 1979) and CTS2 (Straus et al., 1996). These specific measures are based on conflict theory which posits that conflict is a natural part of relationships but the use of violence to resolve such issues is not (Straus et al., 1996). The measures are designed to be used for any relationship in the family, whether this is between spouses, children and parents or siblings (Straus, 1990). The CTS (Straus, 1979) contains three different

subscales (1) negotiation (2) psychological aggression and (3) physical assault that can be further broken down into severe and non-severe behaviours. Each item in the questionnaire is a specific behaviour asked about twice, from the perspective of the participant being a victim of the specific act and from the perspective of the participant being a perpetrator of the same behaviour. In 1996, the CTS was revised and a specific version was designed for use with siblings, the CTS2-SP (Straus et al., 1996). This contained the original three subscales of negotiation, psychological aggression and physical assault alongside an additional two subscales of sexual coercion and injury. The wording of some of these items was also changed to make it easier for participants to complete the questionnaire. Since the revision of the CTS, this measure of sibling aggression has been used in a number of studies (Mackey, Fromuth, & Kelly, 2010; Reese-Weber, 2008).

Despite being a popular tool to measure the prevalence of sibling aggression (e.g. Hardy et al., 2010; Khan & Cooke, 2013; Mackey et al., 2010) there are several criticisms of both versions. These need to be considered when interpreting the findings in this area. The biggest criticism of both the CTS and CTS2 is the failure to take the context of the behaviours into account (DeKeseredy & Schwartz, 1998; Straus, 1990), only considering aggression as part of resolving a disagreement and ignoring aggressive acts from unknown causes (DeKeseredy & Schwartz, 1998). In response, Straus (1990) stressed that to include context additional measures should be used alongside the CTS/CTS2 to gather more information, specific to the aims of the study. Care should be taken when drawing conclusions from prevalence studies that have used only the CTS/CTS2 to collect data, as siblings have the propensity to engage in play fighting behaviours, which are seen as developmentally useful for social and cognitive skills (DiCarlo, Baumgartner, Ota, & Jenkins, 2014).

Similarly, both the CTS and CTS2 have been criticised for the limited numbers of violent acts included (Straus, 1990). Reasons of practicality have been given for this, as participants would not want to complete questionnaires that are too long (Straus, 1990). Also, the behaviours have been seen to occur universally, so can be applied cross culturally, whilst being general enough to apply to each of the relationships that the CTS/CTS2 is designed for use with (Straus, 1990). For this reason, the behaviours may appear limited. When applied to sibling aggression research, it could be suggested that there are some omissions of acts that could occur frequently between siblings (e.g. wrestling), whilst other acts might be very unlikely to occur, especially within the UK sample that this thesis will seek to gather (e.g. threatened with a gun). This will need consideration before this specific measure is used in the current thesis.

There have been a number of studies that have explored the validity of the CTS and CTS2 for the measurement of IPV, by looking at whether the subscales (negotiation, psychological aggression, physical aggression and for the CTS2, the extra subscales of sexual coercion and injury) are distinct in a variety of samples (e.g. Jones, Ji, Beck, & Beck, 2002; Yun, 2011). The findings have been mixed here. For example, Grana, Andreu, Pena and Rodriguez-Biezma (2013) found a reliable structure of all factors of the CTS2 in a Spanish sample of IPV, supporting both the reliability and validity of this measure. However, the same has not been found in other samples. More specifically, the distinction between severe and non-severe has been difficult to find (Yun, 2011), with some overlap between some of the factors in samples of incarcerated females. This has been with both the overlap between psychological and physical aggression (Jones et al., 2002) and a difficulty of finding

distinct physical aggression, sexual coercion and injury subscales (Lucente, Fals-Stewart, Richards, & Goscha, 2001).

Despite the various limitations, the positive aspects of this measure should also be noted. For example, the test re-test reliability and construct validity of the measures has been shown to be strong in samples of IPV (Straus & Mickey, 2012; Vega & O'Leary, 2007). Specific to sibling aggression, studies such as Relva, Fernandes and Costa (2013) and Khan and Cooke (2013) have found good levels of validity when using these measures in Portuguese and severe samples of sibling aggression. This shows that both the CTS and CTS2 have the potential to apply to siblings. By covering such a large number of conflict resolution behaviours, there is a clear utility for the measure to be used with sibling aggression, but the overlap between play fighting and aggressive behaviours cannot be ignored. It is very unclear from the prevalence literature whether this distinction has been made. Future research should seek to gather information about the context of the behaviours before deeming the relationship as aggressive based on the frequency of a set of behavioural acts alone.

#### *1.2.2. The Juvenile Victimization Questionnaire (Hamby et al., 2004).*

Unlike the CTS and CTS2 (Straus et al., 1979; 1996), the Juvenile Victimization Questionnaire (JVQ; Hamby et al., 2004) has been used in very few studies to measure the prevalence of sibling aggression. This is a 34-item measure and includes subscales on conventional crime, child maltreatment, peer and sibling victimisation, sexual victimisation, and witnessing and indirect victimisation. It measures experiences of victimisation over the previous year. As this a more recently developed measure used in the literature, there has been little in the way of

validation studies. To date, only four have been conducted that specifically look at this. These have been conducted across different countries and cultures, namely, China (Chan, Fong, Yan, & Chow, 2011; Cheng, Cao, Liu, & Chen, 2010), Spain (Forns, Kirchner, Soler, & Paretilla, 2013) and the USA (Finkelhor, Hamby, Ormrod, & Turner, 2005).

The JVQ (Hamby et al., 2004) has been shown to have a good level of internal consistency in both Chinese and Spanish samples (Chan et al., 2011; Cheng et al., 2010; Forns et al., 2013) with all of the items of the questionnaire being acceptable to participants (Forns et al., 2013). However, Finkelhor et al. (2005) found there was some overlap between the different factors of victimisation. Although this could question the reliability of the JVQ (Hamby et al., 2004), the five distinct factors have been found in a Spanish sample of participants (Forns et al., 2013). This suggests a need for further research exploring the reliability of this measure, especially because this is so limited at present.

The JVQ (Hamby et al., 2004) has been used to explore the prevalence of sibling aggression (e.g. Tucker et al., 2013). However, as this measure focuses entirely on the victimisation component of these behaviours, it cannot be used solely to explore the prevalence of sibling aggression, so is limited in this way. This could explain the lack of studies within this particular field that have used the JVQ (Hamby et al., 2004) and should be taken into account when deciding what measures to use in any research within this field.

Overall, the JVQ (Hamby et al., 2004) would not be a useful tool to explore not only the perpetration of sibling aggression but also the mutuality of the behaviours. The prevalence research described in Section 1.1.3 of this chapter has

shown the propensity for this type of aggression to be mutual. Measures in this area should therefore seek to explore the victim/perpetrator dynamic in much more detail.

### *1.2.3. The Peer Relations Questionnaire (Rigby & Slee, 1993).*

The Peer Relations Questionnaire (PRQ; Rigby & Slee, 1993) has been used to measure sibling aggression in only a very small number of studies looking at the prevalence of sibling aggression (e.g. Duncan, 1999) and similarly there is a distinct lack of research that has explored the validity and reliability of this measure. The PRQ is a 12-item questionnaire that contains subscales; ‘tendency to bully’, ‘tendency to be victimised’ and ‘prosocial tendency’. This was developed for use with Australian children (Rigby & Slee, 1993). However, to measure aggression between siblings, Duncan (1999) added eight questions and changed the wording to make the items more appropriate for an American sample. Although there have been no studies that have explored the psychometric properties of the PRQ (Rigby & Slee, 1993), it has been shown to have a good level of internal consistency, evidenced by good Cronbach’s alpha levels (Rigby & Slee, 1993).

It can therefore be concluded that further research on the PRQ (Rigby & Slee, 1993) is needed assess the specific ability of this measure for use with siblings. This could possibly contribute to the reasons why this has only been used in one study of sibling aggression (e.g. Duncan, 1999).

### *1.2.4. Further measures of sibling aggression*

Although the research literature has often made use of existing aggression measures for studies on siblings, two have been developed specifically for use between siblings; the Sibling Relationship Questionnaire (SRQ; Furman &

Buhrmester, 1985) and the Brother Sister Questionnaire (BSQ; Graham-Bermann & Cutler, 1994). Each of these will be discussed in turn.

*The Sibling Relationship Questionnaire (SRQ; Furman & Buhrmester, 1985).*

The SRQ (Furman & Buhrmester, 1985) was developed to assess the qualities of sibling relationships, focusing on the entire sibling relationship. The measure consists of 48 items that measure four subscales. These are; warmth/closeness, relative status/power, conflict and rivalry (Furman & Buhrmester, 1985). There has been limited research that has explored the psychometric properties of this measure. For example, O'Neill, Talanti, McCarthy, Adamis and Tsamparli (2015) have evaluated the use of the SRQ in Greek samples, finding good levels of reliability and internal consistency. Similarly, in Furman and Buhrmester's (1985) development of the BSQ, they found a good level of internal consistency. These findings indicate that the SRQ (Furman & Buhrmester, 1985) is a valid and reliable measure that explores the sibling relationship.

An advantage of this measure comes from the use of interviews as a method of developing specific items on the questionnaire, with the specific focus of this questionnaire being to gain further insight into the sibling relationship. The broad focus that the questionnaire takes could however, be a limitation of the measure.

Although aggressive behaviours between siblings are included in the SRQ (Furman & Buhrmester, 1985), through the subscales of conflict and rivalry, it seems that there is no distinction between play and sibling aggression. Again, this is a factor that has been overlooked or minimised in much of the sibling aggression literature. The SRQ (Furman & Buhrmester, 1985) could therefore be more appropriate for measurement of the entire sibling relationship rather than looking at

only sibling aggression. Future measures should aim to distinguish between those behaviours considered play and aggression in a greater level of depth.

*The Brother Sister Questionnaire (BSQ; Graham-Bermann & Cutler, 1994).*

The BSQ (Graham-Bermann & Cutler, 1994) was developed to discriminate between functional and dysfunctional sibling relationships. Graham-Bermann and Cutler (1994) acknowledged that there were difficulties distinguishing between normal aggression and sibling aggression and developed the BSQ accordingly, so that it could identify very aggressive sibling relationships from normal ones. Their measure consisted of 35 items with the subscales of empathy, boundary maintenance, similarity and coercion. Graham-Bermann and Cutler (1994) found the BSQ to have good test-retest reliability with support to show that it could distinguish between high and normal levels of conflict in sibling relationships. Only one study has sought to explore the psychometric properties of this measure, namely the validity and reliability. Relva, Fernandes, Alarcao, Graham-Bermann and Lopes (2016) found similar underlying constructs to those proposed by Graham-Bermann and Cutler (1994) in a Portuguese sample of adolescents. This was indicative of a good level of construct reliability (Relva et al., 2016).

Although the BSQ (Graham-Bermann & Cutler, 1994) was based on self-reports of conflict from participants; that is, they indicated the extent to which the level of conflict experienced was different or similar to other families, the way that their questions were devised could be problematic. Although they acknowledged that the definitions of this form of family violence are very unclear, existing sibling development theories were used to inform their questionnaire design. Although this is a step forward for the measurement of sibling aggression, it fails to consider

factors that could be important from a family violence perspective. Future research should therefore ask victims and perpetrators of sibling aggression about their experiences and establish the factors that were important to them and then develop a measure based on this. Not only would it carry more validity but it would also be unique to the study of sibling aggression, rather than a mixture of multiple theories.

#### *1.2.5. Limitations of using existing measures of aggression with siblings*

The literature reviewed so far has discussed the ability of existing questionnaires to explore sibling aggression through exploring their respective strengths and limitations. The clear strengths come from the ability of the measures to explore a clearly under researched form of family aggression, with researchers being able to gain a wealth of information from participants. However, a limitation concerns the ability of the measures to distinguish between play fighting and sibling aggression.

What the current research lacks, and one of the aims of this thesis, is to explore the dynamics of sibling aggression in much greater depth. The measurement literature currently focuses on the specific acts of aggression rather than the intent and context of them. This could lead to acts of play fighting that may outwardly appear aggressive being classed as problematic in the prevalence literature, potentially inflating prevalence rates. That is not to say that the behaviours are not serious, but that studies that have used existing measures of aggression with siblings should be treated with caution, especially when documenting the effects of sibling aggression on children, as these highlight the greatest need for intervention.

Although there does appear to be a move towards specifically exploring intention in the literature (e.g. Eriksen & Jensen 2009; Khan & Cooke, 2008), the context and motivation of such behaviours need to be considered in a greater level of depth.

In addition, there are only two measures that have been specifically developed for use with siblings. Firstly, the BSQ (Graham-Bermann & Cutler, 1994) was designed to distinguish between normal and highly conflicted sibling relationships. However, the measure was developed based on previous theories of childhood sibling development and not on the family violence or general aggression literature. This is problematic in that such theories do not aid the distinction between play and aggression among siblings. Also the SRQ (Furman & Buhrmester, 1985) was developed to assess the sibling relationship. However, the broad focus means that the distinction between play and aggression amongst siblings is difficult to ascertain. These measures could each be improved as by taking a narrow view of sibling aggression, fundamental aspects of the behaviours could be neglected, either overestimating the prevalence rates and classifying people as perpetrators or victims of the behaviours when they are not. The theoretical explanations of sibling aggression may help to explain the function and context of such behaviours.

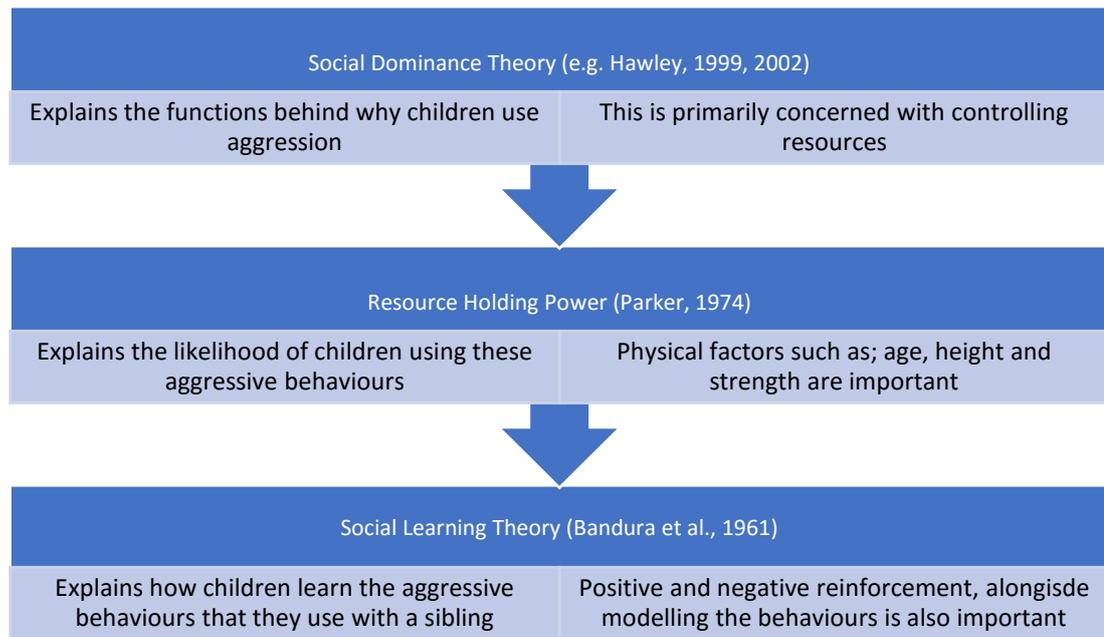
### 1.3. Theoretical explanations of sibling aggression

Existing research has applied many different theories in an attempt to explain aggression between siblings. These have ranged from evolutionary principles; including relatedness (e.g. Tanskanen et al., 2015), sexual selection theory (Archer, 2004) and RHP (e.g. Archer, 2012; Parker, 1974), social psychological theories, which include social learning theory (e.g. Archer, 2004; Faith, Elledge, Newgent, & Cavell, 2015) and dominance theory (Faith et al., 2015; San Kuay et al., 2016) to family systems theory (e.g. Recchia & Howe, 2009; Whiteman, McHale & Soli,

2011). Though established in their respective fields, this thesis argues that no single theory can adequately explain the process of sibling aggression in its entirety.

Rather, it is proposed that a number of theories, combined, explain this form of family violence in a greater level of depth. Specifically, this thesis adopts social dominance theory (e.g. Hawley, 1999, 2002), RHP (Parker, 1974) and social learning theory (Bandura et al., 1961) in an attempt to explain sibling aggression. These specific theories (depicted in Figure 1) were chosen to understand the functions, likelihood and development of aggression between siblings. Each theory focuses on specific aspects of this process.

Firstly, social dominance can provide children with the motivation to use aggression with their sibling, primarily, to gain control of resources (e.g. Hawley, 1999, 2002). However, children will consider the contributing factors to an individual's RHP, such as height, size and age (Parker, 1974) before deciding to engage in these behaviours. Finally, the methods that children use could be learnt through the modelling and imitation principles of social learning theory (Bandura et al., 1961). Although these theories offer their own accounts of aggression, they are complementary to one another.



*Figure 1: A diagram illustrating the three theoretical approaches and how they link together to explain sibling aggression*

Given the difficulties that surround defining and measuring this form of family violence, it is important to look beyond the individual acts of aggression and instead at the context and functions in which the behaviours take place. This will not only provide a unique perspective on sibling aggression, but will provide a greater level of understanding about how this form of family violence can adequately be measured. Each of the three theories will be discussed in turn, including how they can be applied to aggression between siblings.

### *1.3.1. Social dominance theory*

Social dominance theory is concerned with the relative social status or control that certain groups have over others, with individual members of dominant groups having a higher level of social status (Pratto et al., 2006). Within groups, control of resources is an important component that individuals seek to gain.

Prosocial (e.g. helping and sharing) and coercive methods (e.g. aggression and hostility) can be used to gain control of resources (Eagly, 2009; Hawley, Shorey, & Alderman, 2009). To use prosocial methods, children need to develop a degree of social skills. So the more socially competent an individual is, the greater dominance they are able to hold within a group, as they will be better equipped to gain control of resources (Hawley, 1999, 2002). Although often criticised for the limitations that they place on how the control of resources is sought (Choi, Johnson, & Johnson, 2011), social dominance theory proposes a clear function for the use of aggression combined with prosocial methods, with clear reasons for why children use these behaviours. Research with children has found that those with a higher status of dominance use combinations of coercive and prosocial behaviour rather than only one method (Hawley, 2002; 2009). Younger children often use aggression more, with this decreasing as they become more mature, mastering the prosocial alternatives to get what they want, suggesting that the development of social skills, that enable children to use prosocial behaviours, develops with age (Pellegrini, 1995).

In contrast to maintaining control of resources through social dominance behaviours, some children fall into a non-controlling category, using neither prosocial nor aggressive behaviours (Hawley, 2003a, 2003b). These children exhibit low levels of resource control, social skills and are often rejected or victimised by peers (Hawley, 2003a; Hawley, Johnson, Mize, & McNamara, 2007). However, they do not consider themselves to be lonely or without friends (Hawley, Little, & Pasupathi, 2002). This group is considered interesting because they do not seek to control resources. It would therefore be interesting to see how they meet their needs,

particularly when trying to get something that they want. The thesis will seek to explore this when looking at in depth accounts of sibling aggression.

The attitudes that children hold towards particularly dominant members of a group can also impact upon the eminence of an individual. Eminence is where others admire an individual holding high status and social power (Bierstedt, 1950).

Aggression may increase eminence in environments where the behaviours are perceived as socially acceptable, such as between siblings. A second example comes from youth gangs where minor crimes and aggression are frequently more normative and valued than other similar aged peer groups (Alleyne & Wood, 2010). Therefore, those who lack the skills to gain resource control in non-aggressive ways could rely on aggressive behaviours if they reside in a deviant peer group. However, coercive or aggressive behaviours are used more often in childhood than in adulthood to maintain dominance within the group (Hawley, 2002), even though some subcultures may support the use of aggression in adulthood. One reason for the reduction of physical aggression with age could come when children realise that the costs frequently outweigh the benefits of such behaviours (Pellegrini et al., 2007) and that their ability to use alternative strategies to aggression is sufficiently developed. Not all children show this reduction or cessation in the use of aggression with age however. Broidy et al., (2003) found aggression in childhood to be related to violent offending in adulthood, suggesting that some children do not learn to desist or decrease their use of aggressive behaviours. Similarly, there can be negative consequences within the family environment, such as family separation (Sprey, 1969) and although successful in the short term may contribute to a failure of the child to develop adequate nonaggressive problem solving skills necessary for later life (Husemann, 1998). Nevertheless, aggression can, at times, be considered

adaptive from an evolutionary point of view, in that, it is used as a mechanism to solve a presented problem (Buss & Shackelford, 1997).

As social dominance theory primarily concerns itself with group processes in controlling resources, the personality traits that children hold could also contribute to their use of aggression. When applied to the use of aggression between siblings, this theory implies that children will use aggressive behaviours to develop and maintain a hierarchy within the sibling group. Once a dominant sibling is apparent and the hierarchy is developed, the use of aggressive behaviours should diminish (Roseth, Pellegrini et al., 2007). Pellegrini et al. (2007) have supported this, finding that aggression to maintain control of resources decreased as children became older. This could therefore apply to sibling aggression. Those children who are competing for resources (e.g. possessions) achieve dominance using aggression. As the children become older, and have an established hierarchy within the sibling group, they will learn prosocial alternatives to their aggression, which will enable them to maintain control of resources without relying on aggressive behaviours (e.g. Hawley 1999; 2002). This has also been reflected in how siblings use aggression towards one another. For example, as many siblings are mutual victims and perpetrators of aggression, their hierarchy and the associated dominance that comes with this could change due to the amount of time that they spend with one other (Tippett & Wolke, 2015). It would therefore be interesting to try and understand the role of social dominance in greater detail in situations of sibling aggression, where many victims are also perpetrators and vice versa.

### *1.3.2. Resource holding power*

Evolutionary theories contend that aggression has been carried through the generations as a tool to solve adaptive problems, including; competition for resources and mates, self-defence, to maintain power and to deter others from future aggression (Buss & Shackelford, 1997). However, before individuals engage in aggressive behaviours, they need to assess their chances of winning a physical contest. To do this, they will look at the specifics of the encounter, which reflect an individual's RHP (Parker, 1974). This includes attending to cues such as height, weight and age to determine whether the target of their aggression has a higher fighting ability or RHP than themselves, only becoming involved in aggression if the perceived benefits outweigh the costs from their opponent or those around them (Parker, 1974).

The research in this area has looked at whether the cues that contribute to an individual's RHP are considered before engaging in fighting behaviours. This has found that factors such as size, number of allies and the reputation of an opponent are considered before deciding whether to use aggression towards an individual (Archer & Benson, 2008). This seems an appropriate step to take because higher levels of strength, height and weight have been linked to a greater likelihood of engaging in direct aggression and higher levels of anger (Archer & Thanzami, 2007). Similarly, greater levels of these factors, such as height, weight and strength have been associated with higher levels of testosterone (Tremblay, Schaal, Boulerice, Arsenault, Soussignan, Paquette & Laurent, 1998). As males produce a higher amount of testosterone in relation to females, they are said to have a naturally higher status of RHP (Archer & Benson, 2008). This will therefore be an important factor in deciding whether to engage in aggression with another male. RHP could be an

important factor when siblings are deciding whether to engage in aggression with one another. The higher status that individuals with high levels of RHP hold facilitate higher social dominance due to their increased likelihood of successfully engaging in aggressive behaviours (e.g. Tremblay et al., 1998).

RHP has been explored within the sibling aggression literature, being relevant to the study of this form of family violence because amongst siblings, one individual often holds a higher number of factors that contribute to a higher RHP. Children may take a sibling's RHP into account in a cost benefit analysis before deciding whether to engage in aggressive behaviours. For example, older siblings can often exert a high level of intimidation over younger siblings through verbal skills, physical strength (Felson & Russo, 1988) and their generally greater size (Wolke, Tippett & Dantchev, 2015). Therefore, without help or support from parents, a younger sibling may be less likely to use aggression due to the imbalance of power (Felson & Russo, 1988). However, if they know that they will receive support from their parents, younger siblings can use their parents for protection when engaging in aggression with their older siblings (Archer, 2013). To understand the experience of sibling aggression in greater detail it is important to consider how RHP contributes to this experience. This will be explored in the qualitative exploration of how victims and/or perpetrators discuss their experiences of sibling aggression.

### *1.3.3. Social Learning Theory (Bandura et al., 1961)*

Social learning theory (Bandura et al., 1961) can add a further layer of understanding to the use of aggression among children for resource control. Social dominance theory lacks this at present as it explains why children use aggressive behaviours rather than why they use specific types of behaviour (Choi et al., 2011).

Exposure to aggressive role models via the media, peers or the family can lead to modelling or imitation from observing children, particularly when successfully used to get what is wanted (Bandura et al., 1961). This could encourage the development of cognitive scripts and schemas that endorse the use of aggression to gain control of resources (Husemann, 1988). These scripts are developed from the way that children see people deal with situations, such as conflict, which they later refer to when presented with similar situations themselves (Husemann, 1998). Therefore, if children see parents or other siblings in the home using aggressive behaviours to deal with their conflict, they may develop cognitive scripts that reflect this. These cognitive scripts can have an impact on the use of aggression from childhood to adulthood. Research has shown that individual levels of aggression remain relatively stable through time (Husemann, Dubow & Boxer, 2009; Husemann, Eron & Dubow, 2002).

In addition to modelling the behaviours witnessed from those around them, the level of reinforcement that children experience from engaging in them will contribute to the likelihood of future use (Bandura, 1977). Therefore, if they believe that they will be punished for using aggression to deal with conflict, they will be less likely to carry them out than if they felt that they would be rewarded. When applied to aggression between siblings, family norms and parenting styles have an influence on how children choose to deal with conflict (e.g. Kiselica & Morrill-Richards, 2007). For example, if a child has received physical punishment from their parents, they may model the behaviours in their own relationships to resolve conflict or maintain a degree of control over a sibling (Caffaro & Conn-Caffaro, 2006). Furthermore, Steinmetz (1977a) found that within families where verbal or physical punishment was used frequently, siblings were most likely to use these methods to

resolve conflicts between themselves. This supports research that has found physical punishment from a parent to have a positive association with aggressive behaviours from children, regardless of the rates of parental discussion used as an alternative (Larzelere, 1986).

In line with the continuation of aggression from childhood to adulthood, there is a wealth of research that has explored how these behaviours transmit intergenerationally. For example, children may model and imitate the aggressive behaviours that they witness occurring between parents in the home environment and carry these on into their own lives (Cappell & Heiner, 1990). The likelihood of this occurring is stronger for women, than men, especially if they have experienced aggression from a parent in their own childhood, going on to use aggression towards their own children in adulthood (Cappell & Heiner, 1990). It therefore seems reasonable to expect that the behaviours may be carried into their own relationships when they reach adulthood (Cui, Durtschi, Donnellan, Lorenz & Conger, 2010). This could include aggression between spouses, with parents, and towards children.

The principles of social processing theory can be applied to the transmission of aggression through generations. This theory carries the assumption that the behaviours shown by an individual in response to a negative or problematic event occur through cognitive processes (Dodge & Crick, 1990). This can be applied to the use of aggression in that when children frequently witness aggressive behaviours; they will encode the information from the environment and store this in their memory (Dodge & Crick, 1990). Following this, the child will make attributions and interpretations of the event (Dodge & Crick, 1990). Their behavioural response will have considered the perceived outcome of the situation and the child's specific goals (de Castro, Merk, Coops, Veerman & Bosch, 2005; Lemerise & Arsenio, 2000).

Therefore, if children have regular exposure to instances of aggression within their environment; it could be that they make a positive attribution towards these specific behaviours, which in turn leads them to use aggression to deal with a problem or conflict.

There are however, several factors that will reduce or encourage the likelihood of children using an aggressive behavioural response. For example, the need to maintain a positive relationship with those around them and fear that they cannot meet their desired goals will reduce their chances of using aggression (Lemerise & Arsenio, 2000). This implies that like RHP (Parker, 1974), children will make a cost benefit analysis before engaging in aggressive behaviours.

Contrastingly, the emotional state of children can encourage them to engage in aggression as a response, to achieve their goals (de Castro et al., 2005; Lemerise & Arsemio, 2000). If a child has problems regulating their emotions, they may use aggression as a response when feeling angry (de Castro et al., 2005). It is therefore important to consider the emotions of children when they are exposed to aggression in the home. If they have problems with regulating these, they could be at an increased risk of using aggression more frequently to resolve a situation of conflict (e.g. de Castro et al., 2005).

#### *1.3.4. Summary of the theoretical approach*

In summary, the three theories presented are complementary to one another. They were chosen to guide the thesis because together they may help to explain the functions behind why siblings use aggression, the likelihood of engagement in the behaviours and how these are learnt. As this thesis aims to provide an in-depth

exploration of sibling aggression, it is important to draw upon theories that account for the whole process of engaging in the behaviours.

#### 1.4. Societal perceptions of sibling aggression

Although much of the research within the field has shown that sibling aggression occurs at high rates, there is limited exploration of perceptions towards sibling aggression. There is a need to look at differences in attitudes towards these behaviours from children who grow up without a sibling and victims/perpetrators of sibling aggression. Currently, those behaviours which would be considered abusive in other familial relationships, such as with partners or between parents and children, are not considered abusive when they occur between siblings (Caspi, 2012; Reese-Weber, 2008). It is therefore important to explore these perceptions to see how and/or why these behaviours are viewed differently.

Recent literature has sought to address this, often using vignette studies to explore perceptions. These studies have taken several viewpoints, looking at previous experiences of sibling aggression, the comparison of this form of family violence with others (such as IPV or violence towards a stranger) and the degree of blame placed upon victims. Sibling aggression is perceived as more acceptable and less severe than assaults on a dating partner or stranger (Khan & Rogers, 2015). This is regardless of the sex of the perpetrator or victim (Reese-Weber, 2008). It has been suggested that the high prevalence rates for sibling aggression contribute to attitudes that condone such behaviours (Reese-Weber, 2008). More specifically, individuals who have experienced this form of family violence have been shown to have a more complacent attitude towards sibling aggression than IPV (Reese-Weber, 2008). This

provides support for the research that has found aggression between siblings to be normalised within society (e.g. Khan & Rogers, 2015; Caspi, 2012; Gelles, 1997) suggesting a need for a greater recognition of this form of aggression.

In contrast to this, Harris (1991), did not find evidence to support the acceptance of sibling aggression over alternative forms of interpersonal violence. More specifically, sibling aggression was found to be more acceptable than friend, spousal or stranger assault, but this was only for female participants. Males viewed sibling aggression to be the least acceptable form of aggression, over spousal, friend and stranger assault (Harris, 1991). Harris (1991) acknowledged that this finding was contrary to evidence that has shown males to condone aggression more than females, proposing that exposure to this form of family violence in early childhood could have implications for children about the beliefs that they have surrounding the control of aggression. Therefore, this shows that experience of sibling aggression alone may not affect the perceived acceptability of sibling aggression, and the influence of participant gender needs to be considered.

Interestingly, experience of sibling aggression in relation to perceived acceptability of the behaviours has been explored within the literature. Individuals who have been a victim and/or perpetrator of sibling aggression have been found to be more accepting of sibling aggression (Hardy et al., 2010), seeing the behaviours as less severe and the victims more responsible than those who report experiencing no sibling aggression (Khan & Rogers, 2015). These findings support the ideas of Reese-Weber (2008), in that familiarity of the behaviours that constitute sibling aggression encourages the normalisation of them, increasing acceptability. However, these studies fail to address the definitional inconsistencies for sibling aggression and explore whether perceptions differ dependent on whether the participant's

previous experiences of sibling aggression were as a perpetrator or victim. Hardy et al. (2010) explored this, finding that it was not only the previous experience of sibling aggression but also the sex of the participant that affected the perceived acceptability of the behaviours. More specifically, for men, the experience of being a victim and for women the experience of a perpetrator was predictive of their increased acceptability for the aggressive behaviours between siblings. Hardy et al. (2010) explained this by proposing that there are cultural norms that place men as perpetrators and women as victims. By having experiences that contradict these traditional norms, the female perpetrators and male victims' increased levels of acceptance for these aggressive behaviours may have been facilitated through the processes of cognitive dissonance (Hardy et al., 2010). Alternatively, female perpetrators of family violence have been shown to minimise the effects of distress, anxiety and depression caused on their victims more than males (Follingstad, Wright, Lloyd & Sebastian, 1991). By minimising the perceived consequences of their actions, perpetrators could hold a more accepting view of aggression.

Although the research literature has shown that gender has an impact on perceptions of sibling aggression (e.g. Harris, 1991; Hardy et al., 2010; Khan & Rogers, 2015), the gender of the victim and perpetrator depicted in the scenarios can also affect the attributions of blame and responsibility. That is, male victims are often viewed in a negative light, with lesser justification in using aggressive behaviours to retaliate towards their aggressor when compared to female victims (Harris, 1991). Comparisons can be drawn to the IPV literature, where male victims are often perceived to be more responsible for the incident than female victims (e.g. Bryant & Spencer, 2003). The thesis will seek to explore perceptions of sibling aggression.

Perceptions of sibling aggression can also be linked to the social norms surrounding the behaviours. Many studies have found that these behaviours are not only considered normal, but are also expected of children (Skinner & Kowalski, 2013). With such norms, the recognition of sibling aggression in society (Gelles, 1997) and potential for some cases to be severe could be interpreted as a normal part of sibling development. It could be that cognitive dissonance (Festinger, 1957) can be applied here, as if a child experiences aggression from their sibling, someone in their family who is portrayed to love them, there will be tension. So, by changing their attitude towards sibling aggression and conceptualising it as a normal behaviour, the tensions will cease to exist. By its' definition, cognitive dissonance carries the implication that if children become a victim of sibling aggression, there will be a point when they have an attitude endorsing these behaviours, with a high degree of acceptance for them. Alternatively, forced compliance may affect the use of aggression between siblings (Festinger, 1957; Festinger & Carlsmith, 1959). For example, rather than changing their beliefs to endorse aggression as a method of conflict resolution, they may engage in the behaviours whilst still feeling that they are unacceptable, to reduce the tension that they feel because of contrasting beliefs (Festinger, 1957; Festinger & Carlsmith, 1959). This supports the research which has found that individuals with previous experience of sibling aggression to have a higher acceptance for sibling aggression (e.g. Hardy et al., 2010; Khan & Rogers, 2015). This therefore presents a problem within society because the behaviours are normalised by the people that are experiencing them.

Cognitive dissonance alone cannot explain both the gender differences in the acceptance of sibling aggression or the reduction in aggression as children become older (e.g. Harris, 1991; Straus et al., 1980). Societal norms should therefore be

considered in relation to perceptions of sibling aggression. It has been suggested that the prevalence of this type of aggression is high due to the lack of negative norms that could prohibit the use of aggression between siblings, or enable victims to be identified (e.g. Steinmetz, 1977a, 1977b; Straus et al., 1980; Gelles, 1997). Current norms present sibling aggression as acceptable within the family, evidenced by the high prevalence rates and the lack of an actor-observer effect (e.g. perpetrator reports are normally lower than victimisation reports). The normative nature of sibling aggression may hinder the recognition that this type of family violence is a societal problem (Gelles, 1997). The processes that normalise these behaviours should be explored in more detail.

#### *1.4.1. How parents' influence can contribute to the perception of sibling aggression*

Views of parents can also have an impact upon the normalisation of sibling aggression and in turn, this can affect the use of aggression between siblings when combined with their parenting styles (Tippett & Wolke, 2015). This can be through the way that parents intervene in their child's use of aggression as well as factors such as favouritism, attention and shaming.

The type of intervention that children receive can have an impact on their use of sibling aggression. Caffaro and Conn-Caffaro (2006) suggest that parents can either be conflict amplifying or avoiding in the way that they intervene. Research in this area has shown that parents can take one of three options when dealing with these behaviours; intervening, not intervening or endorsing them. These are not always separate and parents may make use of multiple options. However, each of these methods has different outcomes. Parents often intervene when presented with their children using aggression towards one another, with both mothers and fathers

doing this to the same degree (Kramer, Perozynski & Chung, 1999). Intervening has been found to not only decrease the amount and intensity of sibling aggression (Kramer et al., 1999; Perlman & Ross, 1997) but has also been associated with more positive sibling relationships and higher psychosocial wellbeing amongst children (Tucker & Kazura, 2013). However, the type of intervention received has been shown to influence the success of ending the aggression. For example, talking to children about their disagreements with one another and discussing their feelings has been shown to be more effective in reducing the amount of sibling aggression when compared with attempts to use controlling behaviours (such as using punishment, threats or trying to redirect the child's attention to something else) to stop the same aggressive behaviours (Kramer et al., 1999; Recchia, Wainryb & Howe, 2013). Indeed, Kramer et al (1999) found that controlling behaviours were most likely to be followed by an increase in sibling aggression. Recchia and Howe (2009) suggest that if parents do not use constructive ways of intervention, children will not be motivated to resolve their conflicts with each other in constructive ways. This follows the modelling principles of social learning theory (Bandura et al., 1961) in that discussing conflicts with children may be more effective in reducing sibling aggression, because children will adopt these strategies the next time they are trying to resolve a conflict. This would therefore provide them with prosocial role models to help them learn the alternatives to aggressive behaviours to get what they want (e.g. Hawley, 2002). Although this strategy to intervene has been shown to be effective in decreasing sibling aggression, the child's perceptions of favouritism and blame on the part of parents can also have an impact on this.

Favouritism has been shown to not only affect how parents intervene in situations of sibling aggression (e.g. Felson & Russo, 1988; Perlman & Ross, 1997),

but it is also predictive of these behaviours (Khan & Cooke, 2008). More specifically, parents have been found to support younger more than older siblings (Perlman & Ross, 1997; Recchia et al., 2013). This comes from the perception that younger siblings are most often the victims of aggression (Recchia & Howe, 2009) and older siblings can speak for themselves (Recchia et al., 2013). Therefore, younger children are deemed to need the support more than older siblings. By showing a preference for one child however, hostility and jealousy towards other siblings could be increased (Finzi-Dottan & Cohen, 2010). As this disrupts the natural dominance structure within the sibling groups, it could increase the frequency of sibling aggression if dominance is about establishing a hierarchy. Felson and Russo (1988) found this, with younger children being more likely to initiate aggression if they knew that their older sibling would be punished. This could therefore encourage a younger child to use aggression towards their sibling in the knowledge that they will receive support from a parent and so ultimately get what they want from a situation of conflict. These findings illustrate that although the act of intervening is important in reducing the amount of sibling aggression, the way that parents show support for a particular child can also impact the frequency and intensity of these behaviours.

Conversely, parents could provide no intervention when presented with a situation of conflict between their children. This could be done in two ways; (1) no intervention at all or (2) sanctioning the aggressive behaviours. Providing no intervention has been found to indirectly endorse, support and encourage aggression (Caffaro & Conn-Caffaro, 2006; Kramer et al., 2009). This is said to increase the frequency of the behaviours as parents are failing to provide prosocial alternatives for conflict resolution (Tucker & Kazura, 2013). Alternatively, sanctioning sibling

aggression is one of the least used methods of parental intervention and is said to normalise the behaviours, especially when siblings are close to one another in age (Tucker & Kazura, 2013). A lack of parental intervention could be affected by the expectations that parents have for their children. For example, Mendelson, de Villa, Fitch & Goodman (1997) found that aggression is expected of siblings, with this being greater for older siblings. If parents perceive the behaviours to be characteristic of sibling development then they could be more likely to endorse them, sending a message that the behaviours are normal and acceptable. These methods of non-intervention highlight the importance of parents in portraying the acceptance of aggression between siblings. This will reduce the availability of prosocial role models for dealing with situations of conflict. It therefore seems prominent to explore the relationship between normalisation and parental involvement further to see if the type of involvement received from a parent has an impact on the use of sibling aggression.

Overall, the norms and perceptions of aggression that parents hold has an impact on the way that they intervene in instances of sibling aggression. By intervening in the aggression, children learn that the behaviours are not accepted within the family environment. Alternatively, when parents do not intervene or minimise the impact of the behaviours (e.g. Caffaro & Conn-Caffaro, 2006), the children may develop schemas that endorse the use of aggression to resolve conflicts.

### 1.5. Susceptibility to sibling aggression

Although the research literature has shown that sibling aggression is a widespread problem, there is a distinct lack of research that has explored the predictors or precursors to these behaviours. It is therefore important to look at factors that are predictive of sibling aggression, so that they can be reduced before they become problematic. Of the limited studies that are available looking at this specific facet of sibling aggression, it appears that the predictors can be split into two broad categories behavioural and exposure to aggression in the family.

Behavioural predictors of sibling aggression have been found in children as young as three years old (e.g. Ensor, Marks, Jacobs & Hughes, 2010), with children who engage in aggressive or antisocial behaviours towards their sibling being found to bully or refuse to interact with their peers (Ensor et al., 2010). Similarly, bullying peers has been found to increase the likelihood of sibling aggression (Tanrikulu & Campbell, 2015). Other predictors of sibling aggression include assaulting school staff, animal abuse, anger, low sibling empathy and a lack of parental involvement (Khan & Cooke, 2008). Additionally, hostility has also been shown to predict weapon use in instances of aggression between siblings (Khan & Cooke, 2008). Although each of these factors has been shown to predict sibling aggression, the functions behind the behaviours are unclear. Research should therefore strive to understand the dynamics of the sibling relationship. This would address a significant gap in the literature. By asking perpetrators and victims about their experiences of sibling aggression and why they have used such behaviours, further insight into these functions may be observed.

Alongside the behavioural predictors of sibling aggression, exposure to family violence (e.g. between spouses, parents and children) is also predictive of aggressive behaviours between siblings. In a sample of Portuguese students, Relva, Fernandes and Mota (2013) found that parent to child aggression was a predictor of sibling aggression. Although this can be explained through the modelling principles of social learning theory (Bandura et al., 1961), it should be noted despite measuring for multiple forms of family violence (i.e. parent-to-child, parent-to-parent, and child-to-parent violence), Relva, Fernandes and Mota (2013) only found parent to child violence to be predictive of sibling aggression. This implies that additional factors need to be explored to see whether they contribute to aggression between siblings. More specifically, if exposure to aggression alone predicted sibling aggression then parent to parent violence would also be a predictive of these behaviours between siblings. Instead, it could be that the process of being involved in the aggressive behaviours (as a victim or perpetrator), rather than only being a witness to them in parent to parent aggression, encourages the modelling process. This in turn could lead to a higher frequency of aggressive behaviours towards siblings. However, the lack of clarity surrounding the reasons why these factors predict sibling aggression highlights a clear need to explore this further in the literature, looking at how multiple forms of familial aggression impact upon the frequency of sibling aggression.

#### *1.5.1. Exposure to aggression*

Aside from exposure to family violence being a predictor of sibling aggression (e.g. Relva, Fernandes & Mota, 2013), there has been further attention within the literature on the impact that exposure to aggression within childhood has

on individuals when they reach adulthood. This has primarily been explored from an IPV perspective; that is, whether being exposed to IPV in childhood has an impact on children later in life. Such exposure has been found to have an impact on: (1) children's future use of aggression and (2) long term effects on a child's life. In relation to sibling aggression, it is possible that children will witness aggression within their own home. It is therefore important to explore the existing research in this area.

Witnessing IPV in childhood has been linked to a higher likelihood of witnessing other forms of family aggression, including sibling physical aggression and an increased chance of co-occurring aggression within the home (Hamby, Finkelhor, Turner & Ormrod, 2010; Teicher & Vitaliano, 2011). This suggests that the presence of IPV could potentially impact the frequency of sibling aggression especially when viewed from the imitation principles of social learning theory (Bandura et al., 1961). If children are regularly exposed to aggression from their parents, this may lead to the development of positive schemas endorsing aggression as an appropriate method of conflict resolution. If they are also lacking in prosocial role models outside the home, children can become unclear about the appropriateness of aggression within relationships, encouraging the idea that aggressive behaviour is acceptable to resolve a conflict (Kalmuss, 1984). Thus, it can be argued that parents who use aggression towards their children will have been more likely to witness aggression from parents in their own childhood (Cappell & Heiner, 1990). This can be linked to the cycle of violence as the use of aggression between siblings has been linked to dating violence (Noland, Liller, McDermott, Coulter & Seraphene, 2004), an increased perpetration of IPV (Calderia & Woodin,

2012) and a higher likelihood of being victimised inside and outside the home, where the risk is higher for females than males (Mitchell & Finkelhor, 2001).

Exposure to aggression has also been linked to several long-term effects on children. More specifically, exposure to IPV has been shown to have links to childhood trauma symptoms and this is heightened when paired with maternal stress, including divorce or the loss of a job (Tailor, Stewart-Tufescu & Piotrowski, 2015). Interestingly, this has also been linked to an increase in childhood mental health problems, and a higher likelihood of experiencing aggression in school and within the community (Turner, Finkelhor & Ormrod, 2010). There have also been links to juvenile delinquency; problems with anger; control of aggressive behaviour; low self-esteem; anxiety and depression (Somers & Braunstein, 1999); and lower relationship satisfaction (Calderia & Woodin, 2012), with these effects continuing into adulthood (MacDonell, 2012). These associations illustrate not only a practical need to take children into account in cases of IPV (Fantuzzo & Fusco, 2007) but also a need to consider how their exposure to aggression will impact them in the future, with an aim of developing interventions that try to minimise these.

Although the existing literature has identified the impact of witnessing aggression on both the use of future aggression and the long-term effects for children, there is a need to explore this further. Research should seek to explore whether exposure to aggression has an impact on not only the likelihood of aggression within the home environment, but also the frequency of these aggressive behaviours. This relationship will be explored in Study 1 of this thesis.

## 1.6. Co-occurring aggression

As sibling aggression is so common (e.g. Kiselica & Morrill-Richards, 2007), there is a potential for it to co-occur alongside different forms of family aggression such as IPV, child abuse and child to parent aggression. By considering these forms of aggression together, a bigger picture can be observed regarding the amount of family violence that these children experience (Turner et al., 2010). The existing literature in the field has explored this, often comparing one form of violence with another, for example; IPV and child abuse (e.g. Dixon, Hamilton-Giachritsis, Browne & Ostapuik, 2007). This has been explored on a larger scale, looking at sibling aggression, IPV and child abuse, but done much less often (Goodlin & Dunn, 2010; Radford et al., 2011). This section will review the available research on co-occurring aggression, identifying any gaps.

Studies have established links between IPV and parent to child aggression (Knickerbocker, Heyman, Slep, Jouriles & McDonald, 2007), finding co-occurrence rates to vary between 40% and 82% (e.g. Appel & Holden, 1997; Slep & O'Leary, 2005; Dixon et al., 2007), with similar findings being seen in the UK and the USA. Interestingly, O'Leary, Slep and O'Leary (2000), using data from the 1975 NFVS calculated the likelihood of child abuse in a family, given that there was IPV to be 31% and vice versa. This experience of being in a family with co-occurring family violence has been shown to have negative outcomes on the children involved, including negative relationships with peers and romantic partners, a negative perception of the self and higher levels of trauma and dissociation (Kaslow & Thompson, 2008; Ostrov & Bishop, 2008; Relva, Fernandes & Mota, 2013). This promotes the importance of research into this area of family aggression (MacDonnell, 2012). Even more so, Knickerbocker et al. (2007) suggested that

research into co-occurring IPV and parent to child aggression is needed to help improve assessment and treatment of the behaviours. Alongside this, it is also pertinent to explore the propensity for more than two forms of aggression to co-occur with one another.

The co-occurrence literature has also explored family aggression further, in terms of whether sibling and parent-to-child aggression co-occur. Links have been found regarding an increase in verbally aggressive behaviours when parent to child and sibling aggression were both occurring in the family (Hoffman, Kiecott & Edwards, 2005). Verbal aggression has been found to have negative developmental effects on children (Vissing et al., 1991), especially when used from parents to children, with the experience of shaming being traumatic (Dutton, 1999). This suggests that aggressive behaviour could be affected by the number of forms of aggression occurring in the family environment. This propensity for aggression to co-occur has also been found to progress into adulthood, with adult sibling aggression overlapping with IPV and aggression towards the mother (Hendy, Burns, Hakan Can & Scherer, 2012). This shows the importance of considering multiple types of aggression within the family.

Recently, several studies have taken a similar approach to explore co-occurring aggression. They have looked at the co-occurrence of three types of aggression; IPV, child abuse and sibling aggression (e.g. Goodlin & Dunn, 2010; Radford et al., 2011), showing prevalence rates around 5% (Goodlin & Dunn, 2010). These large-scale surveys using data from both the UK and USA have identified that experiencing aggression from a parent or guardian puts children and young people at a greater risk of experiencing multiple forms of family violence when compared to those who have not experienced aggression from a parent/guardian (Radford et al.,

2011). This risk is also said to increase with age (Radford et al., 2011) and as the number of people living in the household increase (Goodlin & Dunn, 2010). It has been suggested that family violence is interactive, involving many different members rather than a sole victim and perpetrator (Goodlin & Dunn, 2010). It can therefore be said that this highlights the need for multiple perpetrators and victims to be considered from not only an intervention viewpoint but also in research in this field. Although the discussed studies are more inclusive than others that have limited their scope to two forms of family violence, they still lack the inclusion of child to parent aggression. This is important to consider, and increasingly being recognised as a form of family violence. Most recently, the UK Home Office (2015) has introduced a guide to adolescent to parent violence and abuse. This not only highlighted the existence of this form of family violence but also shows that children under 16 years of age can be considered as perpetrators. It is therefore important, when looking at co-occurring family violence, for all possible types of aggression to be considered to understand the true extent of the problem.

It is important to address the problem of co-occurring aggression within families. This may not only have an impact upon the amount of aggression experienced by individuals but also lead to additional problems. More specifically, being a victim of multiple forms of aggression is a risk factor for the development of trauma symptoms (Finkelhor, Ormrod & Turner, 2007), with this being stronger than the risk for future victimisation (Turner et al., 2010). Associations have also been established with increased levels of depression, worse physical health and a lower level of education (Tajima, 2004; Goodlin & Dunn, 2010). There is a clear need to consider multiple forms of aggression within interventions of family violence, not only to gather a greater understanding of family violence (Appel & Holden, 1998)

but to also encourage treatment of those victims and perpetrators deemed most at risk. At present, there is a lack of research that has considered the co-occurrence of all available types of family aggression, this being IPV, child abuse, child to parent and between siblings (Turner et al., 2010). By considering all types together, the bigger picture can be observed regarding the true extent of the problem of family violence within society. The additional consideration of sibling aggression with other forms of family violence will also help to establish the seriousness of the behaviours.

### 1.7. Consequences of sibling aggression

It is important to consider the long and short term effects of sibling aggression. This form of family violence should not be considered as developmentally normal if it is associated with abnormal outcomes. Associated outcomes of sibling aggression have included effects on an individual's behaviours, mental health and interpersonal skills. Of these, one of the most prominent effects are behavioural problems. More specifically, sibling aggression has been associated with an increase in other aggressive behaviours, which include further aggression in the school (Garcia et al., 2000) and with peers (Duncan, 1999; Tippett & Wolke, 2015). In samples of adolescents, victims of sibling aggression are shown to have a greater likelihood for being bullied outside the home (Tippett & Wolke, 2015). Similarly, experiencing sibling aggression has also been associated with an increased engagement in delinquent behaviours, both at the time of the aggression (Button & Gealt, 2010; Garcia et al., 2000) and two years later (Stocker, Burwell & Briggs, 2002), with strong relationships, even when other forms of family violence are controlled for (Button & Gealt, 2010). Garcia et al (2000) suggest that the rise in

delinquent behaviours in early childhood could occur because of modelling from siblings, which in turn leads proactive aggression to be reinforced through rewards and enjoyment. Alongside these links to social learning theory, through modelling and reinforcement (Bandura et al., 1961), there are also links to the principles of social dominance theory (Hawley, 2002). This is in terms of the cost-benefit analysis that children perform when they are deciding whether to use aggression to get something that they want. If the perceived benefits, in this case; enjoyment and reward, outweigh the perceived costs, aggressive behaviours will be used to get what they want (e.g. Archer, Fenandez-Fuertes & Thanzami, 2010; Hawley, 1999) and gain control of resources (e.g. Hawley, 2002). This may endure into adulthood for individuals with previous experience of sibling aggression (Mathis & Mueller, 2015).

A range of mental health difficulties have also been associated with experiencing sibling aggression. These have primarily highlighted the development of anxiety and depression in victims and perpetrators of such behaviours in childhood (Buist & Vermande, 2014; Buist et al., 2014), with this being more likely for females than males (Graham-Bermann et al., 1994). These patterns have been found to persist into adulthood, independently of other forms of family violence (Mathis & Mueller, 2015) and are associated with self-harming behaviours and depression in early adulthood (Wolke et al., 2015). There have also been associations with sibling aggression and lower levels of mental health both in childhood and adolescence (Tucker, Finkelhor, Turner et al., 2013), with higher levels of trait anger being associated with perpetrators and mutual sibling aggression (Tanrikulu & Campbell, 2015). However, engaging in mutual aggression with siblings could be perceived somewhat as a protective factor against these effects. Graham-Bermann et

al. (1994) found mutuality to be associated with lower levels of anxiety and higher levels of self-esteem when compared to perpetrators of the same behaviours in young adults. Although this portrays the idea that sibling aggression could be associated with emotional difficulties, there is also emerging research from Mackey et al. (2010) who found no relationship between sibling aggression and anxiety or depression in a student sample. However, they did note that this could be due to their measurement of sibling aggression, as they placed focus on the specific acts of aggression (Mackey et al., 2010). As sibling aggression does need to take play fighting into consideration, measures should aim to go beyond the specific acts used, especially with there being no consistent definition used, and consider the functions and motivations of the behaviours.

Sibling aggression has also been associated with several effects on the interpersonal skills of children. More specifically, there have been associations with lower perceptions of self-worth, decreased levels of social competence (Buist & Vermande, 2014), adjustment (Deater-Deckard et al., 2002) and a higher likelihood of neglecting to engage with peers in childhood (Ensor et al., 2010).

These findings highlight the need for more attention in society to sibling aggression. Given the potentially detrimental effects to being a victim and/or perpetrator of these behaviours, this form of aggression should not be considered a normal part of child development. This thesis aims to provide a wealth of new knowledge on this form of family violence, expanding the existing research literature.

### 1.8. Summary of the literature reviewed

This literature review provides an overview of the extent of the problem of aggression between siblings and the theoretical perspectives drawn upon in this thesis to explore this form of family violence. It is apparent that although shown to be a highly prevalent form of family violence (e.g. Relva, Fernandes & Mota, 2013; Straus et al., 1980), behaviours related to sibling aggression are not always perceived as problematic by parents (Caffaro & Conn-Caffaro, 2006; Tucker & Kazura, 2013) or within society (Caspi, 2012; Reese-Weber, 2008). Despite this, there are many factors, such as using aggression outside the home (Ensor et al., 2010), low sibling empathy (Khan & Cooke, 2008) and living in an aggressive household (e.g. Hendy et al., 2012) that are said to increase susceptibility to sibling aggression. Although these associations are largely correlational in nature, they are worthy of further investigation. Similarly, associations with future engagement in delinquent behaviours (Garcia et al., 2000; Stocker et al., 2002), aggression (Duncan, 1999; Tippett & Wolke, 2015) and greater risks of depression and anxiety for victims (Buist & Vermande, 2014; Buist et al., 2014) show the importance of investigating this form of family violence.

Overall, the literature reviewed has suggested the importance of recognising sibling aggression as a form of family violence. By considering the relationship between other forms of family violence and sibling aggression, this severity of the problem can be explored. Presently, acts that would be considered abusive between parents and children or intimate partners are not considered as such when they occur between siblings (Caspi, 2012). Researchers within this field highlight the importance of such recognition (e.g. Gelles, 1997) but this cannot be done without

exploring the experience in a much greater depth than in current prevalence and susceptibility studies. To do this, it could be more appropriate to look beyond the individual acts of aggression, such as those included in existing prevalence measures (e.g. CTS/CTS2, Straus et al., 1979;1996) and instead, at both the context and functions of the behaviours. This will allow for, not only a clearer picture in relation to both the susceptibility and consequences of sibling aggression, but also for the true extent of this form of family violence to be observed. This thesis will aim to provide an in-depth exploration into this form of family violence. Chapter 2 will discuss this in further detail by outlining the details of each individual research study.

## **Chapter 2**

### **Aims of the Thesis**

Following the review of the existing literature on sibling aggression, Chapter 2 describes the aims of the thesis alongside the specific research questions for each of the three individual studies that will be described in forthcoming chapters.

The overall aim of the thesis was to provide an in-depth exploration of sibling aggression, contributing to the development knowledge in the field. This was done by addressing a number of problems highlighted throughout the literature review. In doing so, the research examined the distinction between play fighting and sibling aggression and considered the contribution of parents and the way that dominance was maintained through aggressive methods. In addition to these problems, the way that sibling aggression has been measured through the previous literature and whether existing measures can distinguish between both play and aggression between siblings was explored. These aims were explored by conducting three individual studies.

#### **2.1. Study 1: The impact of co-occurring family violence on the frequency of sibling aggression.**

As established in Chapter 1, different forms of family violence often co-occur. This has been shown to have an impact on the later use of aggression in adulthood relationships, so there is a need to explore the effects of co-occurring aggression on siblings. If sibling aggression is linked with forms of family violence that are considered to be a societal problem (e.g. IPV), it would highlight the

seriousness of these behaviours. Not only this, but if sibling aggression is a normal and healthy part of sibling the relationship, then there would be no association between these behaviours and family violence or childhood delinquency. To do this, several hypotheses were proposed.

### *Research hypotheses*

1. There would be a greater frequency of sibling aggression in families with more than one form of family aggression co-occurring.
2. There would be a greater likelihood of sibling aggression in families where parents were a witness to IPV in their own childhood.
3. Children involved in delinquent behaviour would have higher rates of sibling aggression than those not involved in delinquent behaviours.

### 2.2. Study 2: Exploring the experience of sibling aggression

Given the high prevalence rates of sibling aggression evidenced in the research literature, it is likely that play fighting is included. This surrounds the act based measures of aggression that are commonly used to gather such figures. However, distinguishing between behaviours that constitute play and those that are sibling aggression is problematic due to the overlap between the individual acts. Identifying the distinction between the behaviours has often been neglected in existing research. Victims and/or perpetrators of sibling aggression are the ideal candidates to provide further insight into how people who have experienced the behaviours perceive and make sense of them in a society that perceives them to be normal. To do this, three research questions were proposed.

### *Research Questions*

1. How do participants distinguish between play fighting and sibling aggression?
2. Why did participants use aggression with their sibling(s)?
3. How do participants perceive the effectiveness of parental responses to sibling aggression?

### 2.3. Study 3: The Experience of Sibling Aggression (ESA) scale: Development and validation

Building on the qualitative study of the thesis, Study 3 was concerned with overcoming the problems surrounding the measurement of sibling aggression and developing a questionnaire to measure this form of family violence. The literature review highlighted problems surrounding the measurement of sibling aggression. As play fighting is considered an enjoyable and developmentally beneficial behaviour for children, current prevalence measures (e.g. CTS/CTS2, Straus et al., 1979; Straus et al., 1996), may overestimate rates of aggression between siblings. It therefore became important to look at the context and function of the behaviours rather than the individual behavioural acts alone. Study 3 developed the ESA scale to explore this and had several hypotheses.

### *Research hypotheses*

1. The items in the ESA scale would form subscales related to the three themes derived from the interview accounts in Study 2: dominance, normalisation and the nature of the aggression.
2. The ESA scale will be related to the BSQ (Graham-Bermann & Cutler, 1994), demonstrating the concurrent validity of the measure
3. The subscales of the ESA scale would be able to predict sibling aggression.
4. Participants would have significant differences in their scores on the subscales of the ESA scale, dependent on their experience of sibling aggression.

## **Chapter 3:**

### **Methodological approach for the thesis**

This chapter will describe the methodological approach employed throughout this thesis. To fulfil the aims of the individual research studies, a number of different methods were employed. These will each be described in turn, discussing how the methods are most suited to fulfilling the aim of that particular study.

#### **3.1. Archival methods**

Archival studies, including those that use secondary data analysis are particularly useful when conducted in conjunction with other methods in an attempt to provide a well-rounded and in depth investigation (Andersen, Prause, & Silver, 2011). An advantage of such methods is that they can provide supplementary information to that which is already available (Church, 2002). Study 1 of the thesis made use of archival methods by using the 1975 NFVS (Straus et al., 1980). This was one of the first studies to explore the use of aggression between siblings and introduce the CTS (Straus, 1979), one of the most widely used measures in the family violence literature. Although using existing sources of data does not allow for control over variables asked, the 1975 NFVS is unique in its breadth of types of family violence. There has been a wealth of literature that has re-analysed data from the various National Family Violence Surveys (e.g. Slep & O’Leary, 2005) but this has often only compared associations between two types of family violence (e.g. IPV and child abuse). Study 1 will attempt to establish sibling aggression as a form of family violence. This will be done by exploring the association between sibling aggression

and other forms of recognised family violence (i.e. IPV, child abuse and child to parent aggression).

### 3.2. Semi-structured interviewing

Semi-structured interviews are a qualitative method of data collection that involve asking participants open questions, whilst allowing for flexibility in the topics covered (Fylan, 2005). These types of interviews have a number of advantages over traditional structured interview methods that use a predetermined list of questions to encourage discussion of predefined issues (Fylan, 2005). Semi-structured interviews are said to produce rich data, facilitate the development of rapport and allow for some flexibility in the topics covered (Smith & Osborn, 2008). Potential disadvantages however, surround the amount of control over the wealth and consistency of information gathered from each participant (Smith & Osborn, 2008). When considering the strengths and weaknesses of semi-structured interviewing, this form of interviewing was deemed the most appropriate method for Study 2. This technique was seen as particularly advantageous given the ability of participants to introduce and discuss topics that may not be covered by the questions posed. As the research within this field is currently limited in terms of the failure to distinguish between play and aggression, it was important to let participants discuss topics that otherwise may have been neglected.

A secondary concern with using qualitative data collection techniques, such as this, was the target sample size for the study. It is known that typically qualitative studies involve less participants than their quantitative counterparts. Kvale (1996) recommends that a minimum of 15 participants, plus or minus ten, is an ideal

number for qualitative research. This, in combination with Guest, Bunce and Johnson's (2006) systematic review exploring the point at which saturation occurs in qualitative research helped in deciding the appropriate sample size for the study. More specifically, Guest et al. (2006) found that data saturation occurs after approximately 12 participants and beyond this point, very few new themes are revealed. Therefore, in accordance with research exploring this, a minimum sample size of between 12 and 15 participants was decided upon. This enabled both these recommendations to be fulfilled.

### 3.3. Questionnaires

Questionnaires are one of the most common methods for data collection (Fife-Schaw, 2006) and have been used frequently throughout the sibling aggression research literature (e.g. Khan & Rogers, 2015; Relva, Fernandes, & Mota, 2013; Tucker & Kazura, 2013). The reason for their popularity could be due to the low costs associated with administration (Fife-Schaw, 2006) and the relative ease for large numbers of participants to anonymously complete questionnaires or surveys. However, unlike interviewing techniques previously discussed, questionnaires do not allow for topics to be expanded upon, often using only a scale to rate opinions about a given statement. To overcome this limitation, the qualitative interview accounts from Study 2 were used to develop a questionnaire on sibling aggression for Study 3. The literature review highlighted the problems associated with the current measurement of this form of family violence and the potential difficulties for act based prevalence rates to distinguish between play fighting and sibling aggression. Developing a questionnaire would allow for the strengths of the method to emerge in

the research quality and provide a unique contribution to the existing literature in this field. This was therefore the reasoning for the research methods employed in Study 3.

#### 3.4. Summary

Using multiple methods allows for a greater depth of information with regard to the experiences of sibling aggression to be attained whilst overcoming the limitations of each method when used independently (Kelle, 2006). The thesis took both a theory and a data driven approach throughout. In terms of the theoretical approach taken, RHP (Parker, 1974), social dominance (e.g. Hawley, 2002) and social learning theory (Bandura et al., 1961) informed the research questions and hypotheses. However, the emergence of new ideas from the data were welcomed given that one of the aims of the thesis was to provide an in-depth exploration of sibling aggression. For example, as much of the existing literature on this type of family violence has largely been based upon questionnaires originally designed to measure aggression, one of the purposes of the semi-structured interview was to reveal ideas or themes that had not previously been considered. By taking a theory and a data driven approach, a critical realist approach to the data was utilised. That is, there is an independent reality, but all perceptions of this, including those made through both qualitative and quantitative methods, are perceived to be subjective (Madill, Jordan, & Shirley, 2000; Sullivan, Gibson, & Riley, 2012).

Triangulation was employed by using multiple methods of data collection (namely questionnaires and semi-structured interviews) to explore similar concepts of sibling aggression. Triangulation is a way of providing evidence of not only

reliability but also objectivity and accuracy of the analysis (Madill et al., 2000). More specifically, in this thesis, participants were asked about their experiences of sibling aggression through interviews, where they had the chance to focus this on what they felt they wanted to. These interviews were then used to inform items on a questionnaire on sibling aggression. This adds to the objectivity of the study as different measures were used to explore similar concepts.

## **Chapter 4**

### **Study 1: Exploring the co-occurrence of family violence and its relationship with sibling aggression**

Study 1 of the thesis aimed to explore the association between multiple forms of family violence and the perpetration and victimisation of sibling aggression, both verbal and physical. By exploring sibling aggression in relation to co-occurring family violence, the potential seriousness of the problem can be ascertained. This chapter will provide a brief introduction to the relevant problems surrounding co-occurring aggression, the impact of witnessing aggression on children in relation to sibling aggression and the association between the frequency of sibling aggression and delinquent behaviours. A discussion of how the findings link to existing research, alongside the consideration of the practical applications of these will also be described.

#### **4.1. Brief Introduction**

The literature review (Chapter 1) highlighted the potential for sibling aggression to co-occur alongside other forms of violence in the family environment (Hoffman, et al., 2005). Given the various long-term consequences of sibling aggression, including a greater likelihood of using both delinquent behaviours outside the home (Garcia et al., 2000) and an increased use of aggression in school and with peers (Duncan, 1999; Garcia et al., 2000; Tippett & Wolke, 2015) it was important to consider whether other co-occurring familial aggression and engagement in delinquent behaviours have an impact on the frequency of sibling aggression. If the frequency of aggression (that is the amount of aggression engaged in) between siblings was associated with other forms of violence that are considered problematic

(e.g. IPV and violence between parents and children), it would highlight the potential seriousness of the behaviours and the need to consider aggression between siblings as a societal problem. Other factors, specifically engagement in delinquent behaviours outside the home environment and their association with the frequency of aggression between siblings would also be indicative of the problematic nature of sibling aggression.

Prevalence statistics are concerned with the number of participants in a sample that report engaging in specific aggressive acts. An alternative way to explore these behaviours is to look at the frequency of them. That is, how many times the behaviours are engaged in within a given period. As Study 1 of the thesis was concerned with looking at how multiple forms of aggression are associated with sibling aggression, the frequency of aggression between siblings was used. This is a similar approach to research in IPV, which has conceptualised the behaviours by the frequency at which they occur (Johnson & Ferraro, 2000). By exploring how multiple forms of family violence affect the frequency of aggression between siblings the seriousness of this form of aggression can be explored.

Similarly, witnessing IPV in childhood has been linked to a greater likelihood of witnessing other forms of family aggression, including sibling physical aggression and an increased chance of co-occurring aggression within the home (Hamby et al., 2010; Teicher & Vitaliano, 2011). Although the existing literature has identified the impact of witnessing aggression on children in the short and long term, there is a need to consider the impact that familial aggression has on the use of similar behaviours between children. In line with social learning theory (Bandura et al., 1961), it would be expected that children would learn to use aggression to resolve conflict if they are exposed to these behaviours and they are accepted within

the home environment. This also links to the increased likelihood of using aggression in later relationships (Hamby et al., 2010; Teicher & Vitaliano, 2011) and the intergenerational transmission of family violence (e.g. Cappell & Heiner, 1990). If children develop cognitive schemas that endorse aggression to resolve conflict, they may be more likely to carry on using them in their relationships when they reach adulthood. Research should seek to explore whether this has an impact on the number of forms of aggression which go on to occur in the homes of the children which bear witness to their parents using aggression.

#### *4.1.1. The 1975 National Family Violence Survey (NFVS; Straus et al., 1980)*

Many surveys have explored the use of aggression in the family (e.g. Radford et al., 2011; Tucker, Finkelhor, Shattuck et al., 2013). However, the NFVS (Straus et al., 1980) is the only one, to the author's knowledge that asks participants about all possible types of aggression that could co-occur in the family environment. The NFVS (Straus et al., 1980) collected data from families living in the US in 1975 and was later published in 1980. The survey collected data concerning aggression between spouses, children, parents and siblings, using a nationally representative sample of 2143 families across the US. There has been a further version of the NFVS, with data collected in 1985 but this did not ask participants about child to parent aggression. The CTS (Straus, 1979) was used throughout all versions of the NFVS to gather information regarding the methods of verbal and physical conflict resolution. The CTS was designed for use in the NFVS and later went on to be published in 1979 as a measure of aggression (Straus, 1979). Although the current study uses data from a survey conducted in 1975 and could appear dated, the current prevalence literature on sibling aggression shows similar rates to those reported in

the 1975 study (Khan & Cooke, 2008; Reese-Weber, 2008) when using the same measures. This suggests that although family dynamics may have changed, sibling aggression is still very prevalent in society today. As the current study was interested in the co-occurrence of sibling aggression with other forms of family violence, the frequency of sibling aggression is of particular interest.

#### *4.1.4. Aims and Hypotheses*

This study aimed to explore the relationship between co-occurring family aggression and the frequency of verbal and physical aggression between siblings. Previous research has established that aggression frequently co-occurs in the home and that this has an impact on the later use of aggression in relationships. There is therefore a need to explore the combined effects of co-occurring and witnessing aggression. Children, who are frequently exposed to aggression in the family, particularly at high rates, when two or more forms are being used, may have an increased use of aggression with their siblings. As sibling aggression already occurs at high prevalence rates in the family, this study explored whether the frequency of these behaviours is affected by family violence already occurring in the home environment. Finally, as both co-occurring aggression and the exposure to these behaviours in the family has been associated with problems managing aggressive behaviour, both in childhood and adulthood, it would be expected that sibling aggression would have relationships with delinquent behaviours outside the home.

Three hypotheses were proposed for the study; (1) there would be a greater frequency of sibling aggression in families with more than one form of family aggression co-occurring, (2) there would be a greater likelihood of sibling aggression in families where parents were a witness to IPV in their own childhood and (3)

children involved in delinquent behaviour would have higher rates of sibling aggression than those not involved in delinquent behaviours.

## 4.2. Method

### *4.2.1. Design*

An archival method was employed to explore the co-occurrence of several forms of aggression within the family environment. The methods employed by the original researchers described in detail from Straus et al. (1980) will briefly be described in this method section.

### *4.2.2. Participants*

The NFVS used a representative sample from among the 46 million families living in the United States in 1975. Their final sample consisted of 2143 families. In total, 960 (44.80%) males and 1183 (55.20%) females, ranging in age between 18 and 65 years old, were interviewed. Of these, 1146 (53.48%) participants had more than one child living at home, with the age of the referent child ranging between 3 to 17 years old (mean = 9.92, S.D. = 4.50).

### *4.2.3. Measures*

The NFVS gathered data using many measures. For example, the demographic variables of each of the participants were taken; age, gender and religion, family structure, employment, power, decision making, stress, marital satisfaction and criminality.

*The Conflict Tactics Scale (CTS; Straus, 1979)*

The frequency and severity of aggression within the family environment were measured using the CTS (Straus, 1979) for the four types of family aggression (i.e. sibling, child-to-parent, parent-to-child and spousal). Participants indicated the extent to which they used an individual act of behaviour on a Likert scale ranging from 0 (never) to 6 (more than 20 times) within the previous year. The items in the questionnaire differed only by the masculine and feminine pronouns throughout, with a higher score reflecting a greater frequency of behaviours. The Cronbach's alpha for the sibling conflict items on the CTS for sibling aggression, including the three subscales, was .91, demonstrating a good level of reliability for the scale. For the purposes of the study, the reasoning scale was not analysed as the interest was in the types of aggressive behaviours used within the family. The individual items of the measure are shown in Table 4.1.

*Table 4.1*

The individual items of the verbal and physical aggression subscales of the CTS

<b>CTS verbal and physical aggression items</b>
1. Insulted or swore at the other one
2. Sulked and/or refused to talk about it
3. Stomped out of the room or house (or yard)
4. Cried
5. Did or said something to spite the other one
6. Threatened to hit or throw something at the other one
7. Threw or hit or kicked something
8. Threw something at the other one
9. Pushed, grabbed or shoved the other one
10. Slapped or spanked the other one
11. Kicked, bit or hit with a fist
12. Hit or tried to hit with something
13. Beat up the other one
14. Threatened with a knife or gun
15. Used a knife or gun

#### *4.2.4. Procedure*

The study employed an interview method where participants were contacted by telephone and asked about the use of conflict within the family environment. One adult member of each of the families were contacted and asked to participate in an interview. The participant gave information on the demographic aspects measured by the study and the methods of conflict resolution within the family, for each of the different relationships; siblings, child and parent, husband and wife. In addition, participants were also asked about their own family environment, marital satisfaction and employment.

To explore the occurrence of multiple forms of verbal and physical aggression occurring within the family alongside sibling aggression, a subsample of the initial data set was selected. This was based on whether or not there were two or more children living in the family home, resulting in 994 participants. This is 46.38% of

the original 2143 participants included in the 1975 NFVS. This enabled the comparison between aggressive and non-aggressive siblings, as defined by the CTS scores.

#### *4.2.5. Statistical Analysis*

All analyses were conducted using IBM SPSS Version 22. Hypothesis 1 predicted that the frequency of sibling aggression would increase as the number of forms of aggression in the family environment increased. This involved the creation of two co-occurrence variables (one for verbal and one for physical aggression). Participants who had used one or more acts of aggression within the previous year (e.g. between parents and children or spouses) were classified as aggressive. The co-occurrence variables ranged from 0-4, reflecting the four possible types of aggression (child-to-parent, parent-to-child, husband-to-wife and wife-to-husband). Sibling aggression was measured on a continuous level, reflecting the scores from the CTS (Straus, 1979), and acted as the dependent variable for this hypothesis. Inspection of Table 4.3 revealed that the data were over-dispersed (the standard deviations were higher than the means), with strong positive skew for the frequency variables that used the CTS (Straus, 1979). This has been found frequently in studies using this measure and in these cases, standard regression techniques are inappropriate, with the preferred method of analysis being negative binomial regression (Gardner, Mulvey, & Shaw, 1995; Hilbe, 2007). This has been used in similar studies that have made use of the CTS and CTS2 (Straus, 1979; Straus et al., 1996) to measure the frequency of aggression (e.g. Bates, Graham-Kevan, & Archer, 2014; Guterman, Lee, Lee, Waldfogel, & Rathouz, 2009; Thornton, Graham-Kevan, & Archer, 2013). Two negative binomial regression analyses were therefore

conducted to examine whether co-occurring family violence could significantly predict the frequency of sibling aggression. The first with the frequency of verbal sibling aggression as the criterion variable and the second with the frequency of physical sibling aggression as the criterion variable. The predictor variables for each model represented co-occurring family violence (verbal and physical).

Hypothesis 2 predicted that there would be a greater likelihood of sibling aggression in families where parents were a witness to IPV in their own childhood. To explore this statistically, four Chi-squared tests were conducted, making use of the two nominal sibling aggression variables (verbal and physical aggression) and the two nominal variables that were concerned with witnessing aggression from a family member in childhood (witnessing father hitting a mother and a mother hitting their father). To allow for the Chi-squared analysis, the variables that measured verbal and physical sibling aggression were dummy coded and measured yes or no.

Hypothesis 3 proposed that children involved in delinquent behaviours in childhood would have higher rates of sibling aggression than those not involved in delinquent behaviours. The NFVS (Straus et al., 1980) measured delinquent behaviours through two nominal variables; (1) being expelled from school and (2) being caught doing something illegal. These served as the predictor variables in the two negative binomial regression analyses that were again carried out. The continuous frequency variables for verbal and physical aggression between siblings, as measured by the CTS (Straus, 1979) were the predictor variables. Negative binomial regression analyses were deemed the most appropriate method of analysis given the positive skew in the frequency variables from the CTS (Straus, 1979).

### 4.3. Results

*4.3.1. Hypothesis 1: There would be a greater frequency of sibling aggression in families with more than one form of family aggression co-occurring.*

As described in Section 4.2.5, a co-occurrence variable was created to address Hypothesis 1. This variable ranged from 0 to 4, reflecting the four possible types of aggression (child-to-parent, parent-to-child, husband-to-wife and wife-to-husband) present in the family. Table 4.2 shows how many forms of aggression co-occurred among the 994 participants included in this study, divided into verbal and physical aggression.

Table 4.2

Co-occurrence frequencies as a function of verbal or physical aggression (N=994).

<b>Number of forms of aggression</b>	<b>Percentage of participants (%)</b>	
	Co-occurring verbal aggression (N)	Co-occurring physical aggression (N)
0	8.6 (85)	25.9 (257)
1	7.8 (78)	37.5 (373)
2	16 (159)	24.8 (247)
3	21.8 (217)	7.6 (76)
4	45.8 (455)	4.1 (41)

The correlations, means and standard deviations of the co-occurrence and sibling aggression variables were also inspected to see if there were any preliminary differences between the number of forms of co-occurring aggression and the frequency of sibling aggression. These are shown in Table 4.3.

*Table 4.3.*

Pearson's bivariate correlations between predictor and outcome variables

	<i>N</i>	<i>M</i>	<i>SD</i>	Co-occurring verbal aggression	Co-occurring physical aggression	Verbal sibling aggression
Co-occurring verbal aggression	994	2.88	1.30			
Co-occurring physical aggression	994	1.27	1.06	.44***		
Verbal sibling aggression	863	37.61	36.47	.37***	.33***	
Physical sibling aggression	873	21.08	30.61	.29***	.34***	.70***

\*\*\*p≤.001

Inspection of Table 4.3 revealed that there were no correlations that exceeded .80. This meant that multicollinearity was not a problem in the sample (Field, 2009). The analysis of each research hypothesis will be described in turn.

Two negative binomial regression analyses were conducted to address this first hypothesis. Firstly, co-occurring family aggression (verbal and physical) was regressed onto the frequency of sibling verbal aggression. The results are shown in Table 4.4.

*Table 4.4*

Negative binomial regression of co-occurring physical and verbal aggression onto the frequency of verbal sibling aggression

	<b>df</b>	<b>B</b>	<b>SE</b>	<b>95% CI</b>		<b>Wald</b>	<b>Exp</b>	<b>p</b>
				<b>Lower</b>	<b>Upper</b>	$\chi^2$	<b>(B)</b>	
Intercept	1	2.10	.12	1.86	2.34	292.29	8.20	<.001***
Co-occurring verbal	1	.41	.04	.33	.50	90.15	1.51	<.001***
Co-occurring physical	1	.61	.12	.37	.86	24.42	1.84	<.001***
Co-occurrence verbal X co-occurrence physical	1	-.13	.04	-.20	-.06	12.78	.88	<.001***

Note: \*\*\* =  $p < .001$

Table 4.4 demonstrated that co-occurring verbal and physical family aggression, along with the interaction between these two variables significantly predicted the frequency of verbal aggression between siblings, in that as the number of forms of co-occurring aggression increased, the frequency of verbal sibling aggression increased. The strongest predictor in the model was co-occurring physical aggression. For every additional form of co-occurring physical aggression present in the family, the frequency of verbal sibling aggression increased by a score of .84. The interaction effect however, showed that for every increase in the number of forms of co-occurring verbal aggression, the strength of the effect between co-occurring physical aggression and the frequency of sibling verbal aggression decreased by 12%. The goodness of fit statistics showed an acceptable level of model fit (deviance = 1.35).

A second negative binomial regression analysis was conducted to explore whether co-occurring family aggression could significantly predict the frequency of physical aggression between siblings. The results of this are shown in Table 4.5.

*Table 4.5*

Negative binomial regression of co-occurring physical and verbal aggression onto the criterion variable of the frequency of physical sibling aggression

	df	B	SE	95% CI		Wald $\chi^2$	Exp (B)	p
				Lower	Upper			
Intercept	1	1.20	.13	.95	1.44	90.02	3.31	<.001***
Co-occurring verbal	1	.42	.04	.33	.51	90.45	1.39	<.001***
Co-occurring physical	1	.86	.13	.61	1.12	42.68	1.83	<.001***
Co-occurrence verbal X co-occurrence physical	1	-.14	.04	-.22	-.07	14.46	.81	<.001***

Note: \*\*\* =  $p < .001$

Table 4.5 demonstrated that co-occurring verbal aggression, physical aggression and the interaction between these two variables could significantly predict the frequency of physical aggression between siblings, in that as the number of forms of co-occurring aggression increased, the frequency of physical sibling aggression increased. The strongest predictor in the model was co-occurring physical aggression. For every additional form of co-occurring physical aggression present in the family, the frequency of physical aggression between siblings increased by a score of .83. The significant interaction effect demonstrated that for every increase in the number of forms co-occurring verbal family aggression, the strength of the effect between co-occurring physical aggression and the frequency of physical aggression between siblings decreased by 13.3%. Again, the goodness of fit statistic showed an acceptable level of fit for the model (deviance = 2.17).

*4.3.2. Hypothesis 2: There would be a greater likelihood of sibling aggression in families where parents were a witness to IPV in their own childhood.*

Four chi-squared tests were completed to test the second hypothesis of the study. The dependent variables were (1) verbal and (2) physical aggression between

siblings. The independent variables were whether the parents had witnessed their (1) father hit mother or (2) mother hit father in childhood. There were 2 levels to all variables, which corresponded to 'yes' or 'no'.

When looking at physical aggression between siblings, significant associations were found with both witnessing a father hit a mother ( $\chi^2 (1, N = 994) = 4.58, p = .032, \text{Cramer's } V = .068$ ) and witnessing a mother hit a father ( $\chi^2 (1, N = 994) = 3.85, p = .050, \text{Cramer's } V = .062$ ). Both tests demonstrated that witnessing aggression from a parent in childhood was significantly associated with participants having children that used physical aggression towards one another. When looking at verbal sibling aggression, there was no significant association with either witnessing a father hit a mother ( $\chi^2 (1, N = 994) = .35, p = .553, \text{Cramer's } V = .019$ ) or witnessing a mother hit a father ( $\chi^2 (1, N = 994) = 1.48, p = .224, \text{Cramer's } V = .039$ ) in childhood<sup>1</sup>.

*4.3.3. Hypothesis 3: Children involved in delinquent behaviour would have higher rates of sibling aggression than those not involved in delinquent behaviours.*

To address the third hypothesis, the correlations, means and standard deviations of the delinquency variables (i.e. getting kicked out of school and being caught doing something illegal) and the sibling aggression variables were inspected to see if there were any preliminary differences. These are shown in Table 4.6.

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<sup>1</sup> The Chi-squared analysis was also conducted for the co-occurrence variable used for hypothesis 1. Similar results were found, which indicated that witnessing aggression between parents was associated with an increased number of forms of family co-occurring physical aggression (but not co-occurring verbal aggression).

*Table 4.6.*

Pearson's bivariate correlations between the predictor and outcome variables.

	<i>N</i>	<i>M</i>	<i>SD</i>	<b>Being expelled/suspended from school</b>	<b>Being caught doing something illegal</b>	<b>Verbal sibling aggression</b>
Being expelled or suspended from school	980	2.07	.34			
Being caught doing something illegal	976	2.04	.36	.72***		
Verbal sibling aggression	863	37.61	36.47	-.01	-.04	
Physical sibling aggression	873	21.08	30.61	.04	.04	.70***

Note: \*\*\* =  $p < .001$

Inspection of Table 4.6 revealed that there were no correlations above .80, meaning that multicollinearity was not a problem within the sample (Field, 2009). To investigate the hypothesis further, two negative binomial regressions were conducted on the data. First, the two delinquency variables; (1) being expelled from school or suspended and (2) being caught doing something illegal was regressed onto the frequency of verbal aggression between siblings. The results are shown in Table 4.7.

*Table 4.7*

Negative binomial regression of the two delinquency variables onto the criterion variable of the frequency of verbal sibling aggression

	<b>df</b>	<b>B</b>	<b>SE</b>	<b>95% CI</b>		<b>Wald</b>	<b>Exp</b>	<b>p</b>
				<b>Lower</b>	<b>Upper</b>	<b><math>\chi^2</math></b>	<b>(B)</b>	
Intercept	1	4.74	.78	3.21	6.26	37.25	113.87	<.001***
Being expelled from school or suspended	1	-.24	.36	-.93	.46	.45	.79	.502
Being caught doing something illegal	1	-.71	.38	-1.45	.03	3.53	.49	.060
Being expelled from school X being caught doing something illegal	1	.20	.15	-.09	.48	1.76	1.22	.18

Note: \*\*\* =  $p < .001$

Table 4.7. demonstrated that the delinquency variables (1) being expelled from school or suspended and (2) being caught doing something illegal and the interaction between these two variables were non-significant predictors of the frequency of verbal aggression between siblings. These findings demonstrate that being involved in delinquent behaviours outside the home was not associated with the frequency of verbal aggression between siblings. The goodness of fit statistic showed an acceptable model fit (deviance = 1.55).

A second negative binomial regression analysis was conducted to explore whether the same two delinquency variables could significantly predict the frequency of physical aggression between siblings. The results of this are shown in Table 4.8.

*Table 4.8.*

Negative binomial regression of the two delinquency variables onto the criterion variable of the frequency of physical sibling aggression

	<b>df</b>	<b>B</b>	<b>SE</b>	<b>95% CI</b>		<b>Wald</b>	<b>Exp</b>	<b>p</b>
				<b>Lower</b>	<b>Upper</b>	<b><math>\chi^2</math></b>	<b>(B)</b>	
Intercept	1	3.92	.73	2.50	5.34	29.14	50.39	<.001***
Being expelled from school or suspended	1	-.46	.33	-1.11	.20	1.87	.64	.172
Being caught doing something illegal	1	-.48	.36	-1.19	.22	1.81	.62	.179
Being expelled from school X being caught doing something illegal	1	.25	.14	-.03	.52	3.15	1.28	.076

Note: \*\*\* =  $p < .001$

Table 4.8 demonstrated that the delinquency variables (1) being expelled from school or suspended and (2) being caught doing something illegal and the interaction between these two variables were non-significant predictors of the frequency of physical aggression between siblings. These findings demonstrate that being involved in delinquent behaviours outside the home is not associated with the frequency of physical aggression between siblings. The goodness of fit statistic showed an acceptable model fit (deviance = 2.52).

#### *4.3.4. Summary of Main Findings*

The statistical analyses revealed that co-occurring family aggression had a significant impact on the frequency of both verbal and physical aggression between siblings. As the number of forms of verbal and physical aggression increased within the family, there was a significant increase in the frequency of both verbal and physical aggression between siblings. Interaction effects also revealed that an increase in the number of forms of co-occurring verbal aggression in the family

diminished the strength of the significant effect between co-occurring physical aggression and the frequency of sibling aggression, both verbal and physical.

There was also a significant association between witnessing spousal physical aggression of parents in childhood and their children using physical aggression towards one another. Interestingly, this significant association was not present for their children using verbal aggression with each other. Finally, engagement in delinquent behaviour outside the home environment (namely being caught doing something illegal or being expelled or suspended from school) did not significantly predict the frequency of verbal and physical aggression among siblings.

#### 4.4. Discussion

Study 1 explored the effect of co-occurring aggression on siblings, using data from the 1975 NFVS (Straus et al., 1980). This study is unique because rather than just looking at two forms of aggression in the home it considers aggression between spouses, children and parents and siblings. It therefore represents a significant contribution to the research literature. Several key findings emerged from this investigation. Firstly, as co-occurring aggression increased in the family environment, the frequency of physical and verbal aggression between siblings also increased. This finding was found regardless of whether the type of aggression co-occurring was verbal or physical. Secondly, participants who witnessed physical IPV during childhood were more likely to have children who engaged in physical sibling aggression than those without exposure. This same association was not found for sibling verbal aggression. Finally, there was no association between the frequency of

sibling aggression and delinquent behaviour outside the home environment (being expelled or suspended from school and being caught doing something illegal).

The conclusions that this study draws surrounding the association between sibling aggression with (1) co-occurring family violence and (2) parents being a witness to IPV in their childhood highlights the seriousness of sibling aggression, reinforcing the need to place these behaviours in the family violence literature. Sibling aggression is often normalised within society (Khan & Rogers, 2015) but other forms of family violence, such as IPV and child abuse are not seen in the same way. By establishing an association between co-occurring family violence and sibling aggression, Study 1 has reinforced the modelling principles of social learning theory (Bandura et al., 1961) in that children who experience violence in the home environment may be more likely to imitate the behaviours and develop cognitive scripts that endorse the use of aggression to resolve conflict. This could be investigated in future research by looking at the specific role of cognitive scripts in relation to co-occurring aggression.

In the 1975 NFVS (Straus et al., 1980), the rates of both IPV and child abuse were 16% and 63% respectively. Rates of aggression between siblings however, were 82%. This suggests that a vast proportion of families living in the US in 1975 were violent. The more recent prevalence literature in this area is still varied, often showing high rates (e.g. Mackey et al., 2010), whilst rates of IPV and child abuse in Western cultures are relatively low in comparison, respectively at 17.1% (Office for National Statistics, 2016) and 15.2% (Finkelhor, Turner, Shattuck & Hamby, 2015). Perhaps the reasoning behind this is that current prevalence measures for sibling aggression capture more behaviours than intended, such as play fighting, thus inflating the prevalence rates of this form of family violence. At the same time,

sibling aggression remains neglected as a form of family violence in the wider society (Caspi, 2012). One of the reasons behind this is that much of the behaviours are normalised and perceived as play fighting, a normal part of child development (DiCarlo et al., 2015). Although this is a developmentally useful stage for children, a proportion of the behaviours are aggressive in nature, although intent to harm is not always present. It could therefore be that traditional measures of aggression, that are often used to measure the prevalence of sibling aggression, include play fighting alongside problematic behavioural acts. Future research in this field should aim to try and examine this in more detail, attempting to distinguish between play and sibling aggression.

#### *4.4.1. Limitations*

This study is not without limitations. The data analysed was dated, being a representative sample of families living in the US in 1975. Not only can this affect the generalisability of the findings, but the changing dynamics of the family environment should be considered. However, the dataset used was, to the author's knowledge, the most recent large scale study which considered all possible forms of family aggression. This demonstrates a need for an up to date study considering all forms of family aggression in the research literature.

Similarly, the nature of the data collection methods used may have impacted the results. The survey took place through telephone interviews and one member of each family was asked about all the different types of violence (between spouses, siblings and children and parents). Straus et al. (1980) have acknowledged this limitation, suggesting that the rates of sibling aggression could be underestimated because parents might not be aware of the true extent of aggressive behaviours that occur

between their children or they could forget some fights due to the acceptance of sibling aggression in the family environment. Asking children to answer the questions surrounding conflict with their sibling could overcome this. Thus, potentially providing a more accurate reflection of the actual extent of sibling aggression within the home.

The way that aggression was measured (i.e. using the CTS, Straus, 1979) may also serve as a limitation to the findings. As described in Section 1.1.2, play fighting is considered a developmentally beneficial behaviour for children (DiCarlo et al., 2015). By only asking about specific acts of aggression, the frequency data for sibling aggression may unintentionally include play fighting behaviours. In the future, research should seek to clearly make this distinction.

#### *4.4.2. Implications*

As this study is unique in its consideration of five forms of co-occurring aggression, there are implications for both practitioners and academics. More specifically, this study has highlighted the impact that co-occurring aggression can have on the frequency of sibling aggression. This demonstrates a need for multiple forms of violence to be recognised, identifying multiple victims and perpetrators within the family. Furthermore, this can highlight the propensity for multiple forms of family violence to result in a higher frequency of these types of aggression. There could be hidden victims and perpetrators within the home which need interventions or role models to learn the non-aggressive alternatives to resolve conflicts. This consideration could not only reduce the frequency of sibling aggression but also help reduce the effects of being exposed to aggression in the home and children carrying on using these aggressive behaviours in their own families.

#### *4.4.3. Conclusions*

Overall, Study 1 has provided an insight into the effect of multiple forms of family violence on siblings by demonstrating the association between exposure to aggression in childhood, co-occurring forms of family violence, delinquent behaviours in childhood and the frequency of verbal and physical aggression among siblings. These relationships highlight the potential seriousness of aggression between siblings. The societal intolerance for some types of family violence (e.g. IPV or child abuse) should be expanded to include sibling aggression. However, before this can be done, there is a need for future research to distinguish between play fighting and sibling aggression. This will allow resources and research to be targeted at those with sibling aggression problems, whilst avoiding pathologising developmentally normal and enjoyable play fighting.

## **Chapter 5**

### **Study 2: Exploring the Experience of Sibling Aggression**

Study 2 aimed to explore the experience of sibling aggression using qualitative methods of data collection. After a brief introduction, this chapter describes the methodological approach taken for the study, drawing on how the findings explore existing theories and research. The applications of the findings will also be described.

#### **5.1. Brief Introduction**

As described in Chapter 1, one of the core concerns in the sibling aggression literature is the ambiguity surrounding the distinction between play fighting and sibling aggression (e.g. Pellegrini, 2002a). Much of the prevalence research relies on reports of specific behaviours considered to be aggressive (e.g. Mackey et al., 2010; Straus et al., 1980) to determine whether an individual has been a victim and/or perpetrator of this form of family violence. This has the potential to inflate prevalence rates as acts of play fighting may be classed as sibling aggression. It is therefore important to explore the experience of sibling aggression in greater depth by focusing on factors that could explain why children use the behaviours, from people who define themselves as a victim and/or perpetrator of this form of family violence. Using a qualitative approach will allow for these experiences to be explored, using interviews to ask victims and/or perpetrators about sibling aggression.

### *5.1.1. Aims and Hypotheses*

This study aimed to explore the experience of sibling aggression, using a qualitative approach. Three research questions were posed; (1) How do participants distinguish between play fighting and sibling aggression? (2) Why did participants use aggression with their sibling(s)? (3) How do participants perceive the effectiveness of parental responses to sibling aggression?

## 5.2. Method

### *5.2.1. Design*

A within subjects design was used for the study. Participants took part in a semi-structured interview and a thematic analysis was used to analyse the interview data.

### *5.2.2. Participants*

Twenty participants recruited from the University of Central Lancashire took part in the study. These participants responded to advertisements placed around the university campus, contacting the researcher directly (see Appendix 1). Only those individuals who reported experiencing sibling aggression as a perpetrator or victim were invited to take part. As the definition of sibling aggression is debated within the literature, it was important for participants to identify themselves as victims and/or perpetrators of aggression. For this reason, sibling aggression was not defined to participants before taking part in the study. This provided an opportunity to see how participants made sense of their own experiences rather than being constrained to a prescribed definition (McDonald & Martinez, 2016). Two participants did not define themselves as a victim or perpetrator of sibling aggression after taking part in the

semi-structured interview. Their interview accounts were excluded from the thematic analysis, leaving a sample of 18 participants. The demographics of each participant are shown in Table 5.1.

*Table 5.1*

Demographic information for each participant

<b>Pseudonym</b>	<b>Sex</b>	<b>Age</b>	<b>Sibling relationships</b>	<b>Victim of sibling aggression?</b>	<b>Perpetrator of sibling aggression?</b>
Carrie	Female	25	2 older sisters and 1 younger brother. Biologically related.	Yes	Yes
Kelly	Female	21	1 younger brother biologically related to the participant.	No	Yes
Tom	Male	19	1 older brother and 1 older sister biologically related. Also 1 older step-sister.	Yes	Yes
Rachel	Female	20	1 younger brother biologically related.	Yes	Yes
John	Male	22	1 younger brother and 1 older sister biologically related. Also 1 older step-sister.	Yes	Yes
Tina	Female	25	1 older step-brother.	Yes	Yes
Olivia	Female	21	1 younger brother biologically related.	Yes	Yes
Mia	Female	22	1 older brother biologically related.	Yes	No
Jack	Male	18	1 younger brother and 1 younger sister biologically related. Also 1 younger step-brother and 1 younger step-sister.	Yes	Yes
Tim	Male	52	1 younger brother and 1 younger sister biologically related.	Yes	Yes
James	Male	32	1 younger sister biologically related.	Yes	Yes
Emma	Female	19	1 brother and 1 sister the same age. Biologically related.	Yes	Yes
Amy	Female	36	1 younger brother and 2 older sisters. Biologically related.	Yes	Yes
Leah	Female	18	1 younger brother biologically related.	Yes	Yes
Emily	Female	24	1 older brother biologically related.	Yes	Yes
Sam	Male	23	3 younger brothers biologically related.	Yes	Yes
Beth	Female	21	2 younger step-sisters and 1 younger step-brother.	Yes	Yes
Hannah	Female	23	1 older sister biologically related	Yes	Yes

\*Victim and perpetrator classifications were made by the participants themselves.

### 5.2.3. Measures

Participants completed a demographic information form, which included factors such as age, sex, number of siblings, family structure and whether they had previously been a victim or perpetrator of sibling aggression (Appendix 2). Following this, they took part in a semi-structured interview, as detailed below.

#### Semi-structured interview

The interview was where participants talked about their relationship with their sibling. This was semi-structured in nature. The interviews lasted between 15 and 55 minutes. The questions/topics asked to participants are shown in Table 5.2. These questions were used to identify topic areas and additional prompts and follow up questions were also asked when required, whilst remaining flexible in the approach taken. Each of the interviews were audio recorded and transcribed in the play script style. The play script style was deemed as most appropriate for the study because the aim of the study was concerned with the specific content that the participants discussed in their interviews, rather than the inflections, which are focused on in alternative transcription methods.

#### Table 5.2

Topic areas participants were asked about in the semi-structured interview (for the full schedule, see Appendix 3)

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#### **Semi-structured interview topics**

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1. Family structure
  2. Sibling relationship quality
  3. Arguments with siblings
  4. Escalation of aggression between siblings
  5. Physical aggression with siblings
  6. Parental involvement
-

#### *5.2.4. Procedure*

Recruitment posters were placed around the University campus to advertise the study (Appendix 1). Participants then contacted the researcher if they wished to take part. At this point, they were sent a copy of the consent form (Appendix 4), which enabled them to make an informed choice about participating in the research. They then arranged a time and date to take part in the study. Upon providing consent, participants completed a demographic information form and took part in the semi-structured interview. This asked about how they acted with their siblings in childhood. Upon completion of the study, participants were debriefed (Appendix 5).

#### *5.2.5. Analytic strategy*

A thematic analysis was used to analyse the data from the semi-structured interviews. To ensure that the process was systematic and structured, Braun and Clarke's (2006) recommendations for conducting thematic analysis were followed. Before transcription, each interview was listened to in full to gain familiarity with the data. After each of the interviews had been transcribed, the individual transcripts were read and re-read to increase this familiarity. At this point, initial ideas were noted. Initial codes were subsequently generated and each transcript was coded. Following this stage, the data set was looked at as a whole, identifying themes that occurred, along with any possible links between themes. These were then defined and reviewed. The transcripts were repeatedly reviewed to ensure that they were reflected well in the thematic analysis. All the transcripts were analysed following this process.

By following the recommendations of Braun and Clarke (2006), the analysis contained structure whilst still retaining the flexibility of the method. As Braun and

Clarke (2006) have proposed that thematic analysis should be either theory or data driven, the present study deviated from this and aimed to combine both, allowing for theoretical viewpoints to be drawn out, even though these may have not necessarily been anticipated. That is, as the previous research within sibling aggression is somewhat reductionist using aggression measures, the present study hoped to identify new ideas that had not previously been considered.

Yardley's (2000) characteristics for good qualitative research were considered in an attempt to demonstrate the validity of the methods used throughout the study. These will be described in turn. Firstly, following the completion of the thematic analysis, a member of the supervisory team experienced in conducting thematic analysis coded 15% of the transcripts. These were analysed for reliability and consistency amongst the themes derived from the data. Upon completion of this process, the codes were compared for consistency, finding that there was a high level of similarity between the two coders. If there was any discrepancy, this was discussed until an agreement was reached, as per the recommendations of Boyatzis (1998). That is, the codes identified by each of the coders measured the same parts of the data set. In some instances, the name of the code differed, but this was discussed and changed if required.

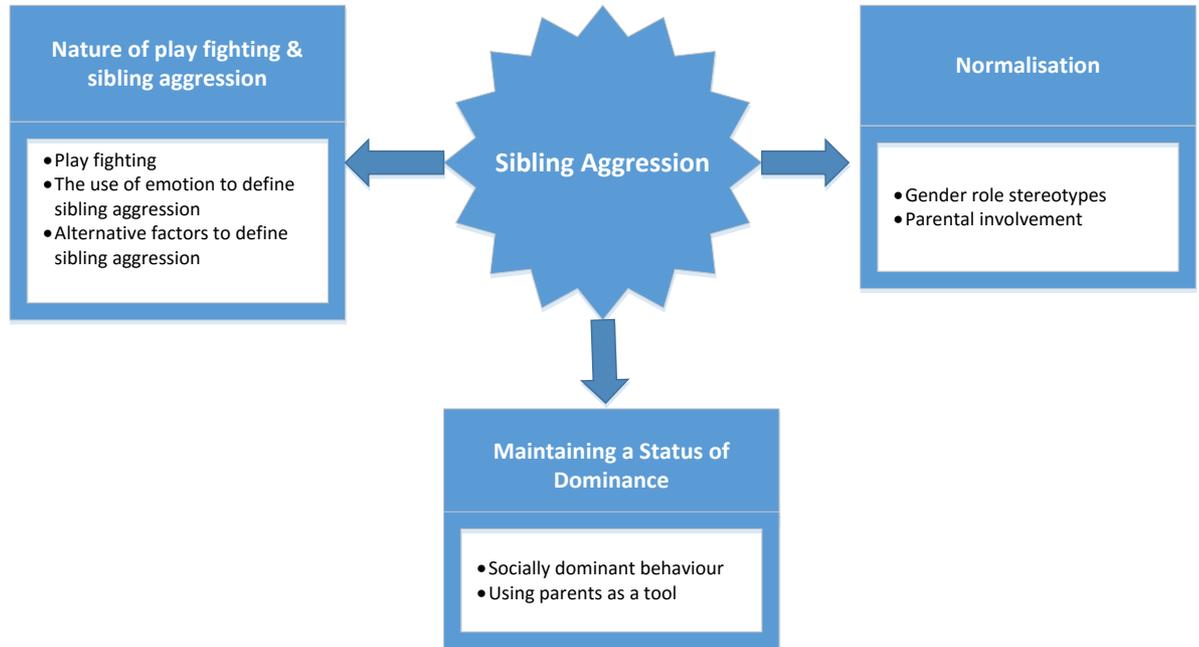
Yardley's (2000) characteristics of good qualitative research are: sensitivity to context; commitment and rigour; transparency and coherence; and impact and importance. By considering each of these characteristics, the quality of the methods used can be considered. Sensitivity to context was demonstrated through the consideration of the existing literature on sibling aggression. Through a thorough review, research questions were identified which would provide new information on this type of family aggression. Similarly, as the research topic was one which could

have been distressing to participants, the option of stopping the interview at any time was emphasised to participants, with on campus counselling services being available for them if required, thus showing a sensitivity to the participants that volunteered for the study. Commitment and rigour was demonstrated through the inclusion of all the data from participants. The study was exploratory in nature and despite having theoretical influences, there was an inclusion of all data, regardless of whether it fit with a specific theory or was contradictory. Transparency and coherence of the data has been shown with triangulation in the research. As it has been acknowledged that qualitative methods are subjective in nature (Madill et al., 2000), this process adds to the reliability of the data. Finally, the impact and importance of the study was considered. As there are very few studies that have interviewed perpetrators and victims of sibling aggression about their experiences, it brings new information to the forefront of the existing literature in the field. As the study had an interest in how people defined sibling aggression, participants selected themselves through responding to adverts. That is, they identified themselves as a perpetrator and/or victim of sibling aggression. This provides new information about how those individuals who have experienced sibling aggression. Ultimately this could have an impact upon how sibling aggression is viewed within society, with the contention that this form of aggression should be considered as a form of family violence rather than child's play.

### 5.3. Analysis

The thematic analysis revealed three main themes (depicted in Figure 2). These were (1) the nature of play fighting and sibling aggression (2) the normalisation of

sibling aggression and (3) maintaining a status of dominance. Each of these themes had several sub themes that will be described within the analysis of each theme.



*Figure 2: Themes reflecting the experience of sibling aggression (revealed through the thematic analysis)*

### *5.3.1. Theme 1: The nature of play fighting and sibling aggression*

Participants discussed their experiences of play fighting with a sibling, and how these escalated into aggression. This resulted in three subthemes (1) play fighting (2) the use of emotion to explain sibling aggression and (3) physical reasons for sibling aggression. Each one of these will be discussed in turn.

#### Play fighting

All participants reported engaging in play fighting and the majority of them viewed it as a positive, enjoyable experience.

*“...like it was actually something that I, I actually enjoyed doing”. (Emily)*

This is consistent with research that has shown play fighting to be enjoyable between siblings, with children being seen to laugh (Smith & Pellegrini, 2008). Similarly, play fighting was described as acceptable within the home, often considered as a healthy part of a sibling relationship.

*“it’s healthy part of relationship I would say for every family” (Tina),*

This demonstrated the acceptance of play fighting in the home and reinforced the perception that sibling aggression holds developmental benefits for children (Gelles, 1997) and is acceptable in society (e.g. Khan & Rogers, 2015). Parallels can be drawn to the existing literature on societal norms surrounding aggressive behaviours between siblings. As play fighting consists of similar aggressive acts to sibling aggression, it could explain why compared to other familial relationships, aggression between siblings is not considered a serious form of family violence (Caspi, 2012; Reese-Weber, 2008). Interestingly participants also reported that the aggression with their sibling was not acceptable with their friends.

*“If his friends were round, I wouldn’t play fight with his friends. It was just family members that were privy to play fighting [laughs]” (Carrie)*

By making it clear that play fighting was not accepted outside the sibling relationship, it suggests that the behaviours are acceptable only in the privacy of a sibling relationship. This further reinforced the social acceptability of such

behaviours and the influence of the family norms that endorse them, regardless of the sex of either sibling. This is somewhat reflective of the literature that has found norms accepting the use of sibling aggression (Gelles, 1997; Phillips et al., 2009) but is constrained to be only with siblings rather than people outside of the home environment. Interestingly, some participants referred to rules that they had made to stop the fighting from going too far. For example; one participant discussed the use of a 'safe word'.

*“...mum introduced the rule that if I said Luke you're hurting me, it wasn't playing anymore and it had to stop.” (Emily)*

This implied that play fighting carries with it boundaries, which when crossed, turned the behaviours into aggression. However, before these boundaries are crossed, play fighting is not perceived as aggression and should therefore be distinguished from intentional sibling aggression. Rules served as a protective factor to avoid play fighting escalating with siblings. Interestingly, a number of participants reported that when they were in school, or with friends outside the home, they protected each other.

*“...he did look after me and when we went out playing with his friends” (Emily)*

It could be implied from this, that although play fighting behaviours were accepted inside the home environment, when outside, there were different boundaries. Although it is accepted that siblings may use typically aggressive behaviours when play fighting with one another, this is not necessarily something

that happens in front of friends, or in a school situation. Similarly, for one participant, Kelly, her brother being taught that “*you don’t hit girls*” also served as a protective factor from physical aggression, both inside and outside the home. This is an interesting reflection of the chivalry norm (Felson, 2000), in that although all of the participants within the sample engaged in play fighting and saw this as acceptable in the home, they were chivalrous outside the home environment, becoming protective of one another.

However, play fighting was not perceived as a positive experience for every participant. Some felt that play fighting and aggression between siblings were the same, with childhood being used as an excuse to minimise the effects of aggression between siblings.

*“he was like 'oh its only play fighting' but he was actually hurting me” (Mia)*

This shows that by defining all aggression between siblings as play, the harm that siblings cause one another is sometimes minimised. However, the distinction between play and sibling aggression is not always easy to define. This is a similar reflection of the research literature, which has been ambiguous about what should be considered play and aggression (e.g. Phillips et al., 2009). For example, when asked what he thought about ‘play fighting’ James said:

*“I don’t know if I believe in it. I, I think our fighting was real fighting but it was play fighting as kids.”*

It is unclear from this whether James does differentiate between play fighting and aggression as this quote suggests that there is some ambivalence or difficulty in distinguishing these two behaviours.

#### The use of emotion to define sibling aggression

Many participants emphasised the importance of emotion in their distinction between play and sibling aggression. These included frustration, anger or fear. The build-up of emotions appeared to precipitate physically aggressive behaviours.

*“...if we got frustrated we got angry, if we got angry we got furious [laughs] and then we'd probably start belting each other.” (Amy)*

This demonstrates an awareness that physical aggression was often the result of unmanaged negative affect. By being unsuccessful in their attempts to verbally resolve a situation of conflict, the individual may experience a build-up of frustration and anger leading them to take the situation to a state of physical aggression. Indeed, in situations where negative affect is likely to be high, such as parental divorce, the use of aggressive behaviours may also be more likely. This was shown in the accounts of four participants.

*“I fought quite a lot with her because of what was going on.” (Jack)*

This implied that aggression towards a sibling was a result of unmanaged stress and negative affect. Interestingly, another key emotion that was used to define sibling aggression was fear, with age and gender being important factors that

contributed towards this emotion. More specifically, most participants reported fear towards an older sibling.

*“I felt afraid of her because she was older and stronger than me.” (Beth)*

This supported principles of RHP (Parker, 1974), in that an older sibling appeared to have a higher status of dominance within a group of siblings. However, gender appeared to be more important when a younger sibling was male. More specifically, female participants often reported feeling afraid of their younger male sibling.

*“I always felt more afraid because I just, I just thought that he was so much more like stronger and like he could hurt me more than I could hurt him.” (Leah)*

This implied that age is a factor that could diminish over time, with the physical qualities of male siblings being perceived as fear inducing in relation to aggression as they mature. Again, this a reflection of RHP (Parker, 1974) as the physical factors of children, such as size, strength and height contribute to this higher status and also the fear felt by siblings. Interestingly, some participants manipulated the emotion of fear in their sibling by carrying out behaviours to instil it. In the case of two male siblings, these were physically aggressive behaviours (i.e. pushing their sibling into a wall) but in the case of a female sibling, a non-aggressive method of inducing fear was described.

*“I terrorised Oliver because I had a torch that I used to ... draw a face on and then shine on the wall and I could change the colour so I used to pretend it was a nice like it was happy if it was on the white colour and then if it went red it was angry and it used to scare him [laughs].” (Carrie)*

All the participants, who discussed the methods of psychological aggression that they used to induce fear in a sibling described behaviours used towards a younger sibling. Again, this supports the idea that age is an important factor distinguishing between play and sibling aggression, reflecting the principles of RHP (Parker, 1974). Alternatively, not all the participants experienced feelings of fear with their siblings, regardless of age or gender factors.

*“I don’t remember ever feeling afraid and I wouldn’t have thought they’d be afraid of me. I think it was, it was a bit of the norm in our house to be honest”*  
*(Amy).*

This illustrated that fear was not the only factor that distinguished between those behaviours considered play and sibling aggression. In this case, the family norms should also be considered.

#### Alternative factors to define sibling aggression

A number of alternative reasons were also used to explain sibling aggression. These included age and to solve a disagreement. These factors were not discussed in relation to play fighting and only referred to by participants when talking about aggression. Firstly, age was used to explain the use of sibling aggression. It was

perceived to be acceptable for children to use physically aggressive behaviour towards one another when they lacked the experience or maturity to solve the situation in any other way.

*“Like at a younger age you don’t really know that you’re supposed to come to a compromise” (Tom)*

This suggested that at a young age, children used aggression to resolve conflict, as they did not have the prosocial skills to do this non-aggressively. This is similar to the principles of social dominance theory (Hawley, 1999, 2003a) that proposes that children who do not have the prosocial skills to resolve conflicts use aggression. Another reason for play fighting or arguments to escalate into physical aggression was to solve a disagreement. This was done when siblings felt that they were not winning or not getting their point across in an argument.

*“I think cos I wanted to, to win the argument to get my own way erm and not to let, like if I didn’t have anything to say back at the argument, then I might of like turned it into a fight” (Sam)*

This implied that aggression was often seen to be acceptable for resolving a disagreement when other non-aggressive methods for conflict resolution did not work, with aggression providing the best chances for the child to get their desired outcome. This appeared to show a purpose behind the physical aggression amongst siblings.

### 5.3.2. Theme 2: The normalisation of sibling aggression

When discussing their experiences of sibling aggression, the interview data suggested two processes that contributed to the normalisation of their aggressive behaviours by participants. This was done through (1) endorsing gender role stereotypes and (2) the way that parents intervened. These two factors provided the sub themes for what would be the normalisation of sibling aggression. These will be discussed in turn.

#### Gender role stereotypes

Throughout the interviews, many of the participants made reference to gender role stereotypes. Many female participants with older male siblings held the belief that boys enjoyed fighting so they became involved in such behaviours.

*“I think cos he was a boy that’s like, he liked fighting as it was and then I had an argument, give him a reason to fight” (Leah).*

Not only does this infer blame onto the male sibling, but it also suggests a degree of normality around aggression between siblings. That is, if they had a brother, their aggressive behaviours were as a result of having a male sibling. Two participants went a step further than this saying that aggression was the only way that they could communicate with their brothers.

*“...so with my brother that to me that was the only way of communicating with him, or well he’ll shut up if I punch him in the face” (Carrie)*

This implied that their male siblings were unable or unwilling to communicate in other ways, providing further justification for the use of aggressive behaviours. If a male was perceived to have no other skills to overcome a disagreement or situation of conflict, this may be the behaviour that they default to, rather than trying to use different methods of resolution. This was often a reason stated by female participants engaging in aggression with their male sibling. A small number of participants also mentioned how they had to learn how to defend themselves as a result of having a brother. This justified their aggressive behaviours towards a male sibling as they were acting in self-defence. Two female participants also described themselves as a 'tomboy'.

*“I think it’s to do with maybe rough and tumble, boys wanting to do that and then I was quite a tomboy so I used to, it was only me and Andrew that would play fight though.” (Carrie)*

By describing themselves in this way, the implication is that these behaviours are characteristic of boys and their [the girls’] engagement in play fighting was understood by their label of being a 'tomboy'. This shows that conceptualising sibling aggression as gendered, with males having a propensity for aggression, serves to normalise the behaviours that siblings use toward one another, thus making them acceptable.

### Parental Involvement

Participants often looked to their parents to tell them whether aggression with their sibling was acceptable and normal. More specifically, for eleven of the

participants, parents intervened in the aggression when they became aware that their children were being using physically aggressive behaviours with each other. This therefore ended many of these 'fights' that the siblings became involved in.

*“I've always been told off for doing that with my brother.” (Jack)*

This seems to reflect the literature on parental involvement in sibling aggression well (e.g. Button & Gealt, 2010). By telling children off for their aggression, participants knew that the behaviours were not acceptable for the family environment. However, for some participants, intervention alone was not enough to stop the aggression and they sometimes fought secretly.

*“...they seem to be unaware a lot of the time so I don't know, maybe we were quite erm secretive about it [laughs]. Secret scrap [laughs].” (Amy)*

That way, they could resolve their conflict without fear of punishment. This suggested that although these children knew the behaviours were wrong, they saw them as an effective method of conflict resolution. This implied that although parents tried to stop aggression between their children, they were not always successful.

When intervention by parents was successful, participants reported feelings of relief. Firstly, relief was found in relation to fear. That is, participants felt scared and the intervention stopped or reduced such feelings. Through the parental intervention, the behaviours ceased and there was a reduction in fear as they were no longer in a situation of conflict. Secondly, relief was found in relation to the escalation of the

behaviours. That is, participants felt that they needed the intervention to stop the seriousness of the behaviours increasing.

*“...they used to get really out of control really quickly so it was probably good if one of them was there because I dread to think what I'd have done to her.” (Carrie)*

Not only does this illustrate the importance of parental involvement, but it also illustrates how important it is in preventing the escalation of aggression between siblings. By having such interventions, participants felt relieved from either the escalation of the aggressive behaviours or the fear that they were experiencing towards their sibling.

Contrastingly, for nine of the participants, no intervention was provided from a parent. Although some participants knew that their parents disapproved of their aggressive behaviours, they noted that their parents did not try and stop them from being physically aggressive with each other.

*“...they'd just say stuff like 'oh brother and sisterly love' stuff like that. This is what brothers and sisters do, I did it with mine.” (Mia)*

This contributed to the normalisation of such behaviours, by implying an acceptance of siblings being aggressive with one another to resolve a disagreement. This is consistent with evidence that no intervention reflects permission for the behaviours within the family (Kramer et al., 1999).

### 5.3.3. Theme 3: Maintaining a status of dominance

Throughout the interviews, participants discussed themselves or another sibling as being more dominant in the relationship, with factors of age, size and strength appeared to be important in aggression between siblings. Sub themes of socially dominant behaviour and using parents as a tool were revealed for this theme and will be discussed in turn.

#### Socially Dominant Behaviour

The sibling perceived to be the most dominant in the relationship was most often the older sibling within the family.

*“...I didn't get my own way so I'd do anything I could to get it.” (Kelly)*

By being older, they felt that they deserved to gain control of what they wanted. This supports the literature on both RHP (Parker, 1974) and social dominance (e.g. Hawley, 1999, 2002), as the older child often used aggression to gain something they wanted. When holding this status of dominance, the participants instigated arguments over things such as possessions, chores and privileges that escalated into physical aggression. This reflected a need for the child to gain control of resources (e.g. Hawley, 2002) rather than simply engaging in aggression for reasons of play. Interestingly, for female participants, the dominant sibling appeared to change over time. That is, if they had a younger male sibling, who overtook them in height or physical strength in childhood, the male would become the more dominant person in the dyad, thus having more authority, higher RHP (Parker, 1974) and hence a higher status of dominance.

*“That’s the problem when it turns when you, you’re bigger than them but then suddenly they get bigger than you and you think ‘oh this isn’t fair anymore”.*

*(Carrie)*

This suggests that not only does RHP (Parker, 1974) play an important part in defining a status of dominance, but it also affects how likely other siblings are to provoke aggression to gain something that they want, with age being of less importance as children grow older. At this point, age is less important than factors such of size and strength. If one sibling is perceived to be more dominant than the other, the lesser dominant siblings were less likely to instigate aggression. However, it should be recognised that when an older female sibling felt a shift in their status due to increased size and strength of younger brothers, they discussed using their parents as a tool, to get what they wanted.

#### Using Parents as a Tool

When a participant felt that they or their sibling held a lower status of dominance or authority, they frequently referenced the lesser dominant sibling using parents as a tool to help them get what they wanted. This was effective as parents often appeared to support the younger sibling when a situation of conflict arose.

*“When she involved me parents, when we were fighting and I always used to get told off cos I was bigger, and older and I should know better” (James)*

By involving parents, the less dominant child appeared to get what they wanted in an argument, whether this was a possession or simply their own way. This is consistent to the research from Recchia et al. (2013) and Recchia and Howe (2009) who found favouritism in the way that parents intervene, with the parental belief that when the children are older they can speak up for themselves. Similarly, a high number of female participants, regardless of age, appeared to use emotions to illicit parental sympathy and support to gain something they wanted.

*“I remember a couple of times, crying on purpose [laughs] just so that em they'd get told off” (Amy)*

By crying, they gained support from their parents and in turn, what they wanted. This potentially overcame their lower dominance status. By using parents to their advantage, they knew that they increased the chances that they would be successful in their aggressive encounter with a sibling. Interestingly, along with crying, lying was also a tool used by two participants to gain something that they wanted.

*“I'd hurt myself and say Matt had done it ... I'd try everything just to try to get him in trouble.” (Kelly)*

Lying, however, did not always have the outcome that the participant desired, as, often the parents realised that the child was being deceptive to get what they wanted. This could perhaps explain why only two participants reported using this method. If

unsuccessful using this method, a participant may not get what they want and instead, were punished by parents.

*“I’d lied about something and blamed Matt, and tried to get him in trouble that they’d then shout at me and send me to my room because they knew it was me that was lying” (Kelly)*

#### 5.3.4. Summary of the thematic analysis

The analysis revealed a wealth of information in relation to the experience of sibling aggression. Play fighting and sibling aggression were distinguished by the enjoyment reported from engaging in play fighting behaviours and negative emotions (e.g. frustration, anger and fear) reported for sibling aggression. Additional factors of age and solving a disagreement were also found to distinguish between the two behaviours. Each of these has highlighted a function or motivation behind sibling aggression, unlike play fighting.

The normalisation of sibling aggression was also shown in the accounts of participants and their reflections on their parents. Firstly, some participants demonstrated this in the way that they attributed their involvement in these behaviours to gender role stereotypes. Parents were also reported to have showed this in the way that they intervened in the behaviours, with no intervention being interpreted as permission for the behaviours to occur in the family home. Even when parents did intervene, however, this was not always effective in ending sibling aggression. This, alongside the reflection of socially dominant behaviours in both the sources of conflict between siblings and the maintenance of a higher status of dominance provided an in-depth account of sibling aggression.

#### 5.4. Discussion

This study aimed to qualitatively explore the experience of sibling aggression, specifically looking at how participants retrospectively described and conceptualised their experiences. Three key themes associated with the experience of sibling aggression were identified through the thematic analysis of the semi-structured interviews. The factors of normalisation, dominance and the distinction between play and aggression were important with respect to the experience of sibling aggression. A status of dominance was an important factor, maintained using socially dominant behaviours and using parents as a tool. Aggressive behaviours between siblings were often normalised through endorsement of gender role stereotypes and the way that parents intervened. Finally, the distinction between play and sibling aggression was made using emotion, the need to solve a disagreement and being young in age to describe sibling aggression.

The findings from this study are important when exploring the prevalence of sibling aggression. Current measures of aggression between siblings are based on the traditional family violence measures that focus on specific behavioural acts (e.g. CTS/CTS2; Straus, 1979; Straus et al., 1996). This study has revealed that it is not the aggressive behavioural acts of aggression that are important in determining prevalence but the context and motivations of these. This finding therefore has potential applications for the existing research literature that show prevalence rates to be as high as 91% (Roscoe et al., 1987), higher than prevalence rates of other forms of family violence, such as IPV and child abuse (Walsh & Krienert, 2014). Without taking context into account, these could be inflated, including instances of play fighting between siblings. Play fighting behaviours were described by

participants in this study as being enjoyable and governed by boundaries and rules. This indicates that are acceptable and a normal part of child development (Pellis et al., 2005; Smith & Pellegrini, 2008). Using the context and motivations of the behaviours to gather insight into the true prevalence of sibling aggression could therefore help to identify victims and/or perpetrators who need support and intervention.

The findings from this study can also add to the understanding of why siblings engage in aggression with one another. The inability to deal with negative emotions (such as fear, anger and frustration) with non-aggressive behaviours suggest that emotional management, combined with a lack of prosocial alternatives to deal with conflict in childhood is key to explaining the use aggression among siblings. Individuals who under-regulate their feelings of anger have been shown to be more likely to engage in aggressive behaviours (Robertson, Daffern & Bucks, 2012). Using aggression to deal with negative emotions also has direct links with the IPV literature (e.g. Birkley & Eckhardt, 2015; Finkel, 2007; McNulty & Hellmuth, 2008). That is, the ability to self-regulate negative emotions is said to help partners resist using aggression when feeling compelled to do so (Finkel, 2007; McNulty & Hellmuth, 2008). Throughout their recollections of sibling aggression, many participants in this study of the thesis described how their feelings of frustration and anger encouraged them to consciously decide to use aggression with a brother and/or sister. This suggests that they lacked the ability to self-regulate their emotions and turned to aggression to resolve conflict. Such findings stress the importance of the development of good emotional regulation and prosocial skills when dealing with a situation of conflict.

The distinction that participants made between play fighting and sibling aggression can provide insight into how this form of family violence is defined. As described in Section 1.1.1, there is an overlap between the prescribed behaviours for each of the various definitions of sibling aggression. In their interview accounts, none of the participants distinguished sibling aggression from play fighting by the types of behaviours engaged in. Rather, the focus was placed on the context, intent and motivations of the behavioural acts. This suggests that definitions should not necessarily describe a list of specific behaviours but instead should look at context, intent and motivation. The described motivators of this form of family violence can however, be directly compared to the motivations for physical, psychological and verbal aggression. That is, dealing with negative emotions is said to be a motivator for physical aggression (Rafaelli, 1995), asserting dominance is a motivator for psychological aggression (Whipple & Finton, 1995) and verbal aggression is often a precursor to physically aggressive behavioural acts (Infante et al., 1990). Each of these individual motivators were described by participants as contributing to sibling aggression. This suggests that sibling aggression encompasses all three individual types of aggression (verbal, psychological and physical) and any definition of this form of family violence should take this into account.

#### *5.4.1. Limitations*

This study is not without limitations. There are several factors that may have affected the results of the study, which could be improved upon in future research. These will be described in further detail, with suggestions about how these improvements can be made.

The retrospective nature of the study could serve as a limitation in that participants may have difficulty in remembering instances of aggression with their sibling, becoming reliant upon accounts which they have been told from family members, or underreporting their experiences (Hardt & Rutter, 2004). Despite this, the methods used in this study have shown how participants explain their experiences later in life. It should not be implied that this is how they would have necessarily perceived the acts of aggression at the specific time, but it is how they explain them when in adulthood. This provides a useful contribution to knowledge because it provides insight into the social attitudes and norms that participants hold. Building on this, future research could take place in childhood, with participants keeping a diary in which they describe their experiences of sibling aggression as they happen, reflecting upon their feelings directly after the event.

The research literature has found that males and females interpret instances of aggression differently (Harris & Cook, 1994). This could perhaps explain the over-representation of females within the sample. As the participants in the study were self-identified victims and/or perpetrators of sibling aggression, it could be that female participants considered their experiences of aggression to be more serious than a male participant with the same experiences would. This may have unintentionally affected the findings, with males being less likely to come forward and speak about their experiences of sibling aggression as they may not see them as being particularly serious enough to speak about, like research which has found males less likely to seek help (e.g. Seager & Wilkins, 2014). To overcome this in the future, more focus could be placed on recruiting male participants for the study.

As the nature of qualitative data analysis is interpretative, different researchers could interpret the data differently. That is, different themes may be drawn out of the

interview data. This has been controlled for throughout this study using Yardley's (2000) criteria for good qualitative design and comparing coding from two different researchers. There is therefore a need for future research to look at experiences of sibling aggression to see similar themes are found.

#### *5.4.2. Implications*

The findings from this study have applications for both clinicians and the research literature. By making a distinction between play fighting and sibling aggression, there is scope to identify siblings where intervention is necessary. Not only would this help the specific individuals in need of intervention, but also help society recognise that in some cases, sibling aggression is not a normative part of childhood. In terms of the research literature, the study has identified key aspects important to the experience of sibling aggression. This opens the field to new directions in future research. More specifically, as the current measures used within studies which look at sibling aggression are most often adapted from existing scales of aggression, looking at only specific acts of aggression (e.g. Khan & Cooke, 2013; Relva, Fernandes & Costa, 2013), the findings could be developed into a specific measure of sibling aggression experiences. That is, the items on the scale will have come from themes derived from interviews of victims and/or perpetrators of this form of aggression.

#### *5.4.3. Conclusions*

The study was one of the first within the field considering the experiences of sibling aggression from self-identified perpetrators and/or victims. The study found that factors of normalisation, maintaining a status of dominance and the distinction

between play and aggression were important with respect to the experience of sibling aggression. Like Study 1 of this thesis, the findings presented throughout this chapter highlight the need for measures of sibling aggression to go beyond that of the specific acts used between siblings. By considering the functions and context of the behaviours, a broader picture of the experience of sibling aggression can be attained. Future research could explore these experiences in more depth. Much of the research within the literature places focus upon prevalence rates and predictors of this form of aggression. By placing the focus onto the experience of sibling aggression, this expands and draws together the present research literature.

## **Chapter 6**

### **Study 3: The Development of the Experiences of Sibling Aggression (ESA) Scale**

Study 3 aimed to develop a measure of sibling aggression based on the interview accounts from victims and perpetrators of sibling aggression, as described in Study 2. After a brief introduction, this chapter reports on the analysis of the data paying attention to the factor structure to see if the questionnaire reflected the themes from Study 2. The ability of the ESA scale to distinguish between victims or perpetrators of sibling aggression and a control group of play fighters (participants who engaged in aggressive behavioural acts but did not identify as a victim or perpetrator of sibling aggression) will also be explored. Finally, there will be a discussion about how the findings contribute to the existing research literature, the implications of these and a consideration of avenues for further research.

#### **6.1. Brief Introduction**

As established in Chapter 1, play fighting has been overlooked in the prevalence literature concerning sibling aggression (e.g. Graham-Bermann et al., 1994; Recchia & Howe, 2009). Rather, previous studies focus on the frequency of individual acts of aggression. Study 2 established that play fighting and sibling aggression serve different functions and motivations to one another, even when similar aggressive behaviours may be used. Without information on the behavioural context, it is difficult to gather a true picture of the prevalence of sibling aggression. One way this could be done is through the development of a questionnaire that does not focus on individual acts of aggression. This could then be used alongside act

based measures of sibling aggression, such as the CTS/CTS2 (Straus, 1979; Straus et al., 1996; see Section 1.2. for a description of the questionnaires).

Questionnaires are a useful tool to gather data from a large quantity of people. Thematic analysis of the interview data (see Chapter 5) led to the creation of the ESA scale based on the themes which emerged: the nature of aggression, normalisation and dominance. Questionnaires were then created from these themes and conducted with a larger sample. Existing measures that are currently used to explore this type of family violence, such as the CTS2 (Straus et al., 1996), PRQ (Rigby & Slee, 1993), JVQ (Hamby et al., 2004) and BSQ (Graham-Bermann & Cutler, 1994), have not been based on accounts of people who have experienced sibling aggression (see Section 1.2 for a detailed description of these measures). Therefore, the purpose of this study was to provide a new measure to specifically explore sibling aggression, representing a significant contribution to the literature

To facilitate research on sibling aggression with adult participants, the questionnaire was aimed at adults, who retrospectively reported on their experiences of sibling aggression. Whilst a measure targeting children to explore their experiences of sibling aggression at the time of its occurrence would provide useful findings to inform the development of early interventions, this study provides a new perspective on how people understand and make sense of their experiences when they reach adulthood. This is consistent with existing studies within the research literature that have also asked participants to retrospectively reflect on their experiences of sibling aggression (e.g. Hoetger, Hazen & Brank, 2015; Relva, Fernandes & Mota, 2013). Taking this methodological approach is appropriate given the infancy of research within this field. When the use of this measure is established amongst adult participants, the use of it could be explored with children.

### 6.1.1. Developing the ESA scale

The ESA scale was developed to reflect the experiences of sibling aggression from the self-identified victims and perpetrators interviewed in Study 2. The themes that emerged from the thematic analysis (see Figure 2) led to the development of the items and subscales of the measure. DeVellis' (2003) eight guidelines for scale development were followed. These are described in turn.

1. *Clearly determine what you want to measure* – The development of the questionnaire was based on themes revealed in the thematic analysis in Study 2 (Section 5.3). More specifically, these were; the nature of play fighting and sibling aggression, normalisation and maintaining a status of dominance. This resulted in a questionnaire unique in the sibling aggression literature, exploring intent, motivations and context of the behaviours rather than the individual acts of aggression.
2. *Generate an item pool* – DeVellis (2003) encourages a large item pool to allow for item redundancy. The initial pool for this study consisted of 67 items, with the intention that the statistical analyses would allow for items to be dropped. As per the guidelines, long, difficult to understand, double barrelled and ambiguous questions were avoided.
3. *Determine a format for measurement* – To avoid ambiguity and confusion, it was decided that all items would be measured on the same response scale (from 1 to 5) to allow for both summation of the items into subscale scores and comparisons across the different subscales. Likert scales are one of the most common methods of measurement in questionnaires, especially when exploring attitudes, beliefs and opinions (DeVellis, 2003). In this study, a Likert scale was used because it enabled the exploration of the extent to which participants

agreed with the sixty-seven questions that were derived from the interview data. For example, in the interviews, participants discussed how play fighting was an enjoyable behaviour. This was reflected in the questionnaire with the item “*I enjoyed physically play fighting with my sibling*”.

4. *Have the initial pool reviewed by experts* – The questionnaire was reviewed by all members of the supervisory team for content validity. The experts were familiar with the work of the thesis. They were also aware of the proposed subscales and how these linked to the themes from the thematic analysis.
5. *Consider inclusion of validation items* – To check for concurrent validity, additional measures were included in the questionnaire used in this study. For example, the BSQ (Graham-Bermann & Cutler, 1994) was included in the questionnaire battery. It would be expected that the subscales of the both the BSQ (Graham-Bermann & Cutler, 1994) and the new ESA scale would be moderately correlated given that they are measuring related constructs.
6. *Administer items to a development sample* – The ESA scale was then administered to a large sample of participants (described in the method section of this chapter). To maintain consistency with Study 2, where participants self-identified themselves as victims and/or perpetrators of sibling aggression, the same method was employed for this study. These participants were compared to a control group of people who did not engage in aggression with their sibling.
7. *Evaluate the items* – Following data collection, the performance of individual items was examined to identify which would be included in the final scale. This was achieved by an examination of both the correlations between items and conducting a factor analysis on the data. Correlations of the items identified items that were not correlated with one another for removal from the

questionnaire. As the measure was developed with several subscales in mind and therefore has a proposed theoretical construct linking to the themes from Study 2, it was tested using a confirmatory factor analysis.

8. *Optimising scale length* – Whilst longer questionnaires are more reliable than shorter ones, a 67-item questionnaire was adopted in this study as it was felt that participants would be more willing to complete shorter questionnaires and therefore a larger sample would be achieved. To refine scale length, Cronbach's alpha levels, a measure of reliability were examined to inspect the reliability of the ESA scale. If the alpha score was low, items with correlations that contributing the least to the internal consistency of the measure were removed. The 67 items are shown in Table 6.1.

*Table 6.1.*

The individual items of the ESA scale

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**ESA Scale Items**

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1. I engaged in physical play fighting with my sibling
2. I started fighting with my sibling to get something which was mine
3. We fought to solve a disagreement
4. I got told off when I fought with my sibling
5. I enjoyed fighting with my sibling
6. My parents fought with their own sibling when they were kids
7. Play fighting is different to real fighting
8. I did things to make my sibling afraid
9. Boys enjoy fighting more than girls
10. It is normal to fight with your sibling
11. I became stronger than my sibling when I grew up
12. I used to cry to get my sibling told off
13. My sibling enjoyed fighting with me
14. I enjoyed physically play fighting with my sibling
15. My sibling always started the fighting
16. I engaged in verbal play fighting with my sibling
17. I was afraid of my sibling when we were fighting
18. I never felt afraid of my sibling
19. I fought with my sibling to get what I wanted
20. I fought with my friends
21. When my sibling grew up they became bigger than me
22. Even if we were told off for fighting, my sibling and I would still find somewhere to fight with each other
23. It is in a child's DNA to be violent
24. As we grew up I started the majority of fights with my sibling
25. I was stronger than my sibling so found it easy to get what I wanted
26. I didn't start any fights with my sibling
27. I became bigger than my sibling when I grew up
28. When my sibling grew up they became stronger than me
29. I did anything I could to get my sibling into trouble
30. I got what I wanted when I fought with my sibling
31. My sibling was afraid of me when we were fighting
32. I enjoyed verbally play fighting with my sibling
33. My parents stopped fights getting out of control
34. I told my sibling to stop play fighting when they were hurting me
35. My sibling used to cry so that I would get told off
36. Any argument gave me a reason to fight with my sibling
37. My sibling told me to stop play fighting because I was hurting them
38. I felt afraid of my sibling because they were stronger than me
39. As we grew up my sibling started the majority of fights with me
40. My sibling did anything they could to get me into trouble
41. Any argument gave my sibling a reason to fight
42. My parents didn't always know that I fought with my sibling
43. I protected my sibling when we were at school or with friends

44. My sibling always started to fight with me when they wanted something that I had
  45. My parents didn't like me and my sibling fighting with each other
  46. I had to learn to defend myself because my sibling liked to fight
  47. I only fought with my sibling because they fought with me
  48. Real fighting with my sibling happened when we were angry
  49. I did anything I could to get my own way in a disagreement with my sibling
  50. My parents used join in when they saw us play fighting
  51. I always ended up giving my sibling what they wanted because they were bigger than me
  52. I told on my sibling to my parents so that I could get what I wanted
  53. My sibling told on me to my parents so that they got what they wanted
  54. I found it easy to get what I wanted because I was bigger than my sibling
  55. I always gave my sibling what they wanted because they were stronger than me
  56. Real fighting with my sibling happened when we were frustrated
  57. I only fought with my sibling when I was angry with them
  58. My parents never took my side when my sibling and I were getting told off
  59. I fought with my sibling because it was the only way to communicate with them
  60. My sibling and I fought with each other outside the home
  61. You can get away with fighting if it is with your sibling
  62. My parents always took my side when my sibling and I were getting told off
  63. Real fighting with my sibling was to solve an argument
  64. It was quicker to fight over something than to talk about it with my sibling
  65. My sibling protected me when we were at school or with friends
  66. All brothers and sisters fight with each other
  67. My parents thought that fighting with my sibling was normal
- 

#### *6.1.2. Aims and Hypotheses*

The final study in this thesis aimed to validate a new measure of sibling aggression. The rationale for this study was the identification in previous literature of a gap in knowledge about this form of family violence. In this study, four hypotheses were put forward.

Firstly, it was hypothesised that the items in the ESA scale would form subscales related to the three themes derived from the interview accounts in Study 2: dominance, normalisation and the nature of the aggression.

Secondly, it was predicted that the ESA scale would be related to the BSQ (Graham-Bermann & Cutler, 1994). As the BSQ (Graham-Bermann & Cutler, 1994) is the only questionnaire that has been specifically designed to discriminate between dysfunctional and non-dysfunctional relationships it was expected that there would be some association between the two measures as they are measuring the same construct. This would determine the concurrent validity of the ESA scale.

Thirdly, it was hypothesised that the subscales of the ESA scale would be able to predict sibling aggression. As this study specifically aimed to develop a scale to measure sibling aggression, it was necessary to explore the ability of the questionnaire to predict this form of family violence.

Finally, it was hypothesised that participants would have significant differences in their scores on the subscales of the ESA scale, dependent on their experience of sibling aggression. Higher scores in each subscale would indicate experience of sibling aggression by both victims and perpetrators whilst lower scores would indicate no sibling aggression and play fighting only. As the research literature has not explored differences in the experiences of these groups in depth, so this study provided a unique contribution to the research literature.

## 6.2. Method

### *6.2.1. Design*

A self-report within subjects design was used for the study. Participants were provided with a questionnaire booklet that asked them about their experiences of resolving conflict with a sibling in childhood. They were asked to retrospectively report on the sibling that they felt they had the most conflict with.

### 6.2.2. *Participants*

In total, 327 participants were recruited for the study. Participants responded to advertisements placed around the University of Central Lancashire campus, on Facebook and Twitter (see Appendix 6 for a copy of the recruitment poster). They were directed to an online questionnaire, but could request a paper one if they wished. Overall, 141 participants (43.12%) completed the questionnaire online and 186 (56.88%) completed a paper copy. If they completed a paper questionnaire, they handed it to the researcher upon completion.

In total, there were 110 males (33.60%), 215 females (65.70%) and 2 participants who did not report their gender. Participants ranged in age from 17 to 62 years old (mean = 23.63, S.D. = 8.74). To take part in the study, participants had to have at least one sibling. One participant reported that they did not, so they were removed from the sample. Therefore, in total, the analysis was based on a sample of 326 participants. Participants could identify as both victims and as perpetrators of sibling aggression. Three-fifths of the participants (N = 194, 59.30%) defined themselves as a victim of sibling aggression and just over half (N = 176, 53.80%) defined themselves as a perpetrator. One hundred and fifteen participants were assigned to the control group as they said that they had not been a victim or a perpetrator of sibling aggression. Two participants did not answer yes or no and were removed from subsequent analyses.

### 6.2.3. *Materials*

A questionnaire battery was developed. This included demographics such as the participant's age, gender and nationality as well as whether they had children and siblings. They were then asked about their relationship with siblings and previous

experience of sibling aggression, as both a perpetrator and victim (see Appendix 7 for the demographics questionnaire). Participants answered the questions; “*Have you ever been a victim of sibling aggression?*” and “*Have you ever been a perpetrator of sibling aggression?*”. This allowed them to be categorised as victims and/or perpetrators of sibling aggression and to allocate them to a control group if they had not experienced either. Two questionnaires, the ESA scale created for this study and the BSQ (Graham-Bermann & Cutler, 1994), are now described in full.

#### *The Experiences of Sibling Aggression (ESA) scale*

As described in Section 6.1.1, the ESA scale was used to assess participants’ experiences of sibling aggression, based on the thematic analysis of the interview accounts that were described in Chapter 5. The questionnaire consisted of 67 items, where participants indicated the extent to which they agreed with a presented item on a Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The individual items are shown and described in Table 6.1 (Section 6.1.1).

#### *The Brother-Sister Questionnaire (BSQ; Graham-Bermann & Cutler 1994)*

The BSQ (Graham-Bermann & Cutler, 1994) was used to determine the concurrent validity of the ESA scale. The BSQ (Graham-Bermann & Cutler, 1994) is a 38-item questionnaire, with four subscales: *coercion*, *boundary maintenance*, *empathy* and *similarity* (see Appendix 8 for a full copy of the questionnaire). Items on this measure are rated on a Likert scale ranging from 1 (not very much) to 5 (very much). Example items in the BSQ include: “We do a lot of arguing or fighting” (empathy); “He or she always tries to do what I am doing” (boundary maintenance); “We like to do the same things” (similarity); and “I feel used and taken advantage of

by him or her” (coercion). The total scores for each subscale were used. A high score measured on any subscale was indicative of higher levels of the behaviours. The Cronbach’s alpha scores reported by Graham-Bermann and Cutler (1994) were 0.92 for empathy, 0.85 for boundary maintenance, 0.73 for similarity and 0.69 for coercion. For the present sample, the Cronbach’s alpha scores were; 0.94 for empathy, 0.90 for boundary maintenance, 0.82 for similarity and 0.56 for coercion, demonstrating a good level of reliability for the questionnaire (although coercion could be considered low).

### *6.2.3. Procedure*

After gaining ethical approval for the study, participants were recruited either online or through opportunity sampling on the University of Central Lancashire campus. After reading an information page (Appendix 9) and providing consent, participants completed the questionnaire battery. They were informed that upon completion of their questionnaires, either online or by handing a paper version back to the researcher, their responses would become anonymous so withdrawal after this point would not be possible. Following completion of the questionnaire, participants were debriefed (Appendix 10).

### *6.2.4. Statistical Analysis*

Analyses were conducted using both IBM SPSS version 22 and the lavaan package in R (Rosseel, 2012). Hypothesis 1 predicted that the items in the ESA scale would form three subscales related to the three themes derived from the interview accounts in Study 2: dominance, normalisation and the nature of sibling aggression. To explore this statistically, a confirmatory factor analysis was used to establish and

refine model fit. Specifically, model fit was measured through inspection of the comparative fit index (CFI), Chi-Squared statistic ( $\chi^2$ ), non-normed fit index (NNFI) and Root Mean Square of Error (RMSEA).

Hypothesis 2 predicted that the ESA scale would be related to the BSQ (Graham-Bermann & Cutler, 1994), demonstrating the concurrent validity of the measure. This was analysed statistically using Pearson's bivariate correlations between the continuous subscales of the BSQ (Graham-Bermann & Cutler, 1994) and the continuous subscales of the ESA scale.

Hypothesis 3 predicted that the subscales of the ESA scale would be able to predict sibling aggression. To explore this statistically, a binomial logistic regression was conducted on the data. As the participants could be identified as both a victim and perpetrator of sibling aggression, a variable was created that measured experience on four levels: (1) no aggression, (2) victim only, (3) perpetrator only and (4) mutual victim and perpetrator. As the number of participants that had experience of being only a victim or only a perpetrator of sibling aggression were low (33 and 15 respectively), they were not included in the regression analysis. This follows the recommendations of Peduzzi, Concato, Kemper, Holford and Feinstein (1996) who proposed that there should be at least 10 participants per predictor variable in each group. Therefore, the criterion variable was experience of sibling aggression, measured on two levels which were no aggression or mutual victimisation and perpetration. The predictor variables in this analysis were the continuous subscales of the ESA scale.

Finally, it was hypothesised that participants would have significant differences in their scores on the subscales of the ESA scale, dependent on their experience of sibling aggression. A MANOVA was conducted to explore this

statistically. The independent variable was the individual's status of sibling aggression. This was measured on four levels; (1) no aggression, (2) victim only, (3) perpetrator only and (4) mutual victim/perpetrator. All four groups entered the MANOVA. This statistical test can deal with small group sizes. The rule within MANOVA is that the number of participants should be more than the number of dependent variables (Tabachnick & Fidell, 2012). In this case, there would need to be a minimum of five participants per group. The continuous individual subscale scores from the ESA scale were the dependent variables. As the analysis was concerned with differences between groups, MANOVA was deemed most appropriate to explore this hypothesis, in line with the recommendations of Field (2009).

### 6.3. Results

#### *6.3.1. Data Screening*

The data were screened for missing values. As the questionnaire booklet was long, there were missing values on every variable for the data set (with the highest being 7.9% of the dataset). For inclusion in the dataset, participants had to have completed at least one measure in the questionnaire set.

To identify the cases as missing in SPSS, the number -99 was entered so that they would not be considered in any analyses. A frequencies analysis also identified that there were no data entry errors within the data.

To deal with the missing values, mean substitution was used. This was completed separately for each subscale in the questionnaires on a case-by-case basis so that the mean score for each participant was retained, thus ensuring the variability

in the data remained. For the ESA scale, these were replaced after a factor analysis on the data was conducted to allow the mean of the subscale for each participant to be inputted into the data file. In cases where the participant had not completed a specific measure, the missing data were not replaced and they were excluded from analyses using those particular measures.

The data was also inspected to see if there were any outliers present. Examination of the box plots for each variable identified several outliers. To deal with these, the process of replacing the most extreme scores with the next highest (or lowest) score in the distribution plus (or minus) one was used. In cases where the outlying score was very close in range to the other scores in the distribution, to the extent that this process would still result in an outlying case, the outliers were changed to the next most extreme score within the data.

After the outliers were replaced, the skewness and kurtosis were inspected for each variable, alongside the Shapiro-Wilk's tests, to see if the data were normally distributed. Throughout the dataset, values largely ranged between -1 and 1. Also, the Shapiro-Wilk's tests of normality were significant for every variable, which meant rejecting the null hypothesis that the data were normally distributed. This means that care should be taken when interpreting these tests. However, normality tests are sensitive and easily influenced by sample size, so when small deviations are present in the data, the null hypothesis is rejected (Tabachnick & Fidell, 2012). Box plots and Q-Q plots were also conducted and this identified that although there were skewness and kurtosis within the data, this did not result in high deviations from normality.

6.3.2. *Hypothesis 1: The items in the ESA scale would form a number of subscales that link to the three themes derived from the interview accounts in Study 2.*

There were 67 items in the questionnaire. Inspection of the skewness and kurtosis were completed in Section 6.3.1, and none of the items had values +/- 2. The item pool was also inspected for inter-item correlations. These revealed that items 9, 18, 20, 23 and 26 had no inter-item bivariate correlations above 0.27 ( $r = 0.14$  to  $0.27$ ) with any questionnaire item and so were excluded from further analyses as they did not appear to measure sibling aggression (as per the recommendations of Tabachnick & Fidell, 2012). No items were highly correlated with one another ( $>.80$ ) suggesting that the items were parsimonious, with a low risk of multi-collinearity.

For the remaining items in the scale (62 items following the exclusion of items 9, 18, 20, 23 and 26), the Cronbach's alpha score was 0.95 for the data from 258 participants without missing data on any of the questionnaire items. Following the thematic analysis themes in Chapter 5, a five-factor model was proposed (play fighting, sibling aggression, participant dominance maintenance, sibling dominance maintenance and normalisation of sibling aggression). This was assessed using confirmatory factor analysis.

#### Confirmatory Factor Analysis

In total, five models (see Table 6.2) were tested in terms of their model fit with the data in the sample. Participants with missing data were omitted from the analysis. All analyses were completed using the lavaan package in R (Rosseel, 2012).

*Table 6.2.*

Model fit of each of the models tested in the confirmatory factor analysis.

	<b>No. of items</b>	$\chi^2$	<i>df</i>	<b>CFI</b>	<b>RMSEA</b>	<b>NNFI</b>
<u>Model 1:</u> One factor with all items	62	6434.47***	1829	.46	.09	.44
<u>Model 2:</u> Theoretical 6 subscales; play fighting, sibling aggression, participant dominance, sibling dominance, normalisation, parental responses	62	5455.41***	1814	.57	.09	.56
<u>Model 3:</u> Theoretical 5 subscales (items about sibling opinions removed): play fighting, sibling aggression, participant dominance, normalisation, parental responses	40	2110.15***	730	.70	.09	.68
<u>Model 4:</u> Theoretical 4 subscales (parental responses scale collapsed): play fighting, sibling aggression, participant dominance, normalisation	37	1805.34***	623	.72	.09	.70
<u>Model 5:</u> Theoretical 4 subscales (refined): play fighting, sibling aggression, participant dominance, normalisation	24	327.94***	234	.96	.04	.95

Note: \*\*\* =  $p < .001$ . CFI = comparative fit index, RMSEA = root mean square of error, NNFI = non-normed fit index

The fit of each model was assessed by inspection of goodness of fit indices. The comparative fit index (CFI), Chi-Squared statistic ( $\chi^2$ ), non-normed fit index (NNFI) and Root Mean Square of Error (RMSEA) were used to assess model fit (see Table 6.2). Hu and Bentler (1999) proposed several criteria to establish a good fitting model, which were adopted in this thesis. More specifically, adequate fit required a CFI value higher than .95, an NNFI value greater than .90 and a RMSEA value of less than .08 (Hu & Bentler, 1999).

Given the high Cronbach's alpha score (.95) of all items in the questionnaire, the first model consisted of one factor onto which all 62 items were loaded. This revealed an inadequate fit ( $\chi^2$  (1829) = 6434.47,  $p < .001$ , CFI = .46, NNFI = .44, RMSEA = .09). Following this, the second model contained six subscales that were reflective of the themes/subthemes identified from the thematic analysis reported in Section 5.3 of the thesis. Although improved from model one, an inadequate fit was again revealed ( $\chi^2$  (1814) = 5455.41,  $p < .001$ , CFI = .57, NNFI = .56, RMSEA = .09). Upon inspection of the theoretical model used, it was thought that participants giving proxy data about their siblings (Where participants rate the behaviours of another person, e.g. 'My sibling did anything they could to get me into trouble') may affect the quality of the model. The use of proxy data is often debated within the literature (e.g. Tagiyeva et al., 2011). For this reason, model three contained five factors (see Table 6.2) with all items assessing for views on siblings removed. The model fit was improved, but again was still inadequate ( $\chi^2$  (730) = 2110.15,  $p < .001$ , CFI = .70, NNFI = .68, RMSEA = .09).

Following this, modification indices were inspected to see whether any of the items loaded onto multiple factors and to try and develop a stronger, more parsimonious model (Tabachnick & Fidell, 2012). This revealed that three of the

items on the parental responses scale loaded onto the normalisation factor. These were moved accordingly. As this left three items on the parental response factor, these were removed from the model and a four-factor model was assessed for model fit. This revealed an improved model fit, but this was still inadequate ( $\chi^2(623) = 1805.34, p < .001, CFI = .72, NNFI = .70, RMSEA = .09$ ). Following this improvement in model fit, modification indices were again inspected. This revealed that several items were loading onto multiple factors. These were removed from the model. Similarly, items with high modification indices, that loaded on the same factor, and were theoretically justifiable, were co-varied. If these were not theoretically justifiable, they were not allowed to co-vary. This model revealed an acceptable model fit ( $\chi^2(234) = 327.94, p < .001, CFI = .96, NNFI = .95, RMSEA = .04$ ). For all models, factors could co-vary. Model 5 was therefore selected as the final model for the experiences of sibling aggression scale. The items in the final model are shown in Table 6.3.

*Table 6.3*

Factor loadings for each item for the subscales of the ESA scale.

	<b>Factor loading</b>
<b>Play fighting (5 items)</b>	
I engaged in physical play fighting with my sibling	.76
I enjoyed verbally play fighting with my sibling	.63
I enjoyed physically play fighting with my sibling	.59
I engaged in verbal play fighting with my sibling	.59
Play fighting is different to real fighting	.47
<b>Sibling aggression (6 items)</b>	
It was quicker to fight over something than to talk about it with my sibling	.73
Real fighting with my sibling only happened when we were frustrated	.66
Real fighting with my sibling was to solve an argument	.66
I only fought with my sibling when I was angry with them	.58
My parents didn't always know that I fought with my sibling	.54
My sibling and I fought with each other outside the home	.42
<b>Normalisation (5 items)</b>	
It is normal to fight with your sibling	.83
All brothers and sisters fight with each other	.66
My parents thought that fighting with my sibling was normal	.43
My parents fought with their own sibling when they were kids	.40
I protected my sibling when we were at home or with friends	.35
<b>Participant dominance (8 items)</b>	
I did anything I could to get my sibling into trouble	.81
I fought with my sibling to get what I wanted	.80
I told on my sibling to my parents to get what I wanted	.75
I did anything I could to get my own way in a disagreement with my sibling	.75
I got what I wanted when I fought with my sibling	.67
I used to cry to get my sibling told off	.65
As we grew up I started the majority of fights with my sibling	.60
My parents always took my side when my sibling and I were getting told off	.40

The reliability and validity statistics for the final model were also inspected (Table 6.4). Convergent validity was checked by examining the Average Variance Explained (AVE). The AVE shows the extent to which the individual items on the questionnaire represent the overall subscale, with values that ideally exceed .50 (Hair, Black, Babin, Anderson & Tatham, 2006). The construct reliability was also inspected. This value shows both the internal consistency and reliability of the subscale, ideally exceeding .70 (Hair, 2006). Table 6.4 showed a high level of reliability and validity for the ESA scale as the AVE and construct reliability statistics for the final model exceeded their desired values.

*Table 6.4*

CFA reliability and validity statistics for the four subscales of ESA scale.

<b>Subscale</b>	<b>Construct reliability</b>	<b>AVE</b>
1. Play fighting	.89	.63
2. Sibling aggression	.94	.74
3. Normalisation	.83	.52
4. Participant dominance	.99	.90

Note: The values in this table were calculated using the unstandardized coefficients.

*6.3.3. Hypothesis 2: The ESA scale will be related to the BSQ (Graham-Bermann & Cutler, 1994).*

As the confirmatory factor analysis established that there were 4 subscales of the ESA, the concurrent validity of the measure compared to the BSQ was explored. This was done by examining the Pearson's correlations between each of the subscales from both measures (see Table 6.5).

*Table 6.5*

Pearson's correlation coefficients for the subscales of the ESA and the BSQ

	<b>ESA: Play fighting</b>	<b>ESA: Sibling Aggression</b>	<b>ESA: Normalisation</b>	<b>ESA: Participant dominance</b>
<b>BSQ: Empathy</b>	-.035	-.365***	.042	-.095
<b>BSQ: Boundary Maintenance</b>	-.096	-.280***	-.077	-.204***
<b>BSQ: Similarity</b>	.150**	.005	.199***	.142*
<b>BSQ: Coercion</b>	.198***	.443***	.130*	.207***

Note: \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$ .

Although many of the correlations were significant between the BSQ and ESA subscales, this was not the case for all subscales. Specifically, the empathy subscale from the BSQ was not significantly correlated with the play fighting ( $r = -.04$ ,  $p = .540$ ), normalisation ( $r = .04$ ,  $p = .463$ ) and participant dominance ( $r = -.05$ ,  $p = .093$ ) subscales of the ESA scale. Similarly, the BSQ boundary maintenance subscale was not significantly associated with play fighting ( $r = -.09$ ,  $p = .088$ ), and normalisation ( $r = -.08$ ,  $p = .177$ ) subscales of the ESA scale. Finally, there was a non-significant relationship between similarity on the BSQ and sibling aggression on the ESA scale ( $r = .01$ ,  $p = .927$ ).

These associations were somewhat expected as both questionnaires were measuring sibling aggression. However, the non-significant findings show that the ESA measures different aspects that are not measured by the BSQ.

#### *6.3.4. Hypothesis 3: The subscales of the ESA scale would be able to predict sibling aggression*

As the aim of this study was to develop a valid and reliable measure of sibling aggression, it was hypothesised that the responses from the ESA scale would

be able to predict being a victim and/or perpetrator of sibling aggression. To do this, a binary logistic regression was conducted. As discussed in Section 6.2.4, the analysis focused only on the ability to predict no sibling aggression or mutual victimisation and perpetration due to low numbers of participants in who were sole victims or perpetrators. Prior to the binary logistic regression, the correlations, means and standard deviations of the ESA scale variables and either being a mutual victim and perpetrator of sibling aggression were inspected. These are shown in Table 6.6.

*Table 6.6*

Pearson's bivariate correlations between the predictor and outcome variables

	<i>N</i>	<i>M</i>	<i>SD</i>	<b>ESA Scale: Play Fighting</b>	<b>ESA Scale: Sibling Aggression</b>	<b>ESA Scale: Normalisation</b>	<b>ESA Scale: Participant Dominance</b>
ESA scale: Play fighting	321	13.82	3.94				
ESA scale: Sibling aggression	317	11.43	4.43	.42***			
ESA Scale: Normalisation	312	14.83	4.32	.61***	.37***		
ESA Scale: Participant Dominance	318	16.68	6.09	.49***	.57***	.48***	
Sibling aggression status (mutual/no experience)	276	.58	.49	.31***	.39***	.34***	.31***

Note: \*\*\* =  $p < .001$

Inspection of Table 6.6 revealed that there were no correlations that exceeded .80, meaning that multicollinearity was not a problem in the sample (Field, 2009).

The logistic regression was then conducted to address the research hypotheses. The results of this test are shown in Table 6.7. For the regression model, the four subscales of the ESA scale served as the predictor variables with either being a mutual victim and perpetrator of sibling aggression as the dependent variables.

*Table 6.7*

Results of the binary logistic regression for the ESA to predict victims/perpetrators of sibling aggression.

Variables	B	Wald X <sup>2</sup>	p	Exp (B)	95% Confidence Interval for Exp (B)	
					Lower	Upper
Play fighting	.07	2.21	.137	1.07	.98	1.18
Sibling aggression	.17	13.75	<.001	1.18	1.08	1.29
Normalisation	.08	2.95	.086	1.08	.99	1.18
Participant dominance	.00	.02	.890	1.00	.94	1.07

Note: R<sup>2</sup> = .16 (Hosmer & Lemeshow), .20(Cox & Snell), .26 (Nagelkerke). Model X<sup>2</sup> (4) = 55.57, p<.001.

The full model significantly predicted mutual sibling aggression (omnibus chi-square = 55.57, df = 4, p < .001), accounting for between 16.0% and 26.3% of the variance. The model correctly predicted 80.1% of the participants who were mutual victims and perpetrators and 61.0% of those had no experience of sibling aggression. This resulted in 72.3% accurate predictions. The binary logistic regression revealed that the subscale that reliably predicted mutual victimisation and perpetration was sibling aggression, which was concerned with using aggression to manage negative emotions or resolve disagreements. A higher score on these subscales by one point was associated with an increase in the odds of victimisation by a factor of 1.18.

*6.3.5. Hypothesis 4: Participants would have significant differences in their scores on the subscales of the ESA scale, dependent on their experience of sibling aggression*

As four subscales were derived from the ESA scale and the questionnaire could predict whether a participant was a mutual perpetrator and victim of sibling

aggression, the differences between victims and/or perpetrators were compared further. As it is advised that within MANOVA, the number of participants should be more than the number of dependent variables, it can deal with small group sizes. (Tabachnick & Fidell, 2012). This allowed for the differences between mutual victims and perpetrators, perpetrators only, victims only and those with no experience of sibling aggression to be compared. The means and standard deviations of the scores on the ESA for perpetrators and/or victims are shown in Table 6.8.

*Table 6.8*

The means and standard deviations of the ESA subscale scores as a function of perpetration/victimisation of sibling aggression

Sibling aggression status	ESA Subscale (SD)			
	Play Fighting	Sibling Aggression	Normalisation	Participant dominance
No aggression (N = 105)	12.07 (4.06)	9.13 (3.78)	12.97 (4.42)	14.63 (5.41)
Victim Only (N = 32)	14.38 (3.77)	13.19 (4.63)	14.69 (4.06)	16.31 (6.91)
Perpetrator Only (N = 15)	14.80 (4.21)	10.93 (4.10)	15.00 (3.38)	16.67 (5.96)
Mutual victim & perpetrator (N = 151)	14.70 (3.54)	12.58 (4.11)	15.92 (3.94)	18.20 (5.90)
Total (N = 303)	13.76 (3.96)	11.37 (4.37)	14.72 (4.29)	16.69 (5.05)

To explore differences between participants who described themselves as victims, perpetrators or having no sibling aggression on the subscales of the ESA scale, a 2 x 2 two way MANOVA was conducted using the independent variable of sibling aggression status, which was measured on four levels (1) no aggression, (2) victim only, (3) perpetrator only, (4) mutual victim and perpetrator. The dependent variables were the ESA subscales; play fighting, sibling aggression, normalisation and participant dominance.

The MANOVA revealed a significant main effect of sibling aggression status on the ESA scale (Wilks  $\lambda = .79$ ,  $F(12, 4) = 6.04$ ,  $p = .001$ ,  $\text{Eta}^2 = .075$ ). The univariate main effects revealed that sibling aggression status had a significant effect on the play fighting ( $F(3, 299) = 10.75$ ,  $p < .001$ ,  $\text{Eta}^2 = .097$ ), sibling aggression ( $F(3, 299) = 17.29$ ,  $p < .001$ ,  $\text{Eta}^2 = .148$ ), normalisation ( $F(3, 299) = 10.70$ ,  $p < .001$ ,  $\text{Eta}^2 = .097$ ) and participant dominance ( $F(3, 299) = 7.73$ ,  $p = .001$ ,  $\text{Eta}^2 = .072$ ) subscales. Scheffe's post hoc tests (Table 6.9) indicated that there was a significant increase in the play and sibling aggression subscales for participants who were only victims and those who were mutual victims and perpetrators when compared to people who had no experience of sibling aggression. There was also a significant increase in the dominance and normalisation subscales for mutual victims and perpetrators when compared to participants who did not experience aggression from a sibling.

*Table 6.9*

The mean differences of the ESA subscales by the participant's status of sibling aggression.

Status of sibling aggression	Play Fighting				Sibling aggression				Participant Dominance				Normalisation			
	No aggression	Victim only	Perpetrator only	Mutual	No aggression	Victim only	Perpetrator only	Mutual	No aggression	Victim only	Perpetrator only	Mutual	No aggression	Victim only	Perpetrator only	Mutual
No aggression	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Victim only	2.30*	-	-	-	4.05***	-	-	-	1.68	-	-	-	1.68	-	-	-
Perpetrator only	2.73	.43	-	-	1.80	2.25	-	-	2.04	.35	-	-	2.04	.35	-	-
Mutual	2.63***	.33	.10	-	3.44***	.61	1.64	-	3.57***	1.89	1.53	-	3.57***	1.89	1.53	-

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

### *6.3.6. Summary of main findings*

Overall, the ESA scale was found to have four subscales, reflecting play fighting, sibling aggression, participant dominance and normalisation. This was found to have significant relationships with some subscales on the BSQ after using Pearson's correlations to explore the concurrent validity of this new measure. However, the ESA scale was not significantly associated with all the BSQ subscales. This was expected as although both were concerned with the measurement of sibling aggression, the ESA scale included different concepts of this topic.

The ability of the ESA scale to predict mutual sibling aggression was assessed using a binary logistic regression. These revealed that higher scores the sibling aggression subscale, reflecting that the use of physical aggression to deal with negative emotions or solve arguments, increased the odds of being a mutual victim and perpetrator of sibling aggression.

There were also differences between mean scores on each of the subscales of the ESA scale, with participants who identified themselves as only victims or as mutual victims and perpetrators having higher scores on the play and sibling aggression subscales compared to those who had not experienced sibling aggression. Furthermore, mutual victims and perpetrators also had higher scores on the participant dominance and normalisation subscales when compared to those without experience of sibling aggression.

#### 6.4. Discussion

The aim of this study was to develop and validate the ESA scale, a new measure of sibling aggression. Previous measures in this field focus only on the individual behavioural acts of aggression (e.g. CTS; Straus, 1979), neglecting contextual factors. Context is important to consider in this area of family violence as play fighting behaviours often include aggressive acts (Tannock, 2011). A failure to acknowledge these could unintentionally inflate prevalence figures, overestimating the prevalence of sibling aggression. The ESA scale is unique because it explores the differences between play fighting and sibling aggression. The separate subscales for these two behaviours show explore their functional and motivational differences. This supports the findings from Study 2 where play fighting was considered as a game like behaviour, whereas sibling aggression often occurred in response to dealing with negative emotions, overcoming verbal conflict or due to a lack of knowledge about alternative methods to resolve conflict with one another. Similarly, the validity of the measure was found to be good, with strong associations between the ESA scale and the BSQ (Graham-Bermann & Cutler, 1994), demonstrating that the two measures were targeting similar constructs of behaviour. Furthermore, the ESA scale was found to increase the likelihood of predicting mutual sibling aggression, with mutual victims and perpetrators scoring higher on the sibling aggression subscale when compared to a control group of people who did not define themselves as a victim or perpetrator of sibling aggression.

#### *6.4.1. The unique contribution of the findings to the research literature*

##### A new measure of sibling aggression

The ESA scale provided a unique contribution to the research literature. Developed from the accounts of participants in Study 2, this not only allowed the themes from qualitative accounts of sibling aggression to be tested on a larger scale but also revealed that play fighting, sibling aggression, normalisation and dominance were subscales that were important when looking at the context of the aggressive behaviours. There are two other measures of sibling aggression that do not assess this form of family violence by looking at specific behavioural acts: the BSQ (Graham-Burman & Cutler, 1994) and the SRQ (Furman & Buhrmester, 1985). However, these are either (1) narrowly based on aggression between siblings or (2) based upon existing research literature surrounding family systems, child development and family violence. The ESA scale expands on these by being solely focused on sibling aggression throughout and the basis of the items on the scale come directly from accounts of victims and/or perpetrators. Further research should aim to validate the ESA scale alongside act based measures of this form of family violence, in a variety of different samples (e.g. children and young adults) to see if together, they can distinguish between play and sibling aggression.

##### Sibling aggression and play fighting as separate behavioural constructs

It could be argued that if play fighting and sibling aggression are two different behavioural constructs, they should not be significantly associated with one another. Play fighting however, was significantly associated with every subscale on the ESA scale (sibling aggression, normalisation and participant dominance) and experience

of sibling aggression (as a mutual victim/perpetrator or no experience of sibling aggression). Each of these will be discussed, along with their relationship to the BSQ (Graham-Bermann & Cutler, 1994).

The play fighting subscale of the ESA scale explained approximately 16% of the variance in participant's scores on the sibling aggression subscale and vice versa. This can be somewhat explained by the inclusion of participants that engaged in mutual sibling aggression within the analysis. Play fighting is perceived as an enjoyable, game like behaviour for children (Hart & Tannock, 2013). However, these behaviours have the potential to escalate into aggression. In Study 2, participants discussed how play fighting was governed by boundaries and rules and when these are crossed, the behaviours became aggressive (see Section 5.3.1). The significant association could reflect participants who engaged in play fighting, and enjoyed doing so, with a proportion of their aggression explained by the escalation of otherwise playful behaviours. Therefore, although play fighting and sibling aggression are argued as being two different behavioural constructs throughout this thesis, there is a relationship between them. This also links to the association with sibling aggression status, in that having experience of mutual sibling aggression may have been associated with higher scores on the play fighting subscale for similar reasons. The higher numbers of these individuals within the sample, combined with the propensity for play fighting to escalate to sibling aggression may have an impact on this association.

When comparing play fighting to the normalisation and participant dominance subscales of the ESA scale, significant associations were again found. These were not expected given that they were developed to aid the distinction between play and sibling aggression. When looking at the subscale that represented participant

dominance, the strength of the association with the sibling aggression and play fighting subscales was very similar. As the questions around dominance did not specifically ask about aggressive behaviours used to maintain dominance, those participants who engaged in play fighting behaviours may have been using prosocial alternatives to aggression. This combined with the ability for levels of dominance or power to interchange between siblings (Tippett & Wolke, 2015), could explain the similar association with both scales. Interestingly, the association of normalisation was stronger with the play fighting subscale than the sibling aggression subscale<sup>2</sup>. As experience of sibling aggression has been linked to attitudes that condone or accept the behaviours (Reese-Weber, 2008), this association was not expected. Upon inspection of the items that make up this subscale, they did not ask participants about acceptance of play fighting and aggression. This might have been ambiguous for participants and they may have reported on the acceptance of play fighting behaviours within the family environment. There is therefore a need for future research to compare the normalisation of play fighting with sibling aggression. Doing so will allow for refinement of the ESA scale and provide an interesting insight into the role of normalisation for both behaviours.

Differences between the play fighting and sibling aggression subscales of the ESA scale can be observed further when they are compared to the BSQ (Graham-Bermann & Cutler, 1994). These showed that the sibling aggression subscale was significantly associated with lower levels of empathy, lower levels of boundary maintenance and higher levels of coercion. The play fighting subscale, in comparison, was associated with higher levels of similarity and coercion. These

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<sup>2</sup> This difference was shown to be significant using *cocor* (comparing correlations) package in R statistics (Diedenhofen & Musch, 2015).

findings help to demonstrate the concurrent validity of the ESA scale. For example, Decety (2010) argues that empathy is made up of three components; affective arousal, emotional understanding and emotional regulation. If there is a deficit or an individual has difficulties in one of these areas, such as emotional understanding, it will have an impact in the other areas, such as affective arousal and emotional regulation. This combined with the evidence from the interview accounts in Study 2, and research from Bell and Naugle (2008) that has identified that difficulties in regulating emotions have been linked to the use of maladaptive behaviours, which include aggression would lead to the expectation that sibling aggression would be associated with lower levels of empathy.

The boundary maintenance subscale of the BSQ is described by Graham-Bermann and Cutler (1994) as relating to individuals having their boundaries respected by their sibling. Participants who scored highly on the sibling aggression subscale had lower levels of boundary maintenance, meaning that they failed to maintain boundaries. Kiselica and Morrill-Richards (2007) proposed that in the aggressive sibling relationship, boundaries could either involve very little personal space between family members, so when children make a mistake they will become a target for aggression, or parents will not instil boundaries in their children, providing them with little supervision and boundaries are crossed as a method of dealing with conflict. Therefore, the link between the sibling aggression and boundary maintenance subscales could reflect these ideas.

The play fighting subscale of the ESA scale was associated with higher scores on the similarity subscale of the BSQ (Graham-Bermann & Cutler, 1994). As play fighting is often used with friends as well as family members, this association was somewhat expected. Previous research within this area has shown that play fighting

is used to maintain friendships and is an enjoyable experience for children (Smith & Pellegrini, 2008). Children have also been shown to engage with peers who are similar to themselves in terms of the behaviours they engage in, which in this case would include play fighting (Poulin, Cillessen, Hubbard, Coie, Dodge & Schwartz, 1997). Therefore, the significant association between play fighting and similarity reflects the previous research within this field, showing play fighting as a positive behaviour for children to engage in.

Coercion was the only subscale that was significantly associated with both the play fighting and sibling aggression subscales of the ESA scale. However, this association was stronger for sibling aggression than play fighting<sup>3</sup>. This was somewhat expected given the recognised role of coercion within the IPV research literature (Dutton, 2009). When applied to siblings, Stormshak, Bullock and Falkenstein (2009) suggested that if children grow up in an environment where their aggressive behaviours are accepted within the family, with a lack of parental intervention, coercion may be used to resolve situations of conflict. Therefore, coercion may play a significant role in the experience of sibling aggression. Each of the associations between the ESA scale and the BSQ (Graham-Bermann & Cutler, 1994) show that there are differences between the play fighting and sibling aggression subscales. This highlights the need for the behaviours to be recognised as such. By including separate subscales for these within the ESA scale, research using this tool will be able to gain a greater level of insight into the motivation of the behaviours rather than only looking at the individual aggressive acts.

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<sup>3</sup> This difference was shown to be significant using the *cocor* (comparing correlations) package in R statistics (Diedenhofen & Musch, 2015).

## Differences between victims, perpetrators and those with no experience of sibling aggression

Both groups of mutual victims and perpetrators and those who were only victims of sibling aggression reported higher scores on the sibling aggression subscale of the ESA scale. This subscale was concerned with the use of aggression to deal with negative emotions and solve disagreements when presented with a situation of conflict. This builds upon the literature such as that from Mathis and Mueller (2015) who found that emotional problems in adulthood of participants who had experienced aggression from their sibling in childhood. The findings from Study 3 suggest that both victims and mutual victims/perpetrators of sibling aggression dealt with negative emotions using aggressive behaviours. Interestingly, this was not found for the perpetrators of sibling aggression only group. As perpetrators were the only group of participants who were engaged in aggression but did not experience the behaviours at the hands of their sibling, it could be said that victimisation could lead to fear and hurt in children. Therefore, their use of aggression towards a sibling could stem from the negative emotions that they feel (e.g. upset, frustration). Future research in this area could explore the role of emotion in aggression among siblings in further detail to see if problems with negative affect make an individual more or less vulnerable to sibling aggression.

Dominance was shown to be an important factor for mutual sibling aggression. This is somewhat unexpected, as per RHP (Parker, 1974) and the principles of social dominance, there is usually one person within a group that carries this higher status of dominance. As it can be assumed that the participants in this group also had a sibling that was mutually aggressive with themselves, it implies that the dominance hierarchy within these sibling groups was not stable. This is supported by Tippett

and Wolke (2015) who have suggested that the amount of time spent together creates a situation where power can change from one sibling to the other. This could be reflected in sibling aggression as many children have been found engage in mutual sibling aggression with one another (e.g. Duncan, 1999). The dominance hierarchy that exists could therefore be interchanging within the sibling relationship.

#### *6.4.2. Limitations*

There are a number of limitations with this research. As some of the items on the normalisation and participant dominance subscales of the ESA scale did not specifically ask participants to distinguish between play fighting and aggression, they are associated with their respective subscales. Future research should test this further, specifically asking participants to distinguish between the two behaviours.

Secondly, as this study involved only one member of a sibling group, it was not possible to explore group processes that occur particularly around dominance and parental attention seeking behaviours. For future research, exploring the experiences of sibling dyads or groups would enable these factors to be explored.

A third limitation arises due to the age range of participants included in the sample. The nature of this study was to explore how adults retrospectively perceived their experiences of sibling aggression. It is important to explore whether this ESA scale can be applied to children who could be experience sibling aggression. Future research should seek to use the ESA scale with younger samples, to see if it can still distinguish between play fighting and sibling aggression and whether the subscales are relevant to a younger age range.

### *6.4.3. Implications*

The findings of Study 3 have implications for both academics and researchers. These are specifically concerned with distinguishing between play fighting and sibling aggression by taking the context and intention of the behaviours into account. As current measures, such as the CTS (Straus, 1979), JVQ (Hamby et al., 2004) and PRQ (Rigby & Slee, 1993), focus on specific aggressive behaviours, the ESA scale can be used in conjunction so that the distinction between play and sibling aggression can be explored and prevalence rates are not inflated.

### *6.4.4. Conclusions*

Overall, this chapter provides preliminary data on a measure of sibling aggression based on interview accounts from victims and/or perpetrators of the behaviours. This measure provides the opportunity to explore the experience of sibling aggression in greater detail, distinguishing between play and real aggression in terms of the functions and motivations that they serve. Furthermore, this chapter has highlighted the differences between victims and perpetrators of sibling aggression, which is a unique contribution to the research literature. Future research should look to explore these differences in a variety of samples to see if the questions, informed by a sample of participants from the UK, can be applied further.

## **Chapter 7**

### **General Discussion of Findings**

The final chapter of the thesis will present a discussion of the combined findings from the exploration of the NFVS (Straus et al., 1980), the in-depth accounts of sibling aggression and the development of the ESA scale. The unique contribution to the research literature on sibling aggression will be identified as well as the implications of the findings regarding existing research and theories and lastly, a discussion of the implications and directions for future research.

#### **7.1. Summary of the main findings**

The aim of the thesis was to explore the experience of sibling aggression. The three studies described throughout have demonstrated that aggression between siblings is a serious form of family violence, with multiple functions and motivations. These motivations included; overcoming negative emotions, gaining control of resources and resolving arguments that cannot be settled verbally. However, the quantitative measures currently used to estimate prevalence rates should aim to distinguish between play fighting and sibling aggression so that rates are not conflated by combining the two different behavioural constructs. The high prevalence rates identified in the existent research literature using questionnaires (e.g. Reese-Weber, 2008; Roscoe et al., 1987; Straus et al., 1980) suggest that not all aggressive acts between siblings have harmful or fearful intent towards the victim. Through interviews with victims and perpetrators of sibling aggression, a quantitative measure was developed to help explore the dynamics of this form of family violence. This was a unique contribution to the research literature. The ESA

scale investigated the context of the behaviours, in addition to the factors that aid the distinction between play fighting and sibling aggression, offering a unique contribution to the research literature.

The thesis was unique in the way that it examined the key differences between sibling aggression and play fighting. Emotions, solving disagreements and age were key in distinguishing between play and aggression between siblings. The role of emotion in perpetrating sibling aggression has suggested that this form of family violence is more likely to occur where there is unregulated emotion (e.g. reactive aggression), suggesting a clear motivation for the behaviours, which goes beyond merely counting individual acts of aggression. Similarly, the parents' role, with their attention sought more in incidents of sibling aggression than play fighting, as well the way they intervened, appeared to be an important factor in the normalisation of these behaviours. Status of dominance was also important in whether children chose to use aggression towards one another, with perpetrators having a higher status of dominance and victims having a lower one. This suggested that dominance was maintained using aggressive behaviours, with fear from a sibling also contributing to this.

Finally, the thesis highlighted the seriousness of sibling aggression. By exploring how multiple forms of family violence contributed to the frequency of aggression used by siblings as a conflict resolution strategy, alongside the views of victims and perpetrators, the thesis conveyed how important it is for this form of aggression to be perceived as problematic in society.

## 7.2. The unique contribution of the findings to the research literature

The findings from this thesis provided greater insight into the experience of sibling aggression. Two overarching conclusions were revealed in relation to sibling aggression: (1) the importance of considering the context of aggressive behaviours between siblings and (2) normalisation of the behaviours is a barrier to perceiving sibling aggression as a form of family violence. These will each be discussed in turn.

### *7.2.1. The importance of considering the context of aggressive behaviours between siblings*

One of the most important findings revealed throughout each study that made up this thesis concerned the need to consider the context of the behaviours that characterise sibling aggression rather than the individual aggressive acts. There appears to be some disparity between the current societal views of these behaviours and those which are reflected in the research literature. On the one hand, society views aggression between siblings to be acceptable (Khan & Rogers, 2015). On the other hand, the academic research literature has shown that it has various negative consequences on those involved, including an increased involvement in delinquent behaviours outside the home (Button & Gealt, 2010; Garcia et al., 2000; Stocker et al., 2002) and a greater likelihood of developing of anxiety and depression (Buist & Vermande, 2014; Buist et al., 2014). Throughout the thesis, particularly in study 2, it was highlighted that play fighting and sibling aggression are two different behaviours, with differing functions and motivations. However, their behavioural acts look very similar to one another (see Section 1.1.2. for a description of the behavioural acts). Play fighting however, is an enjoyable and developmentally beneficial behaviour for children to engage in (Hart & Tannock, 2013; Smith &

Pellegrini, 2008). This was reflected in the findings from Study 2 that found play fighting to be a game like behaviour, governed by certain rules and boundaries. Similarly, when tested on a larger scale (Study 3), play fighting was experienced by victims, perpetrators and those who had no experience of aggression from a sibling. Sibling aggression, on the other hand, was described as a method to deal with negative emotions, a behaviour that is used to maintain dominance and the way that children learn to deal with conflict when they do not know the prosocial alternatives to aggression. This shows that although their behavioural acts may be the same, the function and intent behind play fighting is different to sibling aggression.

When sibling aggression is measured, it is frequently done by using self-report, questionnaire methods, such as the CTS (Straus, 1979), which look only at the behavioural acts of aggression (e.g. Ketterly & Emery, 2006; Mackey et al., 2010; Straus et al., 1980). This focus does not provide an understanding of why the behaviours were used. Although this criticism of the CTS is not a new finding and Straus (1990) has proposed that additional measures are used alongside the CTS to get a stronger idea about context, it becomes especially important when trying to distinguish between play fighting and sibling aggression as prevalence rates may unintentionally capture both behaviours. Similar arguments have been put forward in the IPV literature. This area of research has been moving towards a contextual approach towards this form of family violence for several years (e.g. Bell & Naugle, 2008; Winstok, 2013), with contextual factors also being considered important in the identification of co-occurring family violence (Dixon & Graham-Kevan, 2011). Winstok (2013) stresses the importance of gathering information about the dynamics of aggressive behaviours. Act based measures of IPV neglect to do this, resulting in a lack of knowledge surrounding the intention of the behaviours (Winstok, 2013).

Although the behaviours may look the same, the experience of aggression may vary for different groups of people (e.g. men and women; McHugh, Livingston & Ford, 2005). This can apply to the different contexts between play fighting and sibling aggression. Although the behaviours look like one another from the outside, the findings from Study 2 revealed that they have different functions and motivations. From this, it can be implied that the experience of sibling aggression is very different to that of play fighting. Like the functions of sibling aggression, revealed from this thesis, Bell and Naugle (2008) propose that coping, emotional regulation and conflict resolution skills form part of an individual's behavioural repertoire. Problems in these areas can result in the use of maladaptive behaviours, which include physical aggression (Bell & Naugle, 2008). This stresses the importance of conceptualising sibling aggression as a form of family violence. Addressing the problems with aggression in childhood could aid the reduction of conflict exhibited in adult relationships.

If the research literature neglects to explore the differences between play fighting and sibling aggression, it could have several implications for the findings ascertained. For example, current prevalence rates of this form of family violence are often very high. If play fighting is removed from this, they may become much lower. This could help to both increase the recognition of these behaviours as a form of family violence and target interventions. To overcome this issue, Study 3 involved the development of the ESA scale. This provided a unique contribution to the research literature as it is one of the only measures of this form of family violence to look at the context of the behaviours rather than the individual aggressive acts. Future research should therefore aim to use this to gain further insight into this form of family violence.

*7.2.2. Normalisation of the behaviours is a barrier to perceiving sibling aggression as a form of family violence.*

The normalisation of sibling aggression was reflected throughout the thesis. Within the existing research literature, it has been shown that normalisation is present in the views of those directly involved, parents and society (e.g. Caspi, 2012; Harris, 1991; Khan & Rogers, 2015). Similar views were reflected in every study of the thesis, demonstrating that this is a problem in terms of perceiving sibling aggression as a form of family violence by those directly involved. More specifically, normalisation was reflected in the perceived way that parents intervened in aggression, the endorsement of general norms around sibling aggression or gender role stereotypes to justify the behaviours and the rate at which sibling aggression increased when other forms of family violence were present in the home environment. If sibling aggression is to be perceived as a form of family violence, like child abuse and IPV for example, then these barriers need to be overcome.

The normalisation of sibling aggression can be compared to the early work in IPV. Up until the 1970s, violence in the home was perceived to be a private matter and was not commonly discussed, with the police and judges neglecting involvement in incidents (Dutton, 2006). This was also reflected in the support that was available for victims, with the first women's shelter being opened in 1971, which was classed as one of the first steps in highlighting the problem of IPV (Dutton, 2006). It could be said that sibling aggression is in a similar state today. In 1977(b), Steinmetz suggested that sibling aggression was an important factor in understanding the cycle of violence. An acceptance for the normality of these behaviours is said to reinforce the use of aggression to resolve a situation of conflict, providing children with an early opportunity to use the behaviours that they have both observed and

experienced (Steinmetz, 1977b). The current laws surrounding domestic violence in the UK do not identify aggression as such until the age of 16 years old (Woodhouse & Dempsey, 2016). This means that there are many victims and perpetrators of sibling aggression that go unrecognised within society.

This thesis demonstrated that those children who engage in sibling aggression hold norms that condone the behaviours. Given the association that sibling aggression has with the later use of aggressive behaviours in intimate relationships (Stocker et al., 2002), it becomes important to address them so children know they are not acceptable to resolve conflict in adulthood. It could be proposed that interventions need to be targeted at a family level to help to reduce the familial culture where sibling aggression is accepted or even expected from some children (e.g. Skinner & Kowalski, 2013). Parents for example, are instrumental in showing children alternatives to aggressive behaviour. This could be through the way that they intervene or in the behaviours that they themselves demonstrate as a method of conflict resolution. In their exploration of interventions for sibling aggression, Tucker and Finkelhor (2015) found that although limited in the number of programmes designed to target this form of family violence, many take a whole family approach. Not only do they improve parenting practices, but also lead to improvements in the quality of family life and social and emotional development among children (Tucker & Finkelhor, 2015). Such promising findings from family focused interventions suggest that children could learn prosocial alternatives to their aggression through the methods employed. Given the association between sibling aggression and later aggression in intimate relationships (Calderia & Woodin, 2012; Noland et al., 2004) it is especially important to target the norms and stereotypes that children have at a young age.

### 7.3. The theoretical application of the research findings

A theoretical framework was proposed in Section 1.3 of the thesis to explain why siblings engaged in aggressive behaviours with one another. The framework included social learning theory (Bandura et al., 1961), social dominance (e.g. Hawley, 2002) and RHP (Parker, 1974). Each of these theoretical explanations, when utilised as frameworks through which to explore the findings from the respective studies in this thesis, can aid understanding into this form of family violence.

Firstly, the strong presence of dominance helps to explain why siblings are engaging in aggressive behaviours with one another. Study 2 demonstrated that siblings often engage in aggression to get something that they wanted, using indicators of RHP (Parker, 1974) to decide whether to do so. If the indicators of RHP (Parker, 1974) changed throughout the course of childhood (i.e. a younger sibling becomes taller and stronger than themselves), the sibling with a reduced level of RHP involved parents to gain support and exert dominance. This was reinforced in Study 3 in the higher levels of perceived dominance of those who engaged in mutual sibling aggression. This shows that the aggressive behaviours that participants engaged in had a clear function. The intent to be aggressive was present but this was in relation to gaining something that the participant wanted, whether this was to settle a verbal dispute or gain control of a possession. This can be compared to play fighting, which was enjoyable for participants, but governed by rules and boundaries. Therefore, one of the clear functions of aggression between siblings is dominance and indicators of RHP (Parker, 1974) will affect the likelihood of individuals engaging in such behaviours.

Social learning theory (Bandura et al., 1961) was reflected by the increased frequency of sibling aggression in families with more forms of co-occurring family violence and the increased levels of normalisation of sibling aggression for mutual perpetrators/victims of this form of family violence. Both findings suggest that exposure to norms that endorse aggression to resolve conflict may lead to perceptions that the behaviours are acceptable. These norms are portrayed either by (1) having an environment where many family members use aggressive behaviours with one another or (2) being surrounded by norms that endorse aggression between siblings. These experiences can leave people with cognitive schemas that endorse such behaviours. If children are exposed to norms in either way, it could mean that the likelihood of adopting and using prosocial strategies to deal with aggression is reduced.

Overall, the findings demonstrated from all the studies within this thesis show that sibling aggression has a clear function. In line with the principles of social dominance theory, this function is to maintain a status of dominance, whether this is concerned with winning an argument or overcoming negative emotions. With this, there is clear intent to carry out the aggressive behaviours. Secondly, the likelihood of engaging in aggression with a sibling is influenced by indicators of RHP (Parker, 1974), but these can change throughout the course of childhood. Finally, in line with social learning theory (Bandura et al., 1961) the way that children learn the behaviours and the way their aggression is reinforced in the home environment points to the development of cognitive schemas endorsing such methods of conflict resolution.

#### 7.4. Strengths, limitations and future directions of the thesis

The main strength of this thesis was the contribution that it made to the existing sibling aggression research. At present, the literature has looked at predictors, effects, perceptions and prevalence of this form of family violence, with much of the focus on quantitative measures. By interviewing perpetrators and victims about their experiences, a wealth of rich, qualitative data was gathered, particularly around the escalation of behaviours, the contribution of parents and the normalisation of sibling aggression. This not only provides a significant contribution to the research literature but also provides a wide scope for future research in this field.

A key strength of this thesis was the use of a combination of multiple research methods used to gain insight into sibling aggression. Qualitative and quantitative research methods have their respective advantages and disadvantages, and the utilisation of both serves to overcome some of these. For example, qualitative methods are often criticised for low numbers of participants meaning that it may not be applicable to make generalisations beyond the sample. However, by creating a quantitative measure based on the perspectives of interviewees, the themes drawn from the smaller sample could be tested on a much greater number of participants. This overcomes issues around generalisability and sample size, by taking the opinions of a small number of participants and testing them on a much larger sample.

In the same way, quantitative methods can be criticised for asking participants to make a forced choice in their responses to questions. Through the inclusion of qualitative methods to gain insight into what factors were important to them in their own experiences of sibling aggression, the study overcame this limitation. Given that the research on sibling aggression, although increasing, is not extensive, asking participants to make a forced choice about their experiences could have been

somewhat reductionist. For this reason, after establishing that aggression between siblings is a serious form of family violence, associated with co-occurring aggression, interviews were used to explore the dynamics of the sibling aggression relationship. Only when this had been done, could a quantitative measure be developed.

Study 2 and 3 asked participants to both self-identify themselves as victims and perpetrators of sibling aggression as well as retrospectively recall their experiences of aggression with their sibling in childhood. The validity of these responses could be questioned given that only one family member responded and the memory of participants could be limited. A wealth of research has explored this and it has been found that in large samples, the tendency of participants to underestimate or overestimate their rates of aggression (particularly using the CTS) has been found to be less than two percent (Straus & Gelles, 1990). However, the studies were concerned with how participants retrospectively viewed their experience of sibling aggression.

Similar methods, asking participants to retrospectively rate their experiences of aggression have been used by other researchers. For example, Greenfield and Marks (2010) conducted a secondary analysis of data collected for the National Survey of Midlife in the US (MIDUS), where adult participants had reported their experiences of aggression in childhood via the CTS. Similarly, Vega and O'Leary (2007) asked participants to report partner aggression using the CTS2 at two different phases of research. The first, asked them to report aggression in the year before the study, and then the participants went on to take part in a treatment programme. After completion of this programme, participants were again asked to complete the CTS2 (Straus et al., 1996) about their aggression the year before initially taking part in the

treatment programme, several months later. The researchers noted that the reliability of the scale was very good. Both studies demonstrate that ratings of past aggression are common within the field of family aggression, with this ranging from a few months (e.g. Vega & O'Leary, 2007) or several years (e.g. Greenfield & Marks, 2010). Similarly, when looking at sibling aggression, children have been found to only label their experiences as violent or abusive when they reach adulthood (Hardy, 2001; Hardy et al., 2010). Although there is no recommended 'gold standard' of validity, future research could aim to gather reports from the other siblings within the same family, parents and teachers to gain a greater level of validity over the accounts.

More broadly, a critical realist approach was taken throughout the thesis. In accordance with this, several methods were employed concerning the demonstration of validity throughout the thesis. For example, the ESA scale was compared to the BSQ (Graham-Bermann & Cutler, 1994), demonstrating a good level of concurrent validity. A subsample of the interview accounts from Study 2 were also coded by a second member of the supervisory team. The agreement of themes, combined with the emergence of subscales that reflected these in a larger sample demonstrated a good level of face validity.

An additional limitation of this thesis comes from the use of an opportunity sample, largely consisting of students, in studies 2 and 3. Although Study 3 was advertised on social media and anyone could participate (given that they had at least one sibling), the application of not only the research findings, but also comparison of the ESA scale to other samples could be questioned. However, this was a pilot study of the measure, based on the interview accounts of participants, and the focus was on the psychometric properties of the measure compared to the ability to generalise

every finding to a large sample of people. As this successfully demonstrated the validity of the measure through both the factors established and the concurrent validity when compared to the BSQ (Graham-Bermann & Cutler, 1994), the focus could now move onto trailing the ESA scale with different types of samples.

Finally, the methods used to recruit for Study 2 and 3 could have had an influence on the participant pool. For example, the recruitment posters specifically asked for people who had fought with their brothers and/or sisters to volunteer to take part in the study. This wording was chosen over the phrase sibling aggression to try and avoid ambiguity over the terminology. However, the terms fought or fight could attract more perpetrators than victims of this form of family violence. This may particularly not encourage participants who were sole victims to come forward and take part in this research. Similarly, this may have discouraged participants who only engaged in play fighting to take part in the studies. Despite this, many participants in both studies were mutual victims and perpetrators of sibling aggression and there was a respective sample of participants who had not experienced sibling aggression, which is reflective of the prevalence statistics in this field (e.g. Duncan, 1999; Tippett & Wolke, 2015).

#### 7.5. Conclusions and future implications of the findings

The findings provided from each study have implications for academics and practitioners. For academics, the ESA scale provides a quantitative measurement tool that can be used alongside other act based measures of sibling aggression, to gain greater insight into this form of family violence. Given the findings surrounding the emergence of play fighting as a separate construct to sibling aggression in Study 3, it would be useful for future research to tailor the questions on the normalisation

and participant dominance subscales to specifically refer to play fighting and aggressive behaviours. In addition to this, future research should also attempt to validate the measure with other samples, particularly with children to see whether the questionnaire is useful in samples where participants do not retrospectively report sibling aggression. For practitioners, the findings demonstrate a need for sibling aggression to be recognised as a form of family violence. The use of whole family approaches as an intervention for domestic violence would be beneficial in aiding the identification of victims and perpetrators of sibling aggression. This approach would help to provide support to those who otherwise might be overlooked through the perception that aggression is a beneficial part of sibling development.

Overall, this thesis has provided an insight into the sibling relationship. The development of a measure that distinguishes between play and sibling aggression has the potential for use alongside existing scales of aggressive behaviour. However, the results have gone beyond the development of this, highlighting the differences between perpetrators and victims in their aggressive sibling relationships. This has been in terms of the dominance displayed, the way that they seek attention from parents and the emotions that drive these behaviours. These key findings have both extended and supported previous literature. Establishing both the seriousness of this form of aggression alongside differences between victims and perpetrators is important in establishing as an important factor for practitioners. Sibling aggression is an important factor to consider in families with co-occurring forms of violence and this should be recognised more often in reports of domestic violence and/or child abuse. More importantly, people under the age of 16 should be recognised as potential victims and perpetrators of domestic violence. There are several strengths

and limitations of the thesis but these combine to create many possibilities for future research.

Overall, sibling aggression is a serious form of family violence but there needs to be consideration for play fighting behaviours as the distinction between the two behaviours is often unclear. This will aid clarity to prevalence statistics by reducing the potential inflation of rates of sibling aggression. Similarly focusing on the context and functions of the aggressive behaviours will aid the identification of victims and perpetrators, allowing problematic behaviours to be addressed.

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# PARTICIPANTS WANTED

People wanted to take part in a study looking at relationships between brothers and sisters and how they played or fought with one another.

I am looking for people aged 18 or older, who fought with their brothers and/or sisters to take part in a discussion to talk about relationships between brothers and sisters. This should only last about 30 minutes in total.

Please take a slip below and email the researcher if you are interested in taking part in the study



Brother & Sister Relationship Study E-Mail: NHarrison1@uclan.ac.uk

**Appendix 2: Participant demographic questions for Study 2**

**Demographic Information**

**Please provide the following information by providing an answer or circling the correct answer.**

1. What is your age? : .....years

2. Indicate your gender (please circle):

Male

Female

3. Do you have any brothers and/or sisters?

Yes

No

4. If yes, how many?

.....Brothers

.....Sisters

5. Please indicate the relationship with your brothers and/or sisters.

.....Natural

.....Adopted

.....Fostered

.....Step

6. Do you have any children?

Yes

No

7. If yes how many? : .....

8. Have you ever been a victim of sibling aggression? (Please circle):

Yes

No

9. Have you ever been a perpetrator of sibling aggression? (Please circle):

Yes

No

### **Appendix 3: Semi-structured interview schedule**

<b>Question</b>	<b>Theory testing</b>	<b>Probes</b>
What can you tell me about your family?	RHP, family structure	How many brothers and/or sisters do you have? What is the age difference between you and your brothers and/or sisters? What did you do to spend time as a family? How did you get along with your parents? How often did you see your parents?
How did you get along with your brothers and/or sisters?	RHP, social dominance	How did you play with one another? Where did you spend the most time with each other? What do you think about play fighting?
What did you used to argue about?	RHP, social dominance, social learning theory	Was there anything that you did to get what you want? At what age did you argue most?
Why do you think arguments turned into fighting?	Social learning theory, social dominance	Was there anything that made the situation worse? Who started the fighting?
What can you tell me about your worst fight?	Social dominance	Was there anything that made it worse than other fights? How did you feel at the time? Why do you think it happened? How did it end?
How did your parents or other family members react?	RHP, parenting styles, social learning theory	Did they try to stop you fighting with your brother and/or sister? How did you feel when they did/didn't do something about your fighting?
How do you get on with your family now?	Long term effects	How often do you see your brothers and/or sisters? What is your relationship like?

## **Appendix 4: Participant consent form for Study 2**

### **A Study to Investigate Sibling Aggression**

This survey is being carried out by Natalie Harrison under the supervision of Dr Nicola Graham-Kevan, at The University of Central Lancashire. I would greatly appreciate it if you could help me in my research by taking part in a study concerning sibling aggression. Please note that all participants should be aged 18 years or older.

The study will involve taking part in an interview. This will involve you talking about how you and your brothers and/or sisters used to fight with each other. This interview will take place in a secure, confidential location within the university, on a one to one basis. It will be audio taped for research purposes only. The audio tape will remain in the university at all times, under lock and key so that your answers will remain confidential. You are also asked to complete two questionnaires. One of these asks about yourself (e.g. sex, age etc.) and the other asks about how you and your brother and/or sister got along. Your questionnaire responses will be linked to your interview, so after this process has taken place, all answers will be anonymised. Overall, this should take approximately 30 minutes. Please be aware that the questions asked; both in the interview and on the questionnaire will concern aggression between siblings.

With regards to the questionnaires and the audio tape recording of the interview, your responses will remain anonymous. This means that aside from the research team, no other person will have access to the audio tape recordings from the interview. If any quotes are used for research purposes (e.g. within publications or at academic conferences) then you will not be identified, and your voice will not be used; only written words. By taking part in the study, the opinions provided by you will be used to write a final report, which will help contribute to our understanding of brothers and sisters fighting with each other.

If you do have any questions about the research please feel free to speak to the researcher.

**Please remember that you do not have to take part in this research, it is entirely voluntary. If you should find the interviews or questionnaires upsetting please feel free not to take part.**

**You also have the right to withdraw from the research; you don't have to take part in the interview. Please be aware however, that once you have taken part in this interview, we will not be able to take you out of the research.**

**From your responses, the findings will be summarised into a thesis, which could be published and presented at academic conferences, but this will not identify you in anyway, and only those with legitimate professional need will see the recordings of the interview and the responses to the questionnaires.**

**If you are willing to take part in the research please print and sign your name below:**

..... Signature.....  
Date:.....

Contact details for the researcher are as follows:

Natalie Harrison, School of Psychology, University of Central Lancashire, Preston, Lancashire, PR1 2HE. E-Mail: NHarrison1@uclan.ac.uk

## **Appendix 5: Participant debrief for Study 2**

### **Debrief**

**Please feel free to take this page for your information.**

This study was conducted to look at how brothers and sisters fight with each other. Although it is common to hear of domestic violence in newspapers and on television, fighting between brothers and sisters, although common, is not heard of in this way. By asking people about their experiences of how brothers and sisters fight, it may bring some attention to a side of family violence which is often neglected. It is expected that this type of fighting will be quite common but what the research is looking to explore is how the fighting starts and is handled by parents and other relatives living in the family home.

Thank you for taking part in the interview and for completing the questionnaires. Be reminded that both the audio tape recording of the interview and questionnaires will remain anonymous and be treated with confidentiality, only being used for research purposes. This means that only those people with legitimate professional need will have access to the audio tape recordings and questionnaires. If any quotes are used for research purposes (e.g. within publications) then you will not be identified, and your voice will not be used; only written words. For any further information on the topic or other information, queries, and concerns regarding this topic and study, please feel free to contact me or my director of studies using the following details:

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### **Further information, questions, and contacts**

*If you have been affected by any of the issues raised in the study and would like some free confidential advice or someone to listen to, the following organisations and support services are available to you:*

*The University of Central Lancashire Student Counselling Service*  
01772 892572  
CRecep@uclan.ac.uk

The service has been designed to help individuals to deal with and understand their problems, hopefully helping them to deal with the situation in a way that they feel comfortable. If you wish to talk to someone today, you can call the above number after 9.45am and attend a duty session.

*The Samaritans*  
01772 822022 or 08457 909090

The Samaritans are a non-religious group of people which provide emotional support 24 hours a day, 7 days a week. This service is designed for people who are feeling feelings of distress or despair. They are there for anyone that just needs to talk to someone.

*SupportLine*  
020 8554 9004

This is a confidential telephone service offering emotional support to any individual on any issue. It is available to any individual of any age. You can talk over your feelings with a helpline worker who offers non-judgmental, caring, empathic support. The helpline worker will work with the caller to encourage greater understanding and awareness of the caller's issues and to help the caller develop more positive coping strategies

## **PARTICIPANTS WANTED!!**

**Did you fight with your brothers and sisters as a child?**

**Do you want to take part in a study looking at experiences of fighting between brothers and sisters?**

I am a PhD student investigating the experience of sibling aggression. In the study, I am interested in the experiences that brothers and/or sisters have when fighting with each other. The study will ask you a number of questions about the brother or sister that you had the most conflict with. This does include questions on physical aggression.

If you are aged 16 or over and would like to take part in the study, I would be very grateful. The link below will take you to the study, where there will be more information for you to read before deciding whether to take part.

<b>Brother &amp; Sister experience study</b> <a href="https://www.esurveycreator.co.uk/s/8d3d95e">https://www.esurveycreator.co.uk/s/8d3d95e</a>



**Appendix 8: Brother-Sister Questionnaire (Graham-Bermann & Cutler, 1994)**

Brother-Sister questionnaire (Graham-Bermann & Cutler 1994)

**In most families, brothers or sisters cooperate with each other AND hassle or bother each other. This questionnaire is focused on the conflict side of the brother or sister relationship. Answering these questions does not mean that this (conflict) was the only aspect of your sibling relationship. It is all we are asking about today.**

*Please circle the correct response:*

1. Is there one brother or sister in your family who used to pick on you or bother you a lot when you were growing up?

Yes

No

2. Compared with other brother or sister relationships you know about, how much would you say that YOUR brother or sister (identified in question 1) picked on or bothered you?

*Not very much*

1

2

3

4

*Very much*

5

3. Is there one brother or sister in your family who YOU used to pick on or bother a lot when you were growing up?

Yes

No

4. Compared with other brother or sister relationships you know about, how much would you say that YOU picked on or bothered your brother or sister (identified in question 1)?

*Not very much*

1

2

3

4

*Very much*

5

**In most families, brothers or sisters cooperate with each other AND hassle or bother each other. This questionnaire is focused on the conflict side of the brother or sister relationship. Answering these questions does not mean that this (conflict) was the only aspect of your sibling relationship. It is all we are asking about today.**

Please answer the questions in relation to how you felt in when growing up with your sibling (i.e. in childhood)

*Please circle the correct response:*

	<i>Not very much</i>				<i>Very much</i>
1. We are very good friends or buddies	1	2	3	4	5
2. We are very close to each other	1	2	3	4	5
3. I care a lot about what he or she does	1	2	3	4	5
4. We usually get along very well	1	2	3	4	5
5. We spend a lot of time together	1	2	3	4	5
6. He or she cares a lot about what I do	1	2	3	4	5
7. She or he cares a lot about what I think	1	2	3	4	5
8. He or she feels bad when I feel bad	1	2	3	4	5
9. When she or he feels happy I do too	1	2	3	4	5
10. I would loan money to him or her	1	2	3	4	5
11. We do a lot of arguing or fighting	1	2	3	4	5
12. He or she takes care of me a lot	1	2	3	4	5
13. She or he always gets into my stuff	1	2	3	4	5
14. He or she always tries to do what I am doing	1	2	3	4	5
15. He or she always tries to copy me	1	2	3	4	5
16. She or he always makes a mess of my things	1	2	3	4	5
17. She or he always takes my things without asking	1	2	3	4	5
18. If I get something she or he always wants it too	1	2	3	4	5
19. We like to do the same things	1	2	3	4	5

**In most families, brothers or sisters cooperate with each other AND hassle or bother each other. This questionnaire is focused on the conflict side of the brother or sister relationship. Answering these questions does not mean that this (conflict) was the only aspect of your sibling relationship. It is all we are asking about today.**

Please answer the questions in relation to how you felt in when growing up with your sibling (i.e. in childhood)

*Please circle the correct response:*

	<i>Not very much</i>				<i>Very much</i>
20. We do the same amount of chores	1	2	3	4	5
21. We like the same sports and games	1	2	3	4	5
22. We have the same friends	1	2	3	4	5
23. We are very much alike	1	2	3	4	5
24. We get in the same amount of trouble	1	2	3	4	5
25. We argue a lot about whose turn it is to do things	1	2	3	4	5
26. We like the same TV shows	1	2	3	4	5
27. We are good at the same school subjects	1	2	3	4	5
28. He or she shows me how to do bad things	1	2	3	4	5
29. I feel used and taken advantage of by him or her	1	2	3	4	5
30. I felt rejected by my brother or sister	1	2	3	4	5
31. My brother or sister gets blamed more than me	1	2	3	4	5
32. He or she tries to keep me away from my friends	1	2	3	4	5
33. I care a lot about what he or she thinks	1	2	3	4	5
34. I would tell my biggest secret to him or her	1	2	3	4	5
35. I get to do things before my brother or sister	1	2	3	4	5

## **Appendix 9: Participant consent form for Study 3**

### **A Study to Investigate Sibling Aggression**

This survey is being carried out by Natalie Harrison, a PhD student under the supervision of Dr. Nicola Graham-Kevan, Dr. Cath Sullivan and Dr. Roxanne Khan at The University of Central Lancashire. This study is part of my overall PhD and I would greatly appreciate it if you could help me by taking part in a study concerning sibling aggression. Please note that all participants should be aged 16 years or older.

The study will involve completing a number of questionnaires. These will look at how you and your brothers and/or sisters used to fight with each other. One questionnaire will also ask about yourself (e.g. sex, age etc.) and the other three ask about how you and your brother and/or sister got along. When you have submitted all of your answers online, they will be anonymised. Overall, this should take approximately 30 minutes. Please be aware that the questions will ask you to think about the relationship with your sibling that you had the most conflict with. This does include questions asking about physical aggression.

All of your responses will remain anonymous. This means that aside from the research team, no other person will have access to the questionnaire responses. By taking part in the study, the responses provided by you will be used to write a final report, which will help contribute to our understanding of brothers and sisters fighting with each other.

If you are a psychology student at the University of Central Lancashire, who is participating in studies to gain SONA points, please be reminded that you do not have to take part in this particular study. Feel free to choose an alternative study if you would prefer. If you do have any questions about the research please feel free to email the researcher before continuing with the questionnaires.

**Please remember that you do not have to take part in this research, it is entirely voluntary. Some people may find the topic of the questionnaire distressing. If you feel you might find it distressing, please think carefully before deciding to participate.**

**You also have the right to withdraw from the research; you don't have to take part in the questionnaires. You may stop the questionnaire at any point, however please be aware that the responses that you have given so far will be deleted and totally withdrawn from the study. Please be aware however, that once you submit your completed questionnaire responses, they will be anonymous and we will not be able to take you out of the research. If you would prefer a hard copy of the questionnaire, please contact the researcher using the contact details below.**

**From your responses, the findings will be summarised into a thesis, which could be published and presented at academic conferences, but this will not identify you in anyway, and only those with legitimate professional need will see the responses to the questionnaires.**

**By submitting your responses to the questionnaires, you are providing consent for your data to be used in the study. By clicking ahead, you will be presented with the questionnaires to take part in the study.**

Contact details for the researcher are as follows:

Natalie Harrison, School of Psychology, University of Central Lancashire, Preston, Lancashire, PR1 2HE. E-Mail: [NHarrison1@uclan.ac.uk](mailto:NHarrison1@uclan.ac.uk) or [NGraham-Kevan@uclan.ac.uk](mailto:NGraham-Kevan@uclan.ac.uk).

If you wish to speak to someone outside the research team, concerns should be addressed to the university officer for ethics at [officerforethics@uclan.ac.uk](mailto:officerforethics@uclan.ac.uk). Information provided should include the study name or description (so that it can be identified), the principle investigator or student investigator or researcher, and the substance of the complaint. For further information, click the following link; [http://www.uclan.ac.uk/research/environment/assets/concerns\\_procedure.pdf](http://www.uclan.ac.uk/research/environment/assets/concerns_procedure.pdf)

## **Appendix 10: Participant debrief for Study 3**

### **Debrief**

**Please feel free to take this page for your information.**

This study was conducted to look at how brothers and sisters fight with each other. Although it is common to hear of domestic violence in newspapers and on television, fighting between brothers and sisters, although common, is not heard of in this way. By asking people about their experiences of how brothers and sisters fight, it may bring some attention to a side of family violence which is often neglected. It is expected that this type of fighting will be quite common but what the research is looking to explore is how the fighting starts and is handled by parents and other relatives living in the family home.

#### **Further information, questions, and contacts**

*If you have been affected by any of the issues raised in the study and would like some free confidential advice or someone to listen to, the following organisations and support services are available to you:*

*Psychology and mental health forum*

*Psychforums.com*

A forum service where you can talk about your experiences and get advice from other members of the forum. This covers a huge range of topics.

*Victim Support*

08081689111

supportline@victimsupport.org.uk

This is a free service which is open every day to help victims of reported or unreported violence. You can call the number above or send them an email if you wish to talk to someone. You can request a call back service or send them an email

*The University of Central Lancashire Student Counselling Service*

01772 892572

CRecep@uclan.ac.uk

The service has been designed to help UCLan students to deal with and understand their problems, hopefully helping them to deal with the situation in a way that they feel comfortable.

*The Samaritans*

01772 822022 or 08457 909090

jo@samaritans.org

The Samaritans are a non-religious group of people which provide emotional support 24 hours a day, 7 days a week. This service is designed for people who are feeling feelings of distress or despair. They are there for anyone that just needs to talk to someone.

*SupportLine*

020 8554 9004

info@supportline.org.uk

This is a confidential telephone service offering emotional support to any individual on any issue. It is available to any individual of any age. You can talk over your feelings with a helpline worker who offers non-judgmental, caring, empathic support. The helpline worker will work with the caller to encourage greater understanding and awareness of the caller's issues and to help the caller develop more positive coping strategies

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Thank you for taking part in the study by completing the questionnaires. Be reminded that questionnaires became anonymous when they were submitted. They will be treated with confidentiality, only being used for research purposes. This means that only those people with legitimate professional need will have access to the responses that you gave on the questionnaires. For any further information on the topic or other information, queries, and concerns regarding this topic and study, please feel free to contact me or my director of studies using the following details:

**Natalie Harrison**  
MPhil/PhD Psychology Student  
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University of Central Lancashire  
Preston, PR1 2HE  
E-mail: NHarrison1@uclan.ac.uk

**Dr. Nicola Graham-Kevan**  
Director of Studies  
School of Psychology  
University of Central Lancashire  
Preston, PR1 2HE  
E-mail: NGraham-Kevan@uclan.ac.uk

If you wish to speak to someone outside the research team, concerns should be addressed to the university officer for ethics at [officerforethics@uclan.ac.uk](mailto:officerforethics@uclan.ac.uk). Information provided should include the study name or description (so that it can be identified), the principle investigator or student investigator or researcher, and the substance of the complaint. For further information, click the following link; [http://www.uclan.ac.uk/research/environment/assets/concerns\\_procedure.pdf](http://www.uclan.ac.uk/research/environment/assets/concerns_procedure.pdf)