

**Examining the peer relationships and conflict experiences of  
adolescent girls and women on the autism spectrum**

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## Declaration

I, Felicity Sedgewick, confirm that, apart from where explicitly stated below, all the work presented in this thesis is entirely my own.

Occasional assistance with data collection was provided by the Brain Detectives team, comprised of researchers from the Centre for Research in Autism and Education (CRAE), at the UCL Institute of Education. Eilish Roy, an undergraduate placement student at CRAE (2016-2017), also provided some assistance with data collection for the study described in Chapters Two and Three.

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## **Abstract**

Despite a wealth of interest in, and research on, gender differences in the friendships and social relationships of neurotypical children and adults, there is a paucity of research on such differences in individuals on the autism spectrum. Only three published papers focus specifically on the friendships of autistic individuals in the same age range as the work of this PhD, and these have included predominantly male participants, who do not represent the range of female experiences. This PhD therefore sought to redress this imbalance by focussing on the peer relationship, friendships, and conflict experiences of adolescent girls, as well as women on the autism spectrum, in comparison to their autistic male and neurotypical female peers. Parental views on the relationships of autistic girls were also sought.

In Chapter One, I review the literature investigating peer relationships amongst autistic adolescents, neurotypical adolescents, and autistic adults, focussing on their experiences of conflict within those relationships and their potential impact. Chapters Two and Three focus on data from adolescents. In Chapter Two, I present data from a mixed-methods study showing that autistic adolescents rate their best-friendships as like those of neurotypical adolescents, but that autistic adolescents experience far more peer conflict, and these experiences are qualitatively different for autistic girls compared to all other groups. In Chapter Three, I examine the factors that potentially underpin friendship strength and victimisation for male and female adolescents, following the results of Chapter Two and using data from the same participants. In Chapter Four, which focuses specifically on adult women, I report data from autistic and neurotypical adult women, examining similar constructs and questions to the adolescent study (Chapter Two). In Chapter Five, I directly compare the qualitative data from autistic girls, autistic women, and the girls' parents. I take a developmental perspective, examining which factors might lead to the potential vulnerability described in Chapter Four, to

understand which preventative measures might be used to support autistic girls as they grow up. In Chapter Six, I discuss the significance of these findings in the context of the extant literature on both autism in girls and women, and of the peer relationships of autistic adolescents. I conclude by suggesting that the relationships and social experiences of autistic girls and women are qualitatively different to those of both autistic boys and neurotypical girls and women. These findings suggest that autistic girls and women require specialised and targeted support to enable them to successfully and safely engage with their peers in adolescence and beyond.

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## **List of Publications**

### **Chapter Two:**

**Sedgewick, F., Hill, V., & Pellicano., E.** (submitted) “It’s different for girls”: gender differences in the nature of friendships and conflict in autistic and neurotypical adolescents.

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## **List of Abbreviations**

ADHD: Attention Deficit Hyperactive Disorder

ADOS-2: Autism Diagnostic Observation Schedule, 2<sup>nd</sup> Edition

CAGE: The CAGE Alcohol Screening Questionnaire

CRAE: Centre for Research in Autism and Education

FQS: The Friendship Qualities Scale

GAD-7: The General Anxiety Disorder-7 Questionnaire

LGBTQ: Lesbian, Gay, Bisexual, Transgender and Queer

LSAS: The Liebowitz Social Anxiety Scale

OCD: Obsessive Compulsive Disorder

PHQ-9: The Patient Health Questionnaire-9

PSHE: Personal, Social, Health, and Economic education

RPEQ: The Revised Peer Experiences Questionnaire

SCAS: The Spence Children's Anxiety Scale Questionnaire

SCOFF: The SCOFF Eating Disorder Screening Questionnaire

SDQ-C: The Strengths and Difficulties Questionnaire – Child Self-Report version

SDQ-P: The Strengths and Difficulties Questionnaire – Parent-Report version

SEARS-A: The Social and Emotional Assets and Resiliencies Scale – Adolescent Self-Report

version

SEARS-P: The Social and Emotional Assets and Resiliencies Scale – Parent-Report version

SEN: Special Educational Need

SRS-2: The Social Responsiveness Scale, 2<sup>nd</sup> Edition

SSD: Schizophrenic Spectrum Disorder

SWLS: The Satisfaction With Life Scale Questionnaire

TASIT: The Awareness of Social Inference Test Video Measure

UCL IoE: University College London Institute of Education

URCS: The Unidimensional Relationship Closeness Scale Questionnaire

Z-FOCS: The Zohar-Fineberg Obsessive Compulsive Screening Questionnaire

## Chapter One: Literature review

### 1.1 What is autism?

Autism (now known as autism spectrum disorder following the Diagnostic Statistical Manual – 5<sup>th</sup> Edition, American Psychiatric Association [APA], 2013) is a lifelong developmental condition which affects around 1 in 100 people in the United Kingdom (UK) (Brugha et al., 2011). Early prevalence rates were given at around 20 in 10,000 people in the UK (Baird et al., 2006), but recently this ratio has dropped to give the 1 in 100 figure due to changes in the diagnostic criteria. These changes have seen the definition of autism expand from only covering those individuals who were minimally verbal and who had co-occurring learning disabilities, to including those who are highly verbal and cognitively able, creating the autism spectrum, as suggested by Wing and Gould in their seminal 1979 paper. This shift has been responsible for the supposed ‘autism epidemic’ which has been discussed since the 1990’s – and which has been thoroughly dismissed (Gernsbacher, Dawson, & Goldsmith, 2005; Wazana, Bresnahan, & Kline, 2007).

Autism is clinically defined as being typified by difficulties in two core domains: ‘persistent deficits in social communication and social interaction across contexts’ and ‘restricted, repetitive patterns of behaviours, interests, or activities’. These difficulties must be present in early childhood and impair everyday functioning (APA, 2013). Although diagnosis relies on behaviours being visible in early childhood, autism is present across the lifespan and continues to impact individuals for their whole life.

In autistic<sup>1</sup> people, difficulties in social communication and interaction can include elements such as difficulty with reciprocity in social situations, such as turn-taking in games

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<sup>1</sup> The term ‘autistic person’ is the preferred language of many, but not all, people on the spectrum (Kenny et al., 2016). In this thesis, this term is used as well as person-first language to respect the diversity of views amongst individuals on the spectrum.

or conversations, difficulties with understanding the behaviours of others, and difficulties with making and maintaining relationships, the latter being the focus of this thesis. Repetitive and restricted behaviours and interests (RRBI's) can be seen in stereotyped movements, such as putting toys in a line rather than creating a story with them, a preference for routine, and a preoccupation with topics of personal interest to the exclusion of other people or activities. Sensory hyper- and/or hypo-sensitivities also became a recognised feature of autism in the most recent version of the diagnostic manual (APA, 2013). While the above features are expected to be present in early childhood, they may not become impairing until later in life as greater demands are placed upon the individual. In order to receive an autism diagnosis, none of these features should be better explained by intellectual disability or global developmental delay (APA, 2013).

Autism is a behaviourally diagnosed condition (APA, 2013). Diagnostic measures include structured observations of the individual, clinical interviews (with parents, family members, and the individual), and reviews of the individuals' diagnostic history (Volkmar et al., 2014). This means that there can be some subjectivity in determining whether an individual meets the criteria for an autism diagnosis, with the final decision resting with the clinician and their expertise, or with a multi-disciplinary team of professionals and their group consensus. Autism is a highly heterogeneous condition, hence being known as the 'autism spectrum'. A wide variety of presentations are collected together under the umbrella term of 'autism', reflecting the range of cognitive ability, adaptive functioning, and verbal ability which characterise individuals on the spectrum. This is perhaps unsurprising, considering that over 100 different genetic influences on the development of autism have been identified or suggested (Betancur, 2011), and these genetic differences are related to both social and non-social behaviours in autism (Ronald, Happé, & Plomin, 2005). This results in high levels of individual differences in autism, across the fields of executive function (Pellicano, 2010);

emotion regulation (John & Gross, 2004); theory of mind (Carlson & Moses, 2001); and emotional responsiveness (Dissanayake, Sigman, & Kasari, 1996).

There are a range of conditions which commonly co-occur with autism. Some of the most common are social anxiety (Simonoff et al., 2008; Kim et al., 2000), attention deficit hyperactivity disorder (ADHD; Leyfer et al., 2006), and depression (Ghaziuddin, Ghaziuddin, & Greden, 2002). Intellectual disability is another common co-occurring diagnosis with autism, with one recent review finding rates of approximately 50% (Matson & Shoemaker, 2009). Autism is also often diagnosed as a co-occurring condition in individuals with Fragile-X Syndrome, with up to 50% of Fragile-X individuals also having an autism diagnosis (Abbeduto, McDuffie, & Thurman, 2014). There is also an established link between autism and epilepsy, which was recognised as early as 1970 (Gubbay et al., 1970) and has continued to be investigated, with studies consistently finding around 30% overlap between the two conditions (Clarke et al., 2005).

Recent prevalence studies have suggested that the gender ratios in autism are likely to be around 3:1 boys:girls across the range of cognitive ability (Loomes, Hull, & Mandy, 2017). This contrasts with earlier, much higher estimates of up to 12:1 for cognitively able individuals, and 3:1 for those with learning disabilities (Fombonne, 2003). The accepted gender ratios across the autism spectrum have had a complex history and are continuing to be developed. The core features of autism (as described above) were identified, developed, and diagnosed based on mainly male samples. From the earliest clinical and research reports of autism, boys have dominated both research samples and public perceptions of the condition. The two researchers who first identified autism as a discrete condition were Leo Kanner and Hans Asperger, and both worked mainly with boys. Leo Kanner had 8 boys in his group of 11 children (Kanner, 1943), Asperger had no girls in his initial sample of four participants (Asperger, trans. Frith, 1991), and 'gold-standard' diagnostic tools such as the Autism

Diagnostic Observation Schedule – 2<sup>nd</sup> Edition (ADOS-2) were developed with 87% male samples (Lord et al., 2012). As early accounts of autism focussed on boys, clinicians and researchers took this to mean that the condition was primarily a male one (Banach et al., 2009).

This gender imbalance in the traditional thinking about, and development of tools to identify, autism, has arguably led to an over-emphasis on male presentations and behaviours within autism, inherently disadvantaging girls on the spectrum who then struggle to be recognised against these male-centric criteria and who are omitted from research and intervention designs. As, over time, fewer girls and women have been diagnosed as being on the autism spectrum, a significant proportion of research into autism has therefore been conducted with all- or majority-male participants (Banach et al., 2009), leading to a dearth of information about women on the spectrum. This imbalance in the numbers of males and females diagnosed has been echoed in research, with many studies excluding females entirely as being ‘unrepresentative’ or including small numbers and then carrying out no gender-based analysis of difference as there are too few females in the sample to explore this with sufficient statistical power (Gould & Ashton-Smith, 2011). Some researchers have argued that this participant bias has supported a male-centric approach to the diagnosis and management of autism, meaning that girls on the spectrum are subject to being ‘missed’ (Gould & Ashton-Smith, 2011) and resulting in lower rates of diagnosis amongst girls and women (Duvekot et al., 2017), and when girls and women are diagnosed, it tends to be at later ages than their male counterparts (Dworzynski, Ronald, Bolton, & Happé, 2012). Therefore, these established ratios are potentially underestimating the number of girls who are on the autism spectrum.

There are several theories as to the origin of autism which have been based upon or emphasised this male-dominance in diagnosis rates (Banach et al., 2009), most of which are biologically-based. One prominent theory is the ‘Extreme Male Brain’ theory (EMB: Baron-Cohen, 2002; 2009). This is a development of Baron-Cohen’s ‘Empathising-Systematizing’



conceptualisation of typical sex differences in behaviour and how these present within autism. Baron-Cohen suggests that females are generally more empathetic (i.e., more focussed on other people and their emotions), and males are generally more systematizing, (i.e., more 'logical' and focussed on mechanical or procedural processes). This theory of sex/gender differences in thinking and behavioural styles was thought by Baron-Cohen to be due to underlying neuroanatomical differences between men and women. The EMB proposes that individuals on the autistic spectrum display an extreme form of the more 'typically male' behaviour profile in relation to empathising and systemising, leading to aspects of autism such as a preference for sameness, difficulties with social relationships, and atypical behaviours in childhood (such as lining up toys) (APA, 2013). These 'extreme male' behaviours have then been linked to neuroanatomy, with fMRI studies, arguing that autistic brains can be seen as being even 'more masculine' than those of neurotypical males in terms of structure and neural function (Baron-Cohen, Knickmeyer, & Belmonte, 2005). This research can be contested, however, as the numbers involved in most fMRI studies are small, with one systematic review finding the largest original sample (rather than pooled data) being 19 participants in fMRI studies of social processing in autism (Philip et al., 2012). This suggests that the findings of fMRI studies do not necessarily represent the range of variation across a whole population. Further, there is a notable degree of heterogeneity in brain structure, meaning that there are males and females who display the 'typical brain' of the other gender (Giedd et al., 1996). This suggests that these are not absolute categories or findings, and so such gender-based essentialism cannot be the answer to what autism is or how it presents.

One proposition for what might cause the 'gendering' of the brain is foetal testosterone theory, which posits that individuals exposed to higher-than-usual levels of testosterone in utero then develop 'masculinised' brains, the extreme form of which can result in the 'extreme male' profile which Baron-Cohen argues is associated with autism (Auyeung et al., 2009).

Another key theory which seeks to explain the observed higher rates of autism in boys is the Imprinted-X Liability Model (Skuse, 2000). This theory posits that while there has been little progress in identifying the ‘autism genes’, including on the X and Y chromosomes which determine sex (Skuse, 2007), it may be that males are more susceptible to autism because they only have one X chromosome. This means that the male ‘threshold’ for developing clinically-diagnosable autistic behaviours may be lower than for females, as females have a second X chromosome to ‘protect’ them by overriding the ‘autistic variant’. This female protective effect also forms part of the theory of Werling and Geschwind (2013), who argue that autistic females are thereby “carrying a higher heritable mutational ‘load’” than autistic males, and that this should be seen in high levels of autistic traits in their relatives, which has been found to be the case (Hallmayer et al., 2011).

As discussed above, social difficulties are a core and defining feature of autism, and these have a significant impact on the daily lives of people on the autism spectrum. Autistic people have been found to have fewer friendships (Bauminger & Shulman, 2003), to have higher levels of loneliness (Bauminger & Kasari, 2000), and to be more socially excluded than both neurotypical peers and peers with other developmental conditions (Locke, Ishijima, Kasari, & London, 2010). Adult studies have found that autistic people are less likely to be married or in a long-term romantic relationship (Howlin, 2000; Howlin, Moss, Savage, & Rutter, 2013), are more likely to rely on their parents for social support than on same-age peers or colleagues (Howlin, Goode, Hutton, & Rutter, 2004), and are more likely to be unemployed (Howlin, 2013a) than their neurotypical counterparts. Some researchers, however, have highlighted that the definition of ‘good’ outcomes have been vague and widely varied between studies, and have called for a more standardised approach, including consideration of an individual’s environment and subjective quality of life (Henninger & Lounds-Taylor, 2012; Howlin & Lounds-Taylor, 2015).

## **1.2 Gender differences in friendships**

Friendships are a crucial part of our development as social individuals, from childhood through to adulthood, and friendships can make us happier and healthier across the lifespan (Antonucci & Akiyama, 1987; Berkman & Syme, 1979). They allow us to develop social skills (Schaffer, 1996) and provide critical social and emotional support, building resilience and adjustment (Demir & Urberg, 2004; Dumont & Provost, 1999). Difficulties in this area of social development have been associated with maladaptive behaviours and worse adult outcomes (Bagwell, Newcomb, & Bukowski, 1998).

Decades of research has shown that there are stable patterns of gender differences in the friendships of neurotypical people. Among neurotypical girls, for example, friendships are characterised as being more supportive and less defined by power struggles than those of boys (De Goede, Branje, & Meeus, 2009). Young women's friendships are based more on talking, especially about personal problems, and emotional sharing than young men's, who instead focus on shared activities (Aukett, Ritchie, & Mill, 1999; Caldwell & Peplau, 1982; McNelles & Connolly, 1999), and these differences emerge and increase from the ages of 9 through to 15 (Sharabany, Gershoni, & Hofman, 1981). There are also gender differences in which aspects of someone's personality boys and girls focus on when choosing friends – boys tend to focus on attributes which are linked to high social status, whereas girls tend to look for people with attributes which help them to maintain close relationships with a few friends (Benenson, 1990).

Girls have been shown to experience more friendship jealousy than boys, in that they are more likely to feel negatively towards other children who approach their best friend or who they feel might 'steal' their best friend (Parker, Low, Walker, & Gamm, 2005). This may be because girls have been found to be more 'exclusive' in their dyadic and triadic friendships than boys, being less likely to accept a third person or to expand an existing triad (Eder & Hallinan, 1978). This reluctance to accept new friends into an established relationship might

be linked to the closeness which girls place so much importance on (Durell, 2004; Rose, 2002), as this emotional sharing leaves an individual vulnerable if the new person turns out to be less trustworthy than the original friend.

Research into different types of friendship networks has shown that girls are more likely to use mobile phones to maintain their relationships, to expand their group of friends (Igarashi, Takai, & Yoshida, 2005), and they are likely to have more opposite-sex friends than boys (Feiring, 1999). The Aukett, Ritchie, and Mill (1988) study, carried out with 18- and 19-year-old participants who reflect the experiences of those at the older end of the adolescent age range, also found that young adult men showed a preference for large groups of less emotionally intimate same-sex friends, whereas young adult women tended to have a few very close friends. This pattern is also seen in early adolescence, with boys nominating more friends in their social networks than girls (Benenson, 1990).

Differences in friendship behaviours by gender may be a result of different socialisation patterns. Parents typically encourage gendered play – co-operative pretend play with girls and active physical play with boys – which may have a significant role in later developing friendship patterns (Lindsey & Mize, 2001). Furthermore, it has been found that typical girls reach more complex social and linguistic development stages earlier than boys, which may allow them to more easily form relationships based on co-operative play and shared conversation (Barbu, Cabanes, & Le Maner-Idrissi, 2011).

### **1.3 Friendship in autism**

Autistic children and adolescents often find making and maintaining friendships difficult due to their inherent challenges with social communication, although there is much variation in the relationships which they actually maintain in practice, in line with the level of individual differences seen across the autism spectrum in general. It is also the case that, as discussed above, the gender differences in friendships seen in neurotypical girls and boys may

also apply to autistic girls and boys, potentially resulting in further variation, although this has not been widely studied. Despite showing interest in forming secure and supportive peer relationships (Calder, Hill, & Pellicano, 2013), autistic children are more likely to be on the periphery of the social networks in mainstream school classrooms (Kasari, Locke, Gulsrud, & Rotheram-Fuller, 2011) compared with their neurotypical peers. They are also more likely to be the victims of bullying (Rowley et al., 2012), which may be more prevalent than previously thought (Humphrey & Symes, 2010).

As a result of the well-recognised challenges autistic individuals face with social communication, there is a common perception that some autistic children, young people and adults do not *want* to have friends. Anecdotal reports and increasing empirical evidence suggest, however, that this is not always the case. Children and young people with autism report having friends and best friends (Bauminger et al., 2008), and have a desire to play with, and chat to, their neurotypical peers (Travis, Sigman, & Ruskin, 2001). This social motivation was also examined by Calder et al. (2013), who studied autistic and non-autistic young people in mainstream primary schools. They found significant variation in the children's motivation for making and keeping friends, although it was not possible to analyse such variation by gender as the sample involved was small and mostly male. While some young autistic people desperately wanted friends, others had limited social connections but preferred things this way: "I am happy with my life right now. I am not friendly and talkative, but I am not not friendly. I am somewhere in the middle" (p. 12). As studies with mainly male samples find variation in friendship experiences, it may be expected that there would be further variation when participants are compared by gender as well, as gender plays a significant role in social experiences in general (Aukett, Ritchie, & Mill, 1988).

### **1.3.1 Autism and inclusion.**

Previous research comparing the friendships and bullying of autistic children between special and mainstream educational settings has yielded mixed findings. Some work has suggested that autistic children make more significant improvements academically and socially in special schools (Panerai et al., 2009). It has also been shown that children whose diagnosis is explicitly shared with their classmates experience more positive and consistent support from their peers than those whose diagnosis is not disclosed (Ochs, Kremer-Sadlik, Solomon, & Sirota, 2001). These findings challenge the idea that there will be a negative stigma around being autistic that will make the experience of mainstream school even more difficult for children and young people on the spectrum. It has been suggested that, if peers are aware of a young person's diagnosis, they may be more forgiving of traits such as 'shyness' which are associated with social rejection (Jones & Frederickson, 2010). Despite these positive findings in some studies, there has also been research which has found that disclosing diagnosis can increase the bullying a child experiences, as it gives a specific 'target' for peers to use against them (Humphrey & Lewis, 2008; Huws & Jones, 2009). Related to this, inclusion in a mainstream setting can support the development of social skills and results in increases in the social acceptance of autistic young people (Pierce & Schreibman, 1995; Whitaker, 2007). Yet, without some degree of social support or staff training, these effects are often minimal (Myles et al., 1993).

Inclusion can, however, also lead to challenges for autistic students. For example, the social complexity of interacting with adolescent neurotypical peers, and the potential difficulties of managing a highly varied timetable can be stressful, potentially resulting in academic under-achievement (Ashburner, Zivani & Rodger, 2010). It is also common for autistic children to be the victims of bullying by non-autistic peers (Rowley et al., 2012; Zablotsky et al., 2013). Furthermore, bullying may be more prevalent than originally thought,

as autistic children may not recognise the abstract category of 'bullying' when asked directly. Instead, when presented with a list of concrete behaviours, the number of autistic children who described being bullied rose to twice that of a neurotypical comparison group (Humphrey & Symes, 2010).

Despite these challenges, research has also found evidence of the benefits of an inclusive placement. Students with disabilities in inclusive mainstream settings have been shown to be more frequently defended against bullying by their peers (Bunch & Valeo, 2004), and to have higher levels of pro-social behaviours (Osborne & Reed, 2011). It has been suggested that autistic girls are likely to be more socially included through developing friendships with neurotypical peers who act as social gate-keepers (Dean et al., 2014). There is also evidence for academic improvements alongside social benefits for autistic young people who move from a special school setting to a mainstream school, which were recognised by the adolescents themselves, their parents, and their teachers (Frederickson, Dunsmuir, Lang, & Monsen, 2004).

## **1.4 Gender differences in autism**

### **1.4.1. Presentations of autism across gender.**

There is a growing interest amongst both researchers and the autism community in how autism may present differently between men/boys and women/girls, and this is reflected in the increasing number of studies focusing on girls and women (e.g., Mandy & Lai, 2017). Emerging work on gender differences in autism has suggested that girls differ significantly from boys in terms of core autistic features, and although the precise nature of these differences and the impact on identification and support remain largely unclear, what is known to date will be discussed here.

Autistic girls may be more likely to have apparently typical social development (Bauminger, Solomon, & Rogers, 2010) because they may be more skilled at imitating the social behaviours of their peers, such as engaging in co-operative and pretend play (Kopp & Gillberg, 2011). Autistic girls have been found to have higher levels of social reciprocity than autistic boys, largely because they were more responsive to the researchers' social cues, although they were qualitatively different to their neurotypical female peers, displaying fewer turn-taking behaviours (van Ommeren, Koot, Scheeran, & Begeer, 2017). There is also evidence that autistic girls as young as 7 years of age develop compensatory behaviours to help them appear neurotypical (often known in autism research as 'camouflaging' (Lai et al., 2016), such as moving between social groups and activities, to help them to hide their social challenges (Dean, Harwood, & Kasari, 2017). Further, autistic girls may have superior social skills to autistic boys, such as being capable of more complex imitation (Hiller, Young, & Weber, 2014), and being more socially co-operative (Mandy et al., 2012). These skills, however, also mean that the social isolation of girls is less obvious, being more akin to neglect than active rejection (Dean et al., 2014).

Regarding the non-social features of autism, researchers have also found that autistic girls tend to have restricted and repetitive behaviours and interests (RRBIs) that are less noticeable than those of their male peers. For example, autistic girls appear to develop intense interests in areas which are considered typical for their age and gender, such as a focus on soft toys, fiction, or make-up tutorials (Sutherland, Hodge, Bruck, Costley, & Klieve, 2017), and to have lower levels of RRBIs generally (Frazier & Hardan, 2017; Hattier, Matson, Tureck, & Horovitz, 2011; Hiller, Young, & Weber, 2016). These findings suggest that, from a young age, autistic girls might be less likely to be referred for diagnosis, as their social skills and special interests may not raise sufficient concerns to warrant referral for an autism diagnosis.



This process, by which girls are felt to be less disruptive and therefore less in need of a diagnosis or access to support and services, is typified by the differences in internalising and externalising behaviours which have been found, and contributes to their being diagnosed later than their male peers (Dworzynski et al., 2012). Girls on the autism spectrum are more likely to internalise their problems, resulting in high levels of anxiety and depression (Solomon, Miller, Taylor, Hinshaw, & Carter, 2012) relative to neurotypical girls and boys, and even relative to boys on the spectrum. This internalisation may mean that they also have fewer externalising behaviours than autistic boys, such as anger issues or disruptive behaviours, although research has found similar levels of emotional and behavioural problems on parent-rated measures (Pisula et al., 2017). These less obvious behaviours contribute to making autistic girls less visible in classrooms or at home, and so contributes to their being less likely to be referred for assessment or to reach diagnosis.

*Camouflaging* is typically discussed as the ability to consciously ‘mask’ the diagnostic features of autism (i.e., to have an observed ‘external’ symptom level which is significantly less than ‘internal’ status: Lai et al., 2016), and is thought to be more common in girls, possibly contributing to their lower diagnosis rates (Ashton-Smith & Gould, 2011). Camouflaging has been found at higher levels in both young people (Dean, Kasari, & Harwood, 2017) and adults, (Lai et al., 2011; Lai et al., 2017). Qualitatively, autistic women (and men) report camouflaging as a way to appear ‘normal’ (Hull et al., 2017).

#### **1.4.2. Gender differences in friendships in autism.**

There are recognised gender differences in the nature and features of friendships in the neurotypical population, and given that it has been shown that autistic people follow typical gender difference patterns in areas such as ToM ability (Hull, Mandy, & Petrides, 2016), one might also expect to find gender differences in the friendship experiences of autistic young people. Differences in the friendship experiences of autistic boys and girls are perhaps

unsurprising, given that it is well known that neurotypical girls and boys have distinct friendship experiences, as discussed above. There is evidence of variation in social motivation, and social skills, among other participant groups, particularly variation by gender. Head, McGillivray, and Stokes (2014) found that autistic girls aged 10-16 years scored significantly higher on the Friendship Questionnaire – with higher scores representing better friendships – than autistic boys and, furthermore, scored similarly to boys *without* autism. This finding was supported by parental reports of the children’s relationships, suggesting that autistic girls have better social skills and higher social motivation than autistic boys. Similarly, when examining children’s friendship patterns, Dean et al. (2014) showed that autistic boys were more likely to be actively excluded and rejected by their peers, whereas autistic girls were more connected and had higher levels of social motivation, as indexed by a greater number of bids for social interaction during the observation period. Girls with autism also had mostly neurotypical female friends, while boys with autism were generally rejected by neurotypical boys. The authors suggested that the neurotypical friends of autistic girls helped to prevent their active exclusion from social networks, allowing them to maintain their greater connectedness and number of relationships.

Gendered patterns of social development might also be true for children on the autism spectrum (Kreiser & White, 2014). It has been found that girls on the spectrum have more complex language use when compared to age- and IQ-matched boys on the spectrum (Goddard, Dritschel, Robinson, & Howlin, 2014). Also, girls with autism tend to have intense interests that revolve around people/animals rather than objects/things and are more similar to those of same-age and gender peers (e.g., celebrities, pop music, drawing) (Attwood et al., 2006). Their imaginative play also appears to be more gender-typical than that of boys with autism (Knickmeyer, Wheelwright, & Baron-Cohen, 2008; Kopp & Gillberg, 1992). Such differences

could have knock-on effects for their later interactions with their neurotypical peers, which may make it more likely for girls to be able to engage effectively with their peers.

In a preliminary study, Sedgewick, Hill, Yates, Pickering, and Pellicano (2016), in a paper that directly addressed similar research questions to those explored in this PhD, considered social motivation, friendship ratings, and friendship experiences as a function of gender and diagnostic status (i.e., whether the participants were autistic or non-autistic). Forty-six participants aged between 12 and 16 were included, including 13 autistic girls, 13 non-autistic girls, 10 autistic boys, and 10 non-autistic boys. They completed the Friendship Qualities Scale (FQS) (Bukowski, Hoza, & Boivin, 1994), a short questionnaire that has often been used to measure friendship quality in autistic children (Calder et al., 2013; Laugeson, Frankel, Mogil, & Dillon; Locke, Ishijima, Kasari, & London, 2010). It asks adolescents to rate how true a range of statements are about them and their best friend, and a semi-structured qualitative interview about their friendships, including questions such as ‘What do you do with your friends?’ and ‘How do you know when someone is your friend?’. Teachers completed a Social Responsiveness Scale 2<sup>nd</sup> Edition (SRS-2) (Constantino & Gruber, 2012) about each child, rating their perceived social skill and social motivation.

Adolescent boys and girls on the autism spectrum differed with respect to their peer relationships, particularly in regard to their experiences of conflict within these relationships, with girls having closer and more secure friendships than boys, but also experiencing more conflict. Teachers reported that the autistic girls in their classes had fewer social difficulties on the SRS-2, and higher levels of social motivation than the autistic boys, and were rated more similarly to the non-autistic adolescents. The reduced social motivation seen in the autistic boys in this study is consistent with other research which showed that (mostly male) adolescents on the autism spectrum report lower scores on the Friendship Motivation Questionnaire (Richard

& Schneider, 2005), suggesting that they have lower levels of internal motivation for initiating and maintaining friendships (Whitehouse, Durkin, Jaquet, & Ziatas, 2009).

In contrast to the autistic boys, autistic girls rated their friendships similarly to non-autistic girls on all FQS subscales except the Conflict dimension, on which they reported lower levels than non-autistic girls. This finding was despite these same girls' qualitative responses in semi-structured interviews revealing equal or sometimes greater levels of conflict in their relationships. This latter finding supports earlier research suggesting that autistic children may not recognise conflict or bullying in the same way as neurotypical children (Humphrey & Symes, 2010). It may also be linked to the type of conflict the girls were experiencing. Whereas boys identified incidents of physical (overt) conflict, girls talked about relational conflict (falling out with friends or gossiping), findings that parallel the nature of the conflict present in typically developing peer relationships (Aukett, Ritchie, & Mill, 1999; Lagerspetz, Bjorkvist, & Peltonen, 1988; Nichols, Moravcik, & Tetenbaum, 2008).

The autistic girls in this sample talked about how their friendships were focussed on other people (i.e. what they had been doing, what they liked) rather than on actions or objects (i.e. games or lessons) as the autistic boys described. This suggests that the girls were more interested in people generally, and engaging with those people socially, than the autistic boys in the study. Head et al. (2014) also reported that autistic girls showed greater interest in the relationships of other people, as well as in their own direct relationships with others, compared with autistic boys. These findings resonate with work reporting that autistic children (mostly boys) are more likely to focus on 'active' rather than 'affective' components of relationships (Bauminger & Kasari, 2000). They also support one of the few existing studies in this area, which found that autistic girls showed different friendship patterns to autistic boys, such that they were more included in classroom social networks with their neurotypical same-gender peers (Dean et al., 2014). Together, these preliminary findings suggest key differences in the

sociability of adolescent boys and girls with autism. Some authors suggest that social motivation, which drives human behaviour, is fundamentally diminished in autism (Chevallier, Kohls, Troiani, Brodtkin, & Schultz, 2012). The results of Sedgewick et al.'s paper, however, clearly suggest that this reduced social motivation theory of autism cannot apply to all autistic individuals, and especially not to adolescent girls (and therefore potentially also adult women on the autism spectrum).

Critically, these findings also highlighted that autistic girls' perceptions of their friendships were more like those of the non-autistic girls and boys than the boys with autism. Autistic girls had very similar scores on the FQS for most friendship dimensions, and were just as likely to partake in "girl talk" (conversation focused on stereotypically female interests such as boys, fashion and shopping) as the non-autistic girls. This clearly shows that the degree of sociability and nature of social relationships might be qualitatively different in boys and girls with autism – at least during adolescence. This may be one factor that further contributes to the established pattern of girls being clinically identified later than their male counterparts (Begeer et al., 2013; Giarelli et al., 2010) or why they might slip 'under the radar' all together (Dworzynski, Ronald, Bolton, & Happé 2012).

One key difference between girls with and without autism related to the extent and nature of conflict experienced in their friendships. On the FQS, girls with autism reported significantly less conflict in their best-friendships than girls without autism but did discuss many instances of what can be termed as 'relational conflict' (Nichols, Moravcik, & Tetenbaum, 2008), including gossiping, interfering in relationships, excluding individuals socially and 'stealing' friends. This discrepancy between the quantitative and qualitative data *and* their apparent lack of understanding of this conflict in the interviews suggested that autistic girls might not necessarily be able to recognise conflict in their relationships and/or be able to manage such conflict in the same way as non-autistic girls. The existence of relational

aggression, at different levels, within both autistic and non-autistic girls' friendships emphasises the argument that girls' friendships generally may be more similar to each other and to those of neurotypical girls than they are boys (with or without autism diagnoses). Although girls' greater interest in others might enable them to initiate social contact and make friends with others, core social and communication difficulties could mean both that they struggle to respond to subtle social nuances (Dean, Adams, & Kasari, 2013) and that they are an 'easy target' for relational conflict – all of which could contribute to their greater susceptibility of being 'socially neglected' rather than actively rejected in the same way as some autistic boys (Dean et al., 2014).

Despite the importance of the findings of this study, there were some limitations. First, the sample was small, and, although there is parity with previous findings (e.g., Head et al., 2014), more work is needed to determine the extent and nature of gender differences in autistic adolescents' friendship experiences. It also focused on adolescents in a specialist setting. Many autistic adolescents are in mainstream rather than special schools – approximately 70% of students (Department for Education, 2014) – and so it is unclear whether these findings also reflect the friendship experiences of autistic adolescents attending mainstream education. Having been carried out in a special school setting, the comparisons were drawn between adolescents with autism and those with other developmental disorders, meaning that conclusions cannot be drawn from it as to the similarities and differences between autistic and neurotypical adolescents. Second, while the mixed-methods approach utilised in the preliminary work was invaluable in revealing the mismatch between autistic girls reported and experienced levels of conflict, the study used a limited range of quantitative data, as the adolescents completed just one measure of friendship quality, and teachers completed only one measure of social skill and motivation. Multiple measures – assessing adolescents' friendship experiences, taken from multiple informants – should be used to provide a more robust

assessment of their capabilities and challenges and a broader understanding of their social experiences. Third, this study also lacked any parental input, meaning that the assessment was limited to the school setting (e.g., the SRS-2 is completed by teachers only) and there was a lack of a broader overview of participants' social skills and friendship experiences.

In sum, little is known about the extent and nature of conflict in the peer relationships of autistic adolescents who attend mainstream settings; a setting in which forms of conflict, (such as bullying and relational aggression), are more likely to occur, particularly for children with additional needs (Thompson, Whitney, & Smith, 1994). Girls in general are more likely to be exposed to relational aggression, rather than physical bullying (Bowie, 2007; Crick & Grotpeter, 1995). Sedgewick and colleagues' (2016) findings show that this may be the hardest form of conflict for girls on the spectrum to recognise, respond to, and recover from. Yet, as autistic girls are likely to be in mainstream settings (due to the behaviours they exhibit being less disruptive and therefore less likely to result in their being removed from mainstream schools) (Dworzynski et al., 2012), this relational conflict is likely to make up the majority of what they are exposed to.

### **1.7 Friendship and conflict**

Conflict between peers can have a negative impact on children's lives, with bullying being a particularly significant and clear example. It can reduce their self-esteem (O'Moore & Kirkham, 2001), and affect their educational engagement and achievement (Beran, Hughes, & Lupart, 2008; Rothon, Head, Klineberg, & Stansfeld, 2011).

While being bullied, or the subject of aggression from peers, is distressing for any child or young person, there is some evidence that girls are more affected by these experiences and spend more time ruminating on them (Paquette & Underwood, 1999). These can have a significant impact on self-concept, especially if girls are the subject of social aggressions such as being gossiped about (Paquette & Underwood, 1999). Boys are more likely to engage in

direct or overt aggression, which can lead to externalising maladaptive behaviours, whereas indirect or social/relational aggression is associated with internalising problems and more prosocial behaviours as the (generally female) victims attempt to mollify their aggressors by being kind towards them (Card, Stucky, Sawalani, & Little, 2008).

### **1.7.1 Bullying in autism.**

There is significant evidence that autistic children are more likely to be bullied than their neurotypical peers due to their social vulnerabilities (Sofronoff, Dark, & Stone, 2011), with prevalence rates of up to 94% in some studies (Humphrey & Hebron, 2014; van Roekel, Scholte, & Didden, 2010). It is not just traditional forms of bullying to which autistic young people are subjected, with bullying online, through social media, and through mobile phones (known as cyber-bullying) being similarly common (Kowalski & Fedina, 2011). These high rates and variety of forms of bullying have been linked to a range of features of autism. For example, research has shown that aspects of autism such difficulties with social communication and ToM, mental health issues, co-occurring ADHD, whether a child has friends (Cappadocia, Weiss, & Pepler, 2012; Montes & Halterman, 2007), and difficulties with anger regulation (Rieffe, Camodeca, Pouw, Lange & Stockmann, 2012), have all be linked to higher rates of bullying of autistic young people (see Schroeder et al., 2014, and Sreckovic, Brunsting, & Able, 2014, for reviews).

Interestingly, autistic children with higher levels of social skill may be more likely to be bullied (Rowley et al., 2012). This is possibly because having fewer social difficulties generally leads to peers having higher expectations, which an autistic child is then ‘punished’ for failing to meet. This explanation seems especially probable in light of other research which has shown that autistic children and young people are more likely to be bullied than children with intellectual disability (Zeedyk, Rodriguez, Tipton, Baker, & Blacher, 2014). There is some disagreement in the literature as to whether autistic children are bullied more than children with



other SEN conditions. One study has found that they are bullied more than children with non-autism developmental conditions, where a variety of conditions were represented in the sample (Kloosterman et al., 2013), although another study found that autistic children were bullied at similar rates to children with Down's Syndrome and William's Syndrome (Fisher, Moskowitz, & Hodapp, 2013). It is also the case that autistic young people who display more internalising behaviours (such as being quiet or anxious) are more likely to be bullied than those who display externalising behaviours (such as difficulties with anger management) (Zablotsky, Bradshaw, Anderson, & Law, 2013), which is key since autistic girls are likely to be anxious and to internalise their difficulties. Appearing more socially able, both through camouflaging behaviours and the natural differences between autistic boys and girls above, means that autistic girls may be particularly vulnerable to being bullied by their neurotypical peers.

It is also possible, however, that some autistic children and young people misinterpret non-bullying behaviours as bullying, and this is particularly likely amongst those who have poorer ToM ability, who feel more victimised by their peers (van Roekel, Scholte, & Didden, 2009). This possibility is pertinent as autistic young people who feel they are supported by their friends and peers also report being bullied less, but autistic young people in general have low levels of trust in other people because of difficult peer interactions in the past (Humphrey & Symes, 2010a). This low level of trust in peers is reasonable, as autistic young people can struggle to identify when they are being lied to, which leaves them vulnerable to manipulation and bullying, although the same study found some evidence that this skill can be learned (Ranick, Persicke, Tarbox, & Kornack, 2013). Friendships and social support from peers has consistently been shown to be a protective factor against bullying, and this has been examined in autism research (Boulton et al., 1999; Humphrey & Symes, 2010). As such, this potential distrust of others by young autistic people is something which should be targeted for

intervention, as it effectively denies them a shield against the behaviours that they are trying to avoid.

How autistic children respond to bullying has also been studied (Cappadocia, Weiss, & Pepler, 2011; Fisher & Lounds-Taylor, 2015; Humphrey & Symes, 2010), although most of this work has, once again, been carried out with all- or majority-male samples, meaning that the findings may not be representative of autistic girls' experiences. For example, boys in one study tended not to tell teachers at school about their bullying experiences, but instead they would hold on to their frustration and upset until they got home and then adopt a range of behaviours, from tantrums to isolating themselves, with over half becoming school refusers to avoid their bullies (Bitsika & Sharpley, 2014).

### **1.7.2 Conflict with friends/relational aggression.**

Although there is a wealth of work on bullying (Hong & Espelage, 2012), little research has been conducted on the impact of conflict *within* the friendships and peer relationships of autistic children and adolescents. This conflict within friendships is also known as 'relational conflict' or 'relational aggression' (Murray-Close, Ostrov, & Crick, 2007). This type of conflict is more commonly associated with girl-girl relationships and includes the stereotypical vindictive behaviour of teenage girls – gossiping, spreading rumours, and isolating both individuals and small groups. These behaviours can have negative impacts similar to those of more overt bullying but critically, take place within relationships typically categorised as 'friendships'. This categorical (friends, who are usually nice to you) and behavioural (someone being unpleasant or bullying) mismatch can lead to difficulties for any adolescent who must try to make space for mean behaviours within the concept of a 'friend', but may be especially puzzling for teenagers on the autism spectrum. Research has highlighted how the nature of gender differences in friendship networks, as described above, plays into the frequency of relational aggression and the significant impact it has on girls' friendships, as these tighter and

more intimate relationships can be more easily manipulated and exploited (Lagerspetz, Bjorkvist, & Peltonen, 1988). The challenges of friendship formation and maintenance may be especially significant for autistic girls, who are potentially more likely to experience relational conflict than autistic boys, just as neurotypical girls are more likely to experience relational conflict than neurotypical boys (Bowie, 2007). Little is known, however, about the friendship experiences of autistic girls and the instances of relational conflict within these experiences.

For autistic adolescents, who can struggle to understand unwritten rules, especially in relation to complex social situations in secondary school, the stereotypical vindictive relational aggression of girls may be particularly difficult with which to comprehend and cope. Such behaviours require a flexible approach to friendship, which may be challenging for autistic adolescents. Indeed, it has been shown that autistic adolescents can have a ‘fixed’ and ‘active’ definition of friendship, focussed on doing things with someone – “someone you hang out with” (Bauminger & Kasari, 2000; Calder et al., 2013) – rather than emotional closeness, which may leave autistic adolescents vulnerable to social manipulation. They may take people at ‘face value’, and so assume that others’ intentions are both consistent and genuine. They might also be less likely to have supportive friends who can act as a social feedback system as to whether particular behaviours or interactions are appropriate (Steward, 2013).

As this PhD examined similar aspects of autistic young peoples’ lives to Sedgewick et al (2016), in terms of asking about friendships, conflict, and how they manage their relationships, I sought to overcome difficulties with the definition of bullying by asking not only what they thought of their friends, or what they thought a friend was, but also asking for examples of specific incidents with peers. This allowed me to investigate not only their conceptual knowledge of friendship, but also the everyday, practical experiences autistic young people had with their peers. I did this through the use of a critical incident interview portion (Flanagan, 1954), which will be outlined in more detail in Chapter Two.

## **1.8 Mechanisms potentially underlying conflict**

As well as examining the potential presence of difficulties with social relationships and exposure to relational conflict within the friendships of autistic girls, the research presented in this thesis sought to identify the impact of three factors – social awareness, self-regulation, and anxiety – on the levels of social challenges participants were experiencing. It is essential to discover and examine relationships between different factors that are recognised as impacting on the formation and maintenance of positive social relationships, particularly in a group of autistic participants. This may help to elucidate which aspects of individual differences support autistic adolescents, and autistic girls in particular, to be socially successful.

### **1.8.1 Social awareness.**

Limited social awareness, a key characteristic of autism (APA, 2013), may be one factor underlying problems in social relationships. This could be because autistic individuals' difficulties in appreciating and predicting the mental states of others – 'theory of mind' (ToM) (Baron-Cohen, Leslie, & Frith, 1985) – might be related to disagreements within friendships. For example, an inability to understand another's point of view is likely to lead to difficulties in compromising or reconciling, leading to conflicts both occurring and failing to be resolved. As understanding and responding to the thoughts and emotions of others may have an impact on autistic adolescents' relationships, difficulties in social awareness are a crucial consideration. Neurotypical teenage girls have been found to be more involved than boys in others' problems, and to have a stronger caring orientation (Gore, Aseltine Jr, & Colten, 1993). This greater involvement means that girls might be more likely to be aware of, and involved in, relational aggression, as they make more use of it in their friendships. This gendered pattern is likely to also be found in autistic adolescents, as Kothari et al (2013) found that in a community sample, girls with high levels of autistic traits were better at an emotion recognition task than boys with similar levels of autistic traits. While one study found no relationship

between ToM and friendship experiences (Calder et al., 2013), this used a simple measure of false-belief understanding, rather than an enriched measure of social awareness.

Many of these problems with social relationships and social understanding have been thought to stem from underlying ToM difficulties (Baron-Cohen, Leslie, & Frith, 1985). ToM is the understanding that other people can have thoughts, knowledge, and motives that differ from one's own (and also to reality), and that these impact on their behaviour and interactions with others. Any difficulty in attributing alternative other motives to someone else can result in social difficulties because it becomes harder to understand what other people are doing and why, and harder to predict how they will behave towards you, or how you should behave towards them.

ToM has been shown to be present at lower levels in autistic people in a wide range of studies, using people of all ages and with a variety of measures (Baron-Cohen, 2000; Hughes & Leekam, 2004). The proposition of the original theoretical paper (Baron-Cohen, Leslie, & Frith, 1985) was tested using the 'Sally-Anne Task', where the participant watches a story about Sally and Anne, two dolls who are playing with a ball. Having put the ball in a box, Anne leaves the scene. Sally then moves the ball into a basket, and when Anne returns, the participant is asked where Anne will look for the ball. Neurotypical participants from the age of around 3 or 4 tend to respond that she will search in the box, as that is where she last knew it to be. In contrast to this, many autistic people will respond that she will search in the basket, as that is where they know it to be (and where it really is) (Happé, 1994). These ToM difficulties often extend into adulthood, and demonstrate that autistic people are relying on their knowledge rather than 'putting themselves in the shoes of the other person'. This is obviously a key skill in developing and maintaining social relationships, as understanding what another person is thinking or going through is essential to building rapport and understanding their reactions.

There is some debate as to the validity of false belief tasks (Bloom & German, 2000), as they often rely on linguistic and executive function abilities. Autistic people with good verbal ability have been shown to pass ToM with a high verbal component (Happé, 1994), some work has found that these effects persist even in ToM tasks which do not measure false-belief understanding. For example, difficulties with ToM have also been seen in more advanced tasks such as the ‘Reading the Mind in the Eyes’ test (Baron-Cohen, Jolliffe, Mortimore, & Robertson, 1997), where participants are asked to select which emotion a photo of black-and-white eyes are showing from a set of four. This is considered to be a more advanced test because it uses images of real humans, rather than cartoons or dolls, and because the emotions in the test are relatively complex (such as ‘desire’, ‘disgust’ and ‘tiredness’) (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001). Autistic people are less accurate at this test than neurotypical individuals, suggesting that along with difficulties in assigning motives to others, they may struggle with reading the emotional output of the people they are interacting with. This again makes social relationships more difficult, as understanding the emotional state of the person you are talking to helps to make sense of the meaning of their words, and again allows you to predict what best to say to maintain a positive relationship rather than antagonising them or coming across as insensitive. Anecdotally, many autistic adults report being told that they are ‘too blunt’ or ‘say the wrong thing’ because of this difficulty with reading and responding to emotional states, as they respond to what people are saying literally rather than interpreting it in light of the emotional context (Mitchell, Saltmarsh, & Russell, 1997).

Another common feature thought to be associated with autism is a lower level of social motivation (relative to neurotypical individuals) (Chevallier et al., 2012). Autistic individuals are thought to be fundamentally less interested in other people and in making and maintaining relationships with them. Research with very young babies who have siblings with autism has

shown that those who go on to be diagnosed as autistic themselves are less engaged with faces and face-like images as young as 15 months of age (Klin & Jones, 2008; Sasson, 2006). This topic of research has been extended to children and adults, often using the Social Motivation subscale of the Social Responsiveness Scale (2<sup>nd</sup> Edition) (SRS-2; Constantino & Gruber, 2002). The SRS-2 is a 65-item questionnaire which asks parents to rate the frequency of behaviours of their child, or adults to rate their own behaviours, over the last six months. These ratings correspond to different subscales of behaviours associated with autism, such as Communication difficulties or Restricted and Repetitive Behaviours and Interests (RRBIs). These studies have found that autistic children are rated as significantly less socially motivated than their neurotypical peers (Chevallier, Kohls, Troiani, Brodtkin, & Schultz, 2012) and that autistic adults rate themselves as less socially motivated and more socially impaired than neurotypical adults (Orsmond, Krauss, & Seltzer, 2004). This is not, however, a universal finding. Adult autistic women in particular have reported finding other people fascinating, and desperately wanting to make friends and fit in, despite struggling to do so (Kanfischer, Davies, & Collins, 2017).

It is worth noting that ToM has recently been shown to be a ‘two-way’ issue, described by autistic scholar, Damian Milton (2012), as the ‘double-empathy problem’, which holds that the apparently instinctive empathy of neurotypical people is not applied when it comes to autistic people. Neurotypical people are less accurate at interpreting the emotions displayed by autistic people (Brewer et al., 2015), and say that they are less likely to want to socialise with autistic people based on brief video exposures (Sasson et al., 2017). This emphasises that difficulties with autistic-neurotypical interactions are not simply due to the autistic person struggling to engage ToM, but that both parties involved may be making mistakes which contribute to an awkward situation overall. That these difficulties are not just due to the autistic person ‘getting it wrong’ is supported by work from Heasman and Gillespie (2017), which

showed that social misunderstandings are often in both directions and with both autistic and neurotypical parties.

### **1.8.2 Self-regulation.**

Self-regulation is an individual's ability to recognise, control, and co-ordinate their behavioural responses to both external situations and internal emotions (Baumeister & Heatherton, 1996). It can be measured through both the ability to control one's emotions, and through one's coping skills. The ability to regulate one's emotions and behaviours could have a significant impact on relationships (Gross & John, 2003), as it allows reactions to be tailored to be appropriate for different social situations. It has been found that among neurotypical college students, better emotion regulation abilities are associated with more reciprocal friendships and better interpersonal sensitivity ratings (Lopes, Salovey, Coté, Beers, & Petty, 2005). In typical teenagers, greater levels of emotion dysregulation have been linked to increased anxiety and increased aggression (McLaughlin, Hatzenbuehler, Mennin, & Nolen-Hoeksema, 2011). These elements are likely to impact on conflict within relationships, although this has not been directly studied. In boys with Attention Deficit and Hyperactive Disorder (ADHD), individuals with avoidant emotional coping styles and higher levels of aggression were significantly less peer-preferred, and the ability to control the behaviours arising from strong emotion was more important than the strength of the emotion felt (i.e., it didn't matter how angry they were, it mattered whether they hit someone) (Melnick & Hinshaw, 2000). These findings suggest that the ability to regulate one's emotions can have a significant impact on friendship formation through determining whether peers want to engage with an individual.

The ability to cope with stress is also partly determined through controlling one's responses to that stressor, and maladaptive coping styles and strategies may have a significant negative impact on adolescents' relationships. For example, maladaptive coping behaviours



(such as repeated avoidance) have been linked to poor social functioning in boys with autism (Pouw, Rieffe, Stockmann, & Gadow, 2013), as a child who consistently avoids a difficult social situation cannot begin to develop an effective response. There is some evidence that autistic children as young as 5 years old display significantly more negative emotions and fewer constructive strategies to deal with frustration (Jahromi, Meek, & Ober-Reynolds, 2012) but there have been no studies investigating the relationship between emotion regulation difficulties and conflict management within relationships. Recent research has, however, shown that autistic adolescents with worse emotional regulation skills are lonelier, a relationship which is partially mediated by having strong friendships (Lieb & Bohnert, 2017).

### **1.8.3 Anxiety.**

Following from the earlier discussion of anxiety as a commonly co-occurring condition with autism, it is important in the context of my PhD to consider the impact of anxiety on friendships. Anxiety can be a key predictor of the friendship outcomes for adolescents. Research has found that the more anxious an individual, the less popular they are (Van Zalk, Van Zalk, Kerr, & Stattin, 2011). It is also the case that anxious teenagers tend to focus on gaining help from their friends rather than focusing on reciprocity. This self-focus could potentially hinder the friendships of those with high levels of anxiety, as they place significant demands on their peers while offering unequal levels of support in return (Schneider & Tessier, 2007). Indeed, adolescents with higher levels of anxiety have been found to be more socially withdrawn and to have higher levels of peer difficulties than neurotypical participants (Rubin, Coplan, & Bowker, 2009). Further, individuals with more social communication difficulties have higher levels of social anxiety, a relationship which is stable from the ages of 7 through 13. However, this correlation is not reversed, suggesting that communication difficulties ‘come first’ in the autism-anxiety relationship (Pickard, Rijdsdijk, Happé, & Mandy, 2017). Interestingly, Pickard and colleagues found no gender differences in the relationships between

communication difficulties and social anxiety, but girls were still more anxious than boys. This result suggests that social anxiety may be significantly impacting on autistic girls in their everyday lives.

Anxiety rates have been shown to be significantly higher in autistic participants relative to neurotypical counterparts, who also had fewer and poorer quality friendships (Mazurek & Kanne, 2010). While this is an important finding, this study was carried out with an 86% male sample with an average age of 9.1 years, which means that the results may not be directly applicable to an adolescent and gender-balanced sample. Further research has found that higher anxiety is linked to lower social relationship quality in autistic adolescents, and is also correlated with lower levels of autistic symptomatology (Eussen et al., 2013). This finding may be particularly relevant in terms of autistic girls, who are likely to have lower levels of visible behaviours and to be more anxious. Autistic females may be likely to have high anxiety because in typical populations, the lifetime prevalence of social anxiety is found at a slightly higher rate in women than men – 15.5% to 11.1% (Weinstock, 1999). Combined with the fact that autistic individuals are also likely to have higher levels of anxiety than neurotypical individuals, it is likely that autistic girls, who fit into both categories, would have higher levels of anxiety than all other groups. If this is the case, then their peer relationships may be most affected by social anxiety. However, this relationship has not previously been studied.

These three constructs (social awareness, self-regulation, and anxiety) are all potential predictors of friendship strength and conflict within friendships, as they all impact on how individuals perceive or respond to their friends and wider peers. Therefore, I will investigate their relationships to these outcomes, and their possible predictive strength, in Chapter Three.

## **1.9 Development into adulthood**

### **1.9.1 Adult outcomes in autism.**

Most of the research on adult outcomes for autistic people has suggested that there are low rates of independent living (Howlin, 2000); low rates of employment (Taylor, Henninger, & Mailick, 2015; Wei, Wagner, Hudson, Yu, & Shattuck, 2015); high levels of physical and mental health difficulties (Eaves & Ho, 2008); and low levels of involvement in serious romantic relationships (Howlin, 2013; Howlin, Mawhood, & Rutter, 2000). There has also been research showing that autistic adults experience high levels of isolation, partly due to their lack of employment and the independent living skills to engage in social activities (Howlin, 2000).

These traditional outcome measures paint a bleak picture of adulthood for autistic people, suggesting that they will be lonely, dependent on their parents (or assisted housing), and unemployed. However, this is not the case universally. It should be noted that today's generation of autistic adults are likely to have been diagnosed in the 1960's, 1970's and 1980's, under a set of diagnostic criteria that only recognised the more obvious presentations of autism, with more severe intellectual and verbal difficulties (Billstedt, Gillberg, & Gillberg, 2005). Indeed, it was only in 1979 that Wing and Gould suggested the 'triad of impairments' and the concept of an autism spectrum (Wing & Gould, 1979). In recent years, clinicians have begun to recognise and diagnose those individuals who are on the autism spectrum but without concurrent learning disabilities, or who present atypically. Looking at the outcomes of adults who had been diagnosed in the 1960's to 1980's, Levy and Perry (2011) found that 78% of cases had 'poor' or 'very poor' outcomes (defined as little to no independent living or social progress, and/or severe handicap), around 94% the participants in the sample also had severe or moderate mental retardation on the Vineland interview.

There has been a wealth of research on whether autistic behaviours increase or decrease with age, with mixed findings overall. Amongst individuals with lower IQ or learning

disabilities, the general trend seems to be for increasing behavioural problems through adolescence and into adulthood (Billstedt, Gillberg, & Gillberg, 2007; Howlin, Goode, Hutton, & Rutter, 2004). More relevant to the current study, however, is the observed trend amongst individuals on the autism spectrum and with average or above-average IQ to show a reduction in RRBI's, a reduction in challenging behaviours, and improvements in communication skills and social interactions as they mature from mid-adolescence onwards (McGovern & Sigman, 2005; Seltzer et al., 2004). These cognitively able individuals are also more likely than those with intellectual disability to have 'good' or 'fair' social outcomes, defined in terms of their education level, employment, degree of independent living, and engagement in social relationships (Cederlund et al., 2008; Gilchrist et al., 2001; Szatmari et al., 1989). Despite cognitively able individuals being more likely to have 'good' outcomes, however, others in this group can still show poor outcomes (Howlin, 2004). This finding highlights that there is much variability in this group regardless of their cognitive similarities, which might be expected to contribute to more similar life outcomes.

In some individuals who are seen as having 'optimal outcomes' (i.e. being in employment and maintaining serious romantic relationships), the reduction in visible autistic behaviours can be to the extent that they 'fall out' of the diagnostic criteria altogether (Helt et al., 2008). It should be emphasised, however, that these individuals still have an autistic neurotype, but are considered cognitively able and functioning independently in their everyday lives. This may be especially the case for adult autistic women, who are most likely to present 'atypically' (Gould & Ashton-Smith, 2011). This atypical presentation is often defined through lower levels of RRBI's, better communication skills, better social interaction skills, and more successful social relationships – all aspects which have been discussed as typifying the female presentation of autism. This atypical presentation may contribute to the difficulties adult autistic women report in attempting to get a diagnosis in later life (Bargiela, Steward, & Mandy,

2016), as they have had to learn to function in society without the support that a diagnosis would have entitled them to. Therefore, they may develop more compensatory behaviours than men who are more likely to have received a diagnosis in childhood.

More recent research has focussed on the life circumstances and experiences of autistic adults, especially on assessing quality of life (defined as subjective satisfaction with current life circumstances) rather than taking more traditional, objective measures of independent living skills. Some studies have found that autistic adults have lower quality of life across the lifespan than their neurotypical peers across a range of measures (Jennes-Coussens, Magill-Evans, & Koning, 2006; Kamio, Inada, & Koyama, 2013; van Heijst & Geurts, 2015). Other studies have found that even amongst a cohort who have relatively high dependence on their parents and caregivers for support, general quality of life was positive and individuals were satisfied with their life circumstances (Billstedt, Gillberg, & Gillberg, 2011). Quality of life seems to be most strongly related to IQ level, severity of autistic symptomatology, and the level of support available to the individual (Renty & Roeyers, 2006). This relationship between support and quality of life has been found especially to be the case for those who are in supported employment or who access social support programmes (García-Villamizar, Wehman, & Navarro, 2002).

Research on quality of life, and wider outcomes, in autistic adults has generally used entirely or mostly male samples, meaning that the results may not be representative of the experience of adult autistic women. Considering this gender imbalance, it is notable that there is to date very little research on the quality of life for autistic women specifically, although one paper does highlight that despite the small numbers of women in their sample, there was a trend towards them having better adult outcomes than their male counterparts (Billstedt, Gillberg, & Gillberg, 2005). On the other hand, one recent study found no gender differences in the factors which led to poor psychosocial outcomes in adulthood for autistic individuals (Zimmerman et

al., 2016). This suggests that, even though autistic men and women may achieve different ‘outcome levels’ in adulthood, the factors which facilitate these may be similar regardless of sex or gender.

Adolescents who are currently (or recently) taking part in research will have (likely) been diagnosed since the 1990’s, and since the shift to the recognition of the broader autism spectrum. As such, these samples are likely to include individuals without intellectual disability, who are more representative of the adult women in this research. While studies utilising this participant group have still found some differences in quality of life, such as lower friendship and sexual relationship satisfaction, they found that autistic adolescents were more satisfied with their relationships with parents and teachers, and had better self-image, than neurotypical or diabetic adolescents (Cottenceau et al., 2012). Autistic adolescent males have also been found to have better quality of life than adolescents with Schizophrenic Spectrum Disorder (SSD), a condition where adolescents display a range of symptoms associated with schizophrenia before the usual, early adulthood, onset (Kamp-Becker, Schroeder, Remschmidt, & Bachmann, 2010), and this was significantly associated with adaptive daily living skills, as it has been in other research (Chiang & Wineman, 2014). That the provision of increased opportunities and support systems may result in better adult outcomes in younger cohorts is supported by research: by 24 years of age, half of those diagnosed in the late 1980s and early 1990s had ‘fair’ or ‘good’ outcomes compared to the much lower rates of older participants (Eaves & Ho, 2007).

### **1.9.2 Autistic women in adulthood.**

Very few studies have exclusively used adult women as the focus of their sample – for any area of autism research – which means that an understanding of how autistic women develop into adulthood and how they experience the world is severely lacking. To situate this emerging work within context, I begin by examining some of the pertinent trends in research

with neurotypical women and consider how this knowledge may apply to autistic women as well as discussing research that only uses autistic women in its samples.

Neurotypical women are more likely to be diagnosed with mental health issues than men, and it is reasonable to assume that this gendered pattern would be echoed in the autistic population. As with autism itself, there is likely to be an element of diagnostic bias in this statistic, although the bias runs in the opposite direction (males are more likely to be diagnosed with autism, women more likely to be diagnosed with mood-related mental health issues) (World Health Organisation, 2002). Throughout history, mental illness has been considered a female condition, from diagnoses such as ‘hysteria’ and ‘wandering womb’ to ‘a weakness of the humours’ (Tasca, Rapetti, Carta, & Fadda, 2012). This predilection for seeing women as likely to have mental health issues, combined with women tending to be more comfortable talking about emotional issues, and being more likely to seek medical support (Matheson et al., 2014), has led to an imbalance in mental health diagnosis rates.

Women are more likely to have anxiety (McLean, Asnaani, Litz, & Hofmann, 2011), depression (Nolen-Hoeksema, 2001), eating disorders (Lewinsohn, Seeley, Moerk, & Striegel-Moore, 2002; Striegel-Moore et al., 2009), and personality disorders (Johnson et al., 2003), among other mental health issues. Some work has also examined the rates of mental health issues amongst adult autistic women, and found that these issues are higher amongst this population (Baldwin & Costley, 2016). It has been suggested that mental health diagnoses may occasionally be a case of ‘mistaken identity’, with high rates of autistic traits, at above clinical cut-off levels in some studies, being found in women who are in-patients in eating disorder clinics (Hambrook, Tchanturia, Schmidt, Russell, & Treasure, 2008; Mandy & Tchanturia, 2015; Tchanturia et al., 2013).

One large-scale review paper examined social attention amongst adult autistic women, a feature which is often considered to be crucial in developing social relationships. An understanding of the aspects which contribute to making and maintaining relationships is key in understanding life outcomes for autistic women, as so many of the traditional measures of life outcome consider this to be part of a ‘fair’ or ‘good’ outcome (Howlin, 2000). Recent papers have also explored the experience of receiving an autism diagnosis in adulthood, highlighting the difficulties women face without that sense of self-knowledge, and the relief it can bring once a diagnosis is made clear to them (Bargiela, Steward, Mandy, 2016). Women describe how discovering that they are autistic helps them to understand themselves and the world around them more easily, and gives them the sense that they have not actually been “getting it wrong” throughout their lives, but have instead been trying to take part in a neurotypical world which they are not inherently built to engage with on the same terms (Kanfischer, Davies, & Collins, 2017). Despite these difficulties with understanding (and being understood by) the neurotypical world, autistic women can be highly successful, both on their own terms and by the standards of the neurotypical world (Webster & Garvis, 2016). Indeed, the results of this study, which focused on seven adult women, highlighted that getting a diagnosis, feeling that women were agents of change in their own lives, seeing that others believed in them, and helping others with their experiences helped women to achieve success, develop their self-efficacy, and overcome the obstacles in their lives.

While the experience of receiving a diagnosis can be reassuring for autistic women, they have often faced significant difficulties to get to that point (Bargiela et al., 2016; Webster & Garvis, 2016). That a high proportion of autistic women have experienced sexual assault and domestic violence is beginning to be described in the literature. Bargiela, Steward, and Mandy (2016), for example, found that nine of 14 autistic women talked about having been the victims of sexual abuse, often within the context of relationships or what they thought were friendships.



The women themselves gave several reasons why they thought this happened – that they unconsciously copied the flirtatious behaviour of someone as part of the standard ‘camouflaging’ techniques, that they struggled to understand other people’s intentions towards them, that they did not have neurotypical peers with whom to compare what ‘normal’ behaviours were, that previous social rejection made them ‘desperate’ for acceptance regardless of whether it was genuine, a difficulty with saying ‘no’ to men as they did not know that this was a legitimate option within their learned social ‘rules’, and that they did not know how to make it clear that they were not interested in someone. Yet many women in this study also talked about how they had become more self-assertive in rejecting unwanted advances or leaving uncomfortable situations after reflecting on these earlier negative experiences. Research has shown that being subject to intimate partner aggression has a more negative effect on women than it does on men, even when the violence is at the same level (Williams & Frieze, 2005). This suggests that autistic women are likely to be suffering significantly from these experiences.

Reports have also focused on the multiple forms of vulnerability autistic women face. Robertson et al. (2017) highlighted the difficulties with abuse, assault, mental health, eating disorders, and social isolation experienced by autistic women, according to a mixture of first-hand accounts, clinician reports, and audits of service usage. Elements of all these problems have a major impact on the lives of autistic women, potentially in different ways to how they affect autistic men, who face different social expectations. This is part of the knowledge gap that this PhD sought to address in Chapter Four.

### **1.9.3 Gender differences in relationships in adulthood.**

Similar to the differences found in the friendships of adolescent boys and girls, men and women have been shown to conduct and use their friendships in different ways, with same-sex friendship preferences from childhood continuing into adulthood (Mehta & Strough, 2009).

For example, men tend to maintain large, functional groups whereas women prefer intimate and secure friendships (Vigil, 2007). In terms of social support networks, however, women tend to have a wider pool of people they go to, whereas men rely much more heavily on their significant other for emotional and practical support in times of need (Antonucci & Akiyama, 1987), a pattern also seen in adolescent support networks (Colarossi, 2001).

Consistent with adolescent findings, female friendships focus on and value talking and emotional sharing, whereas male friendships are more likely to be built around shared interests and activities (Caldwell & Peplau, 1982; Hall, 2011). These differences are reflected in the conversational topics of men and women with their same-sex friends, as men say that they are more likely to talk about sports and activities, whereas women report discussing personal matters and world events (Aries & Johnson, 1983). This extra level of emotional sharing may be why women report finding their female friendships particularly strong, stable, and rewarding (Wright & Scanlon, 1991). Despite the stability of these findings cross-culturally, it is also the case that males expect to disclose more of their emotional lives to their same-sex friends as they age, moving to a friendship model that involves more talking (Reisman 1990). Nevertheless, the extent to which adult men's friendships are intimate and supportive is still less than those of women, and this is determined by their levels of emotional restraint and homophobia – suggesting that some men have a fear of developing 'womanly' friendships, especially as this effect was mediated by masculine self-identity (Bank & Hansford, 2000).

Despite the overarching gender-differences in friendships identified, it is worth noting that some academics have made a plea for caution in interpreting results, emphasising that there is a significant degree of within-gender variability that is often overlooked (Wright, 1988). Marital status, for example, often makes a difference to the level of emotional self-disclosure people engage in, with unmarried men telling their friends less about their personal lives than all other groups (married men, married women and unmarried women) (Tschann, 1988). This

is important considering findings from older adults, where commitment to the role of friend was found to be a better predictor of overall well-being than marital status. This suggests that learning to share emotionally can have significant positive impacts for men as well as women (Siebert, Mutran, & Reitzes, 1999). This effect can be seen as early as mid-adolescence, with greater intimacy (i.e. disclosure and trust) being associated with greater friendship satisfaction (Carlson-Jones, 1991).

Conflict patterns are also similar in adulthood, with relational conflict and indirect aggression being most common amongst adult women (Hess & Hagan, 2006). Men, again, move towards this more traditionally ‘feminine’ form of conflict as they get older, utilising more covert aggression tactics (Bjorkqvist, Osterman, & Lagerspetz, 1994). One of the key causes of conflict within other-sex friendships is differing expectations of eventual sexual involvement with the other person (Bleske-Rechek & Buss, 2001), and adults moderate how emotionally intimate they become with other-sex friends depending on their romantic relationship status (Antonucci, Lansford, & Akiyama, 2001). This is perhaps a sensible strategy, as research has shown that both men and women, regardless of sexual orientation, judge emotional infidelity to be harsher and more distressing than physical infidelity (Harris, 2002), with romantic relationships being the most important by early adulthood (Furman & Buhrmester, 1992). It is also the case that even in professional situations, many cross-sex friendships contain sexual tensions, and these can impact on the emotional intimacy experienced by men and women, with men saying they are equally intimate with male as female friends, but women report sharing less with male counterparts (Sapadin, 1988).

These issues – the nature of conflict, how people seek to resolve conflict when it arises, and the changes in relationships over time – have not been examined in autistic adults. Any potential gender differences have also yet to be studied, and although this is beyond the scope of this PhD, I will examine how autistic women make, maintain, and manage their relationships

in Chapter Four. In Chapter Five I will then compare their accounts of their adult relationships, and their recollections of their adolescent friendships, with the current friendships of autistic girls which will be presented in Chapter Two.

### **1.10 Conclusion**

In summary, three key points arise from this literature review. First, there is growing recognition of gender differences within the autistic population, both in adolescence and in adulthood. Second, there are well-established gender differences amongst neurotypical people in terms of social relationships (their formation, their conduct, and their impact on an individual) across the lifespan. Third, there is very little existing research that has examined the nature and extent to which these neurotypical gender differences are seen in autistic males and females, with a paucity of research to date on the friendships of women and girls on the autism spectrum (who have often been subsumed into majority-male participant groups). The research presented in this PhD therefore sought to address this significant gap in knowledge, with Chapter Two addressing whether there are gender differences in friendships of autistic adolescents, and Chapter Three examining which factors might contribute to any differences identified. Chapter Four will then investigate the nature of adult autistic women's social lives, both their friendships and their romantic relationships, and Chapter Five will present a comparison between the discussions of autistic girls and autistic women, along with parental perspectives on change over time in autistic adolescent girls, in order to begin to develop and understanding of the change in autistic females' relationships over time. Understanding the social experiences and relationships of autistic girls and women should help professionals and allies to better support them in their friendships, and potentially to avoid some of the negative outcomes (mental health issues, social isolation, sexual assault), which research has shown autistic women can experience.

In Chapter Two, I will present the findings of the first study of this PhD, which focussed on the friendships and conflict experiences of autistic and neurotypical girls and boys, with the aim of examining whether the gender differences seen in neurotypical populations highlighted in this literature review were also present in autistic adolescents. The study assesses friendship quality and victimisation levels amongst these four groups, both through quantitative and qualitative methods, and analyses the results by gender.

## **Chapter Two: Friendships and conflict experiences of autistic and neurotypical adolescents**

Friendships are crucial to our development as social individuals. They allow us to develop social skills (Cutting & Dunn, 2006; Dunn, 1988; Dunn & Cutting, 1999) and provide critical social and emotional support, thus building resilience (Demir & Urberg, 2004; Dumont & Provost, 1999). Friendships can make us happier and healthier across the lifespan (Antonucci & Akiyama, 1987; Berkman & Syme, 1979), and their absence can lead to adjustment problems (Bowker et al., 2006), the effect of which can be seen into adulthood (Bagwell, Newcomb, & Bukowski, 1998).

As outlined in Chapter One, although autistic children do want and can have stable friendships (Calder et al., 2013; Bauminger & Shulman, 2003), they tend to have fewer friends than neurotypical children, see them less often, and tend to focus on shared activities (Petrina et al., 2014). But the vast majority of research has involved primary-school aged boys, which means we know very little about the friendships of autistic adolescents, and even less about the friendships of autistic girls.

Neurotypical girls reach more complex social and linguistic developmental stages earlier than boys, allowing them to more easily form relationships based on co-operative play and conversation (Barbu, Cabanes, & Le Maner-Idrissi, 2011). These gendered patterns of social development continue into adulthood: women have friendships based on talking and emotional sharing, whereas men focus on shared activities (Aukett, Ritchie, & Mill, 1988). Female friendships also tend to be more supportive and less competitive than male friendships (DeGoede, Branje, & Meeus, 2009). These factors may result in gendered expectations of how to 'do' friendship – including for autistic boys and girls. On this basis, one might therefore expect autistic girls' friendship experiences to be more like those of non-autistic girls than autistic and non-autistic boys.

Yet, on Baron-Cohen's (2002) Extreme Male Brain Theory (EMB), one might expect that autistic females should have outcomes more like those of males than neurotypical females. Consistent with this view, Baron-Cohen and Wheelwright (2003) found that autistic adults – male *and* female – scored lower (indicative of, for example, less empathetic friendships) than neurotypical adults on their Friendship Questionnaire (FQ). The number of autistic women in this study, however, was small (17 females relative to 51 males), rendering it possible that they did not have the power to detect significant differences. Indeed, with a slightly larger sample, Head, McGillivray, and Stokes (2014) found that autistic girls scored significantly higher than autistic boys on the FQ, but similarly to non-autistic boys, providing support for the EMB theory.

Closer examination of the nature of adolescent friendships, however, has revealed qualitative differences between autistic girls and boys. Kuo et al. (2013) found significant differences in the ways in which autistic adolescent boys and girls spent time with their friends, despite spending similar amounts of time socialising overall. Autistic boys tended to play games with their friends, whereas autistic girls were more likely to chat with theirs. These skills may allow autistic girls to maintain closer and more empathetic friendships – and, ultimately, to interact as neurotypical girls expect, focusing their friendships on conversations and emotional sharing. This interpretation is supported by Sedgewick et al.'s study on the friendship experiences of autistic adolescents, where autistic girls rated their best-friendships as more like those of non-autistic girls than autistic (and non-autistic) boys. It was also the case that Sedgewick et al. found that there was more conflict in the wider friendships of autistic girls than all other groups, and that this had a greater impact on them than on the boys. The types of conflict the autistic girls reported experiencing was similar to that reported by non-autistic girls, being relational conflict, and the autistic girls noted that they found it difficult to know how to manage such conflict. These findings suggest that, as girls face similar expectations regardless

of diagnostic status, being female may be more important in determining social experiences than being autistic.

This is especially the case as research has shown that autistic women (and therefore potentially autistic girls) are likely to develop camouflaging strategies to help them appear more ‘neurotypical’ in their day-to-day social interactions (Dean, Harwood, & Kasari, 2016; Lai et al., 2016; Rynkiewicz et al., 2016). These camouflaging behaviours then contribute to their peers expecting them to keep to neurotypical social ‘rules’, as they have fewer signs that these girls and women may be autistic, and so may judge them more harshly when they do make a miss-step.

Conflict is an inevitable part of growing up, and conflict management is a key skill in maintaining relationships. Unlike bullying (Humphrey & Hebron, 2014; Rowley et al., 2012), there is no work on conflict *within* the friendships and perceived friendships of autistic adolescents. This so-called ‘relational aggression’ is typically associated with girls, both with friends and female peers in general (Crick & Grotpeter, 1995). It is possible that autistic girls are most often experiencing this form of conflict when interacting with neurotypical girls, who usually employ these methods (Bowie, 2007). This conflict is likely to be difficult for autistic girls to understand and respond to, as the aggression takes place within the context of a ‘friendship’, requiring them to develop a nuanced and flexible understanding of ‘friends’, rather than taking people at face value, or seeing friends simply as whoever you ‘hang out with’ (which autistic people can tend to do; e.g., Bauminger & Kasari, 2000, Steward, 2013).

## **2.1 The current study**

The first study of my PhD investigated whether the social experiences of cognitively-able autistic boys and girls differ, and whether these gender differences mirror those seen in their neurotypical peers. Specifically, I built on our earlier study (Sedgewick et al., 2016) to (1) understand the nature of the friendships within *cognitively-able* autistic and neurotypical



adolescents, including their experiences of conflict and, critically, (2) determine whether these friendship and conflict experiences differ by gender within diagnostic groups.

To address these aims, I administered questionnaires addressing best-friendship quality (the Friendship Qualities Scale; Bukowski et al., 1994) and overt and relational conflict with peers (RPEQ; Prinstein, Boergers, & Vernberg, 2001) to autistic and neurotypical adolescents (boys and girls). Given that initial work shows that the friendship experiences of autistic girls are more like those of neurotypical girls than autistic or neurotypical boys (Sedgewick et al., 2016), I expected that girls would rate their best-friendships as stronger than boys, regardless of diagnostic status (i.e., whether they were autistic or neurotypical). I also predicted that autistic adolescents would experience more conflict than their neurotypical peers, particularly as victims (see Schroeder et al., 2014, for review). Nevertheless, I expected to see the same gendered patterns of conflict experiences in autistic adolescents as non-autistic adolescents (Crick & Grotpeter, 1995), with girls experiencing more relational conflict and boys experiencing more overt conflict; that is, the absence of an interaction between gender and diagnostic status.

To examine these issues in greater detail, and to elicit young peoples' views on their experiences, I also conducted semi-structured interviews with adolescents about their friendships, their difficulties with friends and peers, and, critically, how these impacted on their everyday lives. That the autistic voice is not elicited often enough in research has been pointed out by recent work asking for community priorities (e.g., Pellicano, Dinsmore, & Charman, 2014). These studies have highlighted that autistic people often feel that they are the subjects of research, rather than participants in research, and so throughout this PhD I sought to give equal weight to the voices of my participants, allowing them to explain what the topics examined meant in their everyday lives, rather than prioritising quantitative results.

### **2.1.2 Ethics.**

Ethical approval for this study was given by the UCL Institute of Education Ethical Committee. All participants gave their written consent, on a form which was purposefully written in accessible language, and I talked through the form with each participant to make sure that they understood that they were agreeing to take part, that they could change their mind and withdraw, and what I wanted to talk to them about. Parents also gave consent for their children to take part, apart from the parents of one 18 year old autistic girl, as she took part independently and without their knowledge. As the topics I was investigating were potentially sensitive and upsetting for adolescents (friendships and being bullied), I took care to ensure that they did not become distressed. I did this by telling participants in advance what sorts of topics I would be talking to them about, and once we were in conversation I offered to let them change the topic or skip questions which they found too emotionally difficult. If any participants disclosed that they had been bullied I asked whether they had told anyone about it, whether they were being supported, and whether it had been resolved. Of the few participants who did report being bullied, they all felt that the situation was being adequately managed by their schools.

## **2.2 Method**

### **2.2.1 Participants.**

Participant characteristics are shown in Table 2.1. A total of 102 intellectually-able adolescents (27 autistic girls, 26 autistic boys, 26 neurotypical girls, and 23 neurotypical boys), aged between 11 and 18 years old, took part. Inclusion criteria were (1) being 11 to 18 years old, (2) currently attending a mainstream secondary school or having attended one for at least part of their secondary schooling, (3) obtaining a Full-Scale IQ score greater than 70, as measured by the Wechsler Abbreviated Scales of Intelligence – 2<sup>nd</sup> edition (WASI-2) (Wechsler, 2011), and (4) for autistic participants, to have an existing clinical diagnosis of

autism. An additional eight participants were seen but excluded from the study for obtaining an IQ below 70 (1 neurotypical boy, 2 autistic boys, and 5 autistic girls). This particular age range was selected as this would include young people who were in secondary school, and thus ensured that participants were all in relatively similar educational settings, as primary schools tend to be smaller and have smaller class sizes than secondary schools. It also meant that participants were engaging in the more complex social worlds of adolescence rather than childhood friendships, as described in Chapter One.

Participants were recruited through community contacts, including charity partners, schools and social media, and came from across the UK. This was a truly national sample, with participants from each of the home nations (except Ireland), and a geographic spread within England, rather than the sample being London-dominated. There was also a range of socio-economic status (SES) families represented within the sample. Using maternal education as a proxy for SES, two had completed education to 16 (1.4%), 20 had completed education to 18 (14%), 70 had Bachelor's degrees (50%), three had Master's degrees (2%), and seven had PhD's (5%). This is broadly in line with education and SES patterns for the country, although the proportion of mothers with university degrees was higher than in the general population at 57% to 44% in the UK as a whole (Office for National Statistics, 2011). Most participants were from a White ethnic background (86%,  $n = 88$ ), with 10% ( $n = 11$ ) being from an Asian background and 4% ( $n = 4$ ) from a Black ethnic background, and there were no significant group differences in reported ethnicity,  $\chi^2(1)=16.59, p=.28$ .

Participants in each group were matched on age, Full-Scale IQ, Performance IQ and Verbal IQ. While it has been suggested that participant groups in autism research should be matched according to the variables which are relevant to the outcomes (Burack, Bowler et al., 2004), which in this study would primarily be Verbal IQ, I also included matching on Performance (or non-verbal) IQ as non-verbal behaviours also have an impact on social

interactions (Judith, Coats, & LeBeau, 2005; Krauss, Chen, & Chawla, 1996), and so could potentially influence outcomes. ANOVAs on adolescents' Full-Scale IQ, Performance IQ and Verbal IQ scores revealed no significant effects of group (autistic, neurotypical;  $ps>.15$ ) or gender (male, female;  $ps>.44$ ), and no group x gender interactions ( $ps>.14$ ). An ANOVA on chronological age demonstrated that there were no significant differences between the ages of the participants as a function of gender or diagnostic group, nor was there a significant interaction between these variables (all  $ps>.79$ ).

Table 2.1

*Participant characteristics as a function of gender and diagnostic group.*

<b>Group</b>	<b>N</b>	<b>Age</b>	<b>Verbal IQ<sup>a</sup></b>	<b>Performance IQ<sup>a</sup></b>	<b>Full-Scale IQ<sup>a</sup></b>
		M (SD)	M (SD)	M (SD)	M (SD)
		Range	Range	Range	Range
Autistic Boys	26	14.29 (1.77)	103.08 (13.42)	105.92 (19.19)	104.92(16.11)
		11 – 17	76 – 126	75 – 154	76 – 132
Autistic Girls	27	14.44 (1.91)	98.88 (15.11)	102.71 (17.56)	100.35 (15.70)
		11 – 17	67 – 125	83 – 145	76 – 140
Neurotypical Boys	23	14.43 (1.65)	103.05 (9.59)	107.45 (15.27)	106.00 (11.71)
		12 – 17	84 – 123	69 – 133	84 – 122
Neurotypical Girls	26	14.48 (2.13)	106.92 (12.99)	105.27 (13.72)	106.81 (12.63)
		11 – 18	83 – 133	76 – 140	77 – 140
Total	102	14.41 (1.86)	103.43 (12.86)	105.51 (16.32)	104.46 (14.27)
		11 – 18	67 – 133	69 – 154	76 – 140

Notes: <sup>a</sup>It is possible to score below 70 on one subscale of the WASI-2 (either the Verbal or Performance IQ section) and still achieve a Full-Scale IQ score of above 70. In these cases, participants have been included on the basis of their Full-Scale IQ rather than excluded on the basis of subscale scores.

All autistic participants had received an independent clinical diagnosis of an autism spectrum condition per either DSM (APA, 2000, 2013) or ICD-10 (WHO, 1993) criteria. I used the ADOS-2 (Autism Diagnostic Observation Schedule – 2<sup>nd</sup> Edition (ADOS-2); Lord et al., 2012) and the Social Responsiveness Scale 2<sup>nd</sup> Edition (SRS-2; Constantino & Gruber, 2012) to determine where the autistic participants lie on the autism spectrum. These participants completed either Module 3 (n=10) or Module 4 (n=41) of the ADOS-2. It is worth noting that Modules 3 and 4 of the ADOS-2 are designed for verbally fluent young people and adults, with the main difference between the two being that Module 3 is aimed at individuals for whom imaginative play with figures is developmentally appropriate. Module 4 contains no play-based tasks, and is therefore used with verbally fluent young people and adults who would no longer play with toys in this way at home. The ADOS-2 was used because it is recognised as the current ‘gold-standard’ diagnostic measure, rating a range of features associated with autism in a standardised way and allowing for direct comparisons between participants who may have experienced slightly different routes and processes in receiving their diagnoses. The SRS-2, as a parent-rated questionnaire, accesses different information about levels of autistic behaviours, because it asks about the frequency of those behaviours over the last six months. This means that it is possible to look at a longer-term presentation amongst participants in comparison to the ADOS-2 scores, which reflect a brief interaction with the researcher.

ADOS-2 algorithm scores were converted to standardised ADOS severity scores (maximum score=10; Hus, Gotham, & Lord, 2014; Lord et al., 2012) and these were used in all subsequent analyses. Autistic boys (M=5.45, SD=1.90) obtained significantly higher ADOS-2 severity scores than autistic girls (M=3.87, SD=1.89),  $t(36)=2.51$ ,  $p=.01$ ,  $d=.84$ . It should be noted that sections C (Imagination/Creativity) and D (Stereotyped Behaviours and Restricted Interests) of the ADOS-2 are not included in the diagnostic algorithm. Autistic girls

were more likely to score in these areas than autistic boys (Imagination: 46% vs 42%; Stereotyped Behaviours and Restricted Interests: 34% vs 28%), particularly on Item D1 ‘Unusual Sensory Interest in Play Material/Person’ (34% of boys vs 62% of girls). This suggests that autistic girls may score on different subscales of the ADOS-2, but that these sections are not included in the diagnostic algorithm.

Two boys and four girls failed to meet the ADOS-2 threshold for an autism spectrum condition, scoring less than seven on their total algorithm score. Two girls also declined to take part in the ADOS-2. We retained these young people in analyses, however, given that they (i) had a pre-existing clinical diagnosis of autism, (ii) had a statement of Special Educational Needs or Education, Health and Care plan<sup>2</sup>, which specified autism as their primary need, and (iii) met threshold for autism on the SRS-2 (Constantino & Gruber, 2012) (see Table 2.2), as reported by parents.

Table 2.2

*Table displaying ADOS-2 and SRS-2 scores by gender and diagnostic group.*

Group	ADOS-2 Total Score <sup>a</sup>	ADOS-2 Severity Score <sup>a</sup>	N	SRS-2 Total Score <sup>b</sup>	N
	M (SD) Range	M (SD) Range		M (SD) Range	
Autistic Boys	9.43 (3.96) 6 – 21	5.45 (1.90) 3 – 10	22	102.52 (22.67) 65 – 152	22
Autistic Girls	7.33 (2.58) 4 – 15	3.87 (1.89) 2 – 9	23	106.00 (27.69) 42 – 165	24
Neurotypical Boys	-	-	-	23.80 (14.01) 7 – 56	20
Neurotypical Girls	-	-	-	20.33 (11.25) 8 – 46	21

Notes: <sup>a</sup>ADOS-2 (Autism Diagnostic Observation Schedule – 2<sup>nd</sup> Edition) Higher scores reflect a higher level of observer-rated autistic symptomatology. <sup>b</sup>SRS-2 (Social Responsiveness Scale – 2<sup>nd</sup> Edition) Higher scores reflect a higher level of parent-rated autistic behaviours in the last 6 months.

<sup>2</sup> A Statement of Special Educational Need or an Education, Health and Care Plan is the document required to access support within schools in England. They are issued by the Local Authority after assessment of what support a child needs in order to fully access education (Department for Education, 2015)

### **2.2.2 Measures.**

Further to the measures described here, participants were also given additional questionnaires and completed a video task, which are described in Chapter Three. These additional measures are presented in the next Chapter, rather than in this Chapter, as they contribute to a set of analyses which built upon the results of this Chapter. I therefore felt that this was the clearest way to present the two sets of information.

#### ***2.2.2.1 Background Questionnaire.***

Parents completed a background questionnaire about each adolescent, which included questions about diagnoses, educational placement, mother's education, mother's employment, and ethnicity. Questions in general had closed response options, apart from 'Other' options for questions about diagnoses, education type, living arrangements, and ethnicity.

#### ***2.2.2.1 Social Responsiveness Scale - 2<sup>nd</sup> edition (SRS-2: Constantino & Gruber, 2012).***

Parents completed the SRS-2 School-Age Form (Constantino & Gruber, 2012), a 65-item questionnaire assessing social and behavioural difficulties associated with autism in children and adolescents. The SRS-2 includes five subscales (social awareness, social cognition, social communication, social motivation, and restricted interests and repetitive behaviours). Participants rate statements about behaviours over the last six months on a scale ranging from 1 (not true) to 4 (almost always true). Higher SRS-2 scores reflect greater severity of autistic symptoms. The SRS-2 was chosen as it is a widely used measure, which has been well-validated and has gender-normed scores, which account for the differences in male and female presentation. These gender-norms were considered when analysing the data by running all tests with T-scores as well as raw scores, with the same results. Therefore, raw scores are presented as they give a clearer picture of the findings, as the gender-normed scores would

require presenting two versions of the results for each analysis utilising the SRS-2. In the current sample, Cronbach's  $\alpha$  was .91 for autistic, and .88 for neurotypical, participants, suggesting excellent reliability.

#### ***2.2.2.2 Friendship Qualities Scale (FQS: Bukowski et al., 1994).***

The FQS assesses adolescents' perceptions of their best-friendship quality, and has frequently been used to examine autistic children's friendship experiences (Bauminger & Kasari, 2000; Locke, Ishijima, Kasari, & London, 2010). It has 23 items, rated on a 5-point scale ranging from 1 (not true at all) to 5 (very true). It covers five aspects of friendship: Companionship (e.g., 'My friend and I do things together'); Conflict (e.g., 'My friend and I can argue a lot'); Help (e.g., 'My friend would help me if I needed it'); Security (e.g., 'If I say sorry after a fight or an argument, everything will be alright'), and Closeness (e.g., 'If my friend had to move away I would miss him/her'). I decided to use the FQS in this study to follow the protocol used in Sedgewick et al., (2016) preliminary study, and because it is a widely-used measure with strong reliability.

The measure showed excellent reliability in our neurotypical (Cronbach's  $\alpha=.91$ ) and autistic (Cronbach's  $\alpha=0.92$ ) groups. Higher subscale scores reflect greater friendship quality (e.g., a higher Closeness score represents an emotionally closer friendship), except for the Conflict subscale, in which higher scores are indicative of more conflict in a friendship. The four positive subscales were strongly inter-correlated ( $r_s=.55-.72$ ), while the Conflict subscale was not significantly correlated with any other subscale ( $r_s<.06$ ). To reduce the number of dependent variables in analyses, we created an overall Friendship Strength score by averaging the four positive subscales (Companionship, Closeness, Help, and Security) and analysed the Conflict subscale separately. Higher scores indicate greater friendship strength/conflict.



### ***2.2.2.3 Revised Peer Experiences Questionnaire (RPEQ) (Prinstein et al., 2001).***

The RPEQ is an 18-item questionnaire assessing the frequency of overt (e.g., ‘Someone threatened to hurt or beat me up’) and relational (e.g., ‘I left someone at school out of what I was doing’) bullying behaviours that a participant both engages in and is subject to. Items are rated on a 5-point scale ranging from 0 (never) to 4 (a few times a week). It has aggressor (e.g., ‘I chased someone like I was really trying to hurt them’) and victim versions (e.g., ‘Someone chased me like they were really trying to hurt me’). The scale yields eight subscales (Victimhood, Aggression, Overt, Relational, Overt Victimhood, Relational Victimhood, Overt Aggression, and Relational Aggression) and an overall Total score (created by summing all subscale scores). Higher scores reflect greater involvement in peer conflict.

This is the first time that the RPEQ has been used in an autistic population. It was selected for this study because (1) it is a relatively short questionnaire (in a large overall testing battery), which, unlike many other existing measures, allowed for separate examinations of overt and relational conflict, and (2) has strong psychometric properties in neurotypical populations (McLaughlin, Hatzenbuehler, Mennin, & Nolen-Hoeksema, 2011; Siegel, La Greca, & Harrison, 2009), including good internal validity (Cronbach’s  $\alpha=.76-.80$  for the four behavioural scales) and significant associations with peer reports of the same behaviours (correlation coefficients from .34 to .40;  $p<.01$ ) (Prinstein, Boergers, & Vernberg, 2001). Estimates of Cronbach’s  $\alpha$  for the Total scores in our samples were also high (neurotypical adolescents:  $\alpha=.88$ ; autistic adolescents:  $\alpha=.87$ ).

### ***2.2.2.4 Semi-structured interview.***

The semi-structured interview comprised two parts: (1) friendships and social relationships and (2) critical incident. Part 1 included a series of open-ended questions about adolescents’ friendship experiences. Questions were initially generated from the ADOS-2 ‘Friendships and Marriage’ section (as in Calder et al., 2013; Sedgewick et al., 2016), such as

‘How do you know if someone is your friend?’ Questions were added to probe specific age-appropriate issues, such as ‘Do you see your friends outside school?’ The full interview schedule can be seen in Table 2.3, including prompt questions.

Part 2 focused on conflict in young people’s relationships, using – for the first time with autistic adolescents, to our knowledge – a critical incident technique. Using this approach, participants were asked to think of two specific experiences with peers – one good and one difficult – and asked to elaborate on them. This method was designed to elicit young people’s conflict experiences in detail, including their cognitions and emotional responses. It also sought to examine how adolescents manage – or fail to manage – conflict in their relationships.

Table 2.3

*Interview schedule used with autistic and neurotypical adolescents, with main questions and prompts.*

<u>Key Question</u>	<u>Question Prompts</u>
Can you tell me a bit about your friends?	<p>Do you have many friends?</p> <p>Where do you see them? How often?</p> <p>What do you do with your friends?</p> <p>Do you use the internet to keep in touch with friends?</p> <p>Are you happy with the friends you have?</p>
What does being a friend mean to you?	<p>How do you know when someone is your friend? What is a good friend?</p> <p>Are there some friends who are more important than others? Why?</p> <p>Have you ever had not-so-good friends, or people who pretended to be your friend?</p>
Can you tell me some good things and some difficult things about your friends?	<p>Do your friends help you?</p> <p>Have you ever been annoyed by your friends or annoyed them? Do you argue with your friends?</p> <p>How do you try to sort it out when you argue with your friends?</p>
What about romantic relationships?	<p>Are you dating? If not: Would you like to in the future?</p> <p>Are any of your friends dating?</p> <p>Why do you think people date at school?</p> <p>How is someone you date different to a friend?</p> <p>Do you have to do different things to stay dating than to stay friends? Are the arguments different?</p>

Can you tell me about a time when something bad happened with your friends, or when your friends did something you didn't like?

Can you tell me about a time when you had a lot of fun with your friends, or when something good happened with them? (same prompt questions)

Is there anything else you think it would be interesting for me to know about your friendships or how you get on with people?

Why do you think it happened?

What did you do?

What happened afterwards? Did you sort it out? How?

How did you feel?

Did people remember? Did it change your friends?

Would you do anything different if it happened again?

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### **2.3 General Procedure**

Participants were seen for one or two sessions, either at their home, the University, or in a quiet room in their school (depending on participants' preferences). The ADOS-2 was administered at the beginning of the session (if applicable), followed by the WASI-2, FQS, RPEQ and, once rapport had been established, the interview. Parents completed questionnaires during the session or returned them by post.

### **2.4 Data Analysis**

Data from questionnaires (SRS-2, FQS, and RPEQ) were analysed using SPSS (SPSS v.22). A series of between-group ANOVAs with group (autistic, neurotypical) and gender (female, male) as the independent variables were conducted on total and sub-scale scores of each measure.

Interview recordings were transcribed verbatim and subjected to thematic analysis following Braun and Clarke (2006). The phases of thematic analysis include: (1) data familiarisation, (2) generation of initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) report production. I carried out initial thematic analysis, with my two supervisors carrying out thematic analysis on 20% of the interviews. We then discussed and agreed upon the themes.

I took a phenomenological stance in analysing the interview data, examining how participants experience and feel about their friendships and the conflict they experience, rather than a constructionist view which would seek to explore how individuals use language to create their experiences. I used an inductive approach, looking for the themes which were present in the data rather than starting with a priori assumptions as to what I expected to find. Data were analysed at the semantic level initially, identifying themes through similar phrases and concepts, with the generated themes being collapsed based on overarching similarities.

Following the priorities of qualitative research as outlined by Barker and Pistrang (2015), I sought to *understand* the views of my participants, rather than necessarily wanting to generate universally-applicable predictions. This is particularly important to state, as the views of adolescents cannot be taken as representative of other age groups, because relationships develop and change over time. Although I examined the data without a priori assumptions, I started with research questions examining whether there were differences in the friendships and conflict experiences of autistic and neurotypical girls/boys. I also, due to carrying out all testing in face-to-face situations, knew the gender of each participant before I analysed their interviews, and this may have influenced my expectations of what they would say about friendships and conflict. Despite this, I feel that I was even-handed in the analysis, and my supervisors agreed with the themes-by-gender that I had identified when they carried out double-coding.

Barker and Pistrang (2005) also set out guidelines for the production and evaluation of good-quality qualitative research, and I feel that these interviews and analyses meet these. In regard to their guidelines for all research, I used *appropriate methods* in semi-structured interviews, and am *transparent* about how these were administered; the findings are likely to be *important*; and the techniques and research have been developed in line with *community psychology values*, such as *sensitivity*, *respect*, a focus on *competency as well as difficulty*, and

I have sought to *give voice to an under-represented population*. Their criteria for good-quality qualitative research are focussed on establishing the “trustworthiness” of the findings (Barker & Pistrang, 2005). These include a *disclosure of perspective*, which I have done above; *grounding interpretations in the data*, which is done here through the extensive presentation of direct quotes from participants; maintaining a *coherence in the interpretive framework*, often through the use of a “set of themes or categories” – although, as discussed above, I did not have a priori themes I was investigating, the topics of friendship and conflict guided the interviews; and the use of *credibility checks*, which was done through double-coding with my supervisors.

## 2.5 Results

To begin, the results of between-group analyses on the FQS and RPEQ are reported, followed by data from the semi-structured interviews.

### 2.5.1 Best-friendship quality.

FQS subscale and overall scores by group are presented in Table 2.4. A 2 (group: autistic vs neurotypical) x 2 (gender: boys vs girls) ANOVA on total friendship-strength scores<sup>3</sup> revealed significant effects of group,  $F(1, 101)=15.38, p=.001, \eta_p^2=.13$ , and gender,  $F(1, 101)=4.76, p=.03, \eta_p^2=.04$  with autistic adolescents ( $M=3.59, SD=.76$ ) rating their best-friendship as less strong than neurotypical adolescents ( $M=4.10, SD=.52$ ), and boys ( $M=3.68, SD=.66$ ) rating their best-friendships as less strong than girls ( $M=3.97, SD=0.71$ ). There was no significant group x gender interaction,  $F<1$ .

Table 2.4

*Friendship Qualities Scale (FQS) subscale scores by gender (boys, girls) and diagnostic group (autistic, neurotypical).*

<b>Group</b>	<b>Strength</b>	<b>Conflict</b>	<b>Companionship</b>	<b>Closeness</b>	<b>Security</b>	<b>Help</b>
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)

<sup>3</sup> Analysis of the individual subscales demonstrated either main effects of group (for Companionship, Helpfulness) and/or gender (for Closeness, Security, Helpfulness scores) but no group x gender interactions for any subscale (all  $p>.16$ ).

	Range	Range	Range	Range	Range	Range
Autistic Boys	3.45 (0.75) 1.61 – 4.38	3.55 (0.87) 1.75 – 5.00	3.40 (0.79) 1.25 – 4.75	3.65 (0.98) 1.40 – 5.00	3.38 (0.79) 1.20 – 4.60	3.36 (0.88) 1.80 – 4.80
Autistic Girls	3.62 (0.72) 2.06 – 4.95	3.79 (0.87) 2.25 – 5.00	3.61 (1.07) 1.25 – 5.00	4.30 (0.63) 2.60 – 5.00	3.94 (0.75) 2.00 – 5.00	4.01 (0.82) 2.20 – 5.00
Neurotypical Boys	3.95 (0.38) 3.23 – 4.80	3.14 (0.96) 1.50 – 4.75	3.74 (0.61) 2.75 – 5.00	4.08 (0.56) 2.20 – 5.00	3.80 (0.48) 2.60 – 4.80	4.20 (0.55) 2.60 – 5.00
Neurotypical Girls	4.23 (0.59) 2.05 – 4.90	3.34 (1.04) 1.75 – 5.00	4.10 (0.75) 1.80 – 5.00	4.36 (0.58) 2.60 – 5.00	4.05 (0.70) 1.80 – 5.00	4.43 (0.690) 1.80 – 5.00

Notes. Higher scores reflect higher levels of each subscale behaviour for example, higher Closeness scores mean a friendship which is more emotionally close. The exception to this rule is the Conflict subscale, where scores were reversed, such that higher scores reflect lower levels of conflict with a best friend.

A further 2 (group) x 2 (gender) ANOVA, on FQS Conflict subscale scores, identified a main effect of group,  $F(1, 101)=5.07, p=.02, \eta_p^2=.04$ , such that autistic adolescents ( $M=3.66, SD=.87$ ) had best-friendships characterised by more conflict than non-autistic adolescents ( $M=3.24, SD=.99$ ). But, unlike friendship-strength scores, there was no main effect of gender,  $F(1, 101)=1.25, p=.27, \eta_p^2=.01$ . There was no significant group x gender interaction,  $F<1$ .

### 2.5.2 Peer conflict

The eight subscales and total score of the RPEQ (which accounts for both victim and aggressor conflict roles) are presented in Table 2.5. Analyses of Total scores are presented first, followed by analyses of Total Victimhood, Total Aggression, Overt Conflict and RelationalConflict

Table 2.5

*Revised Peer Experiences Questionnaire (RPEQ) Total and subscale scores by gender (boys, girls) and group (autistic, neurotypical).*

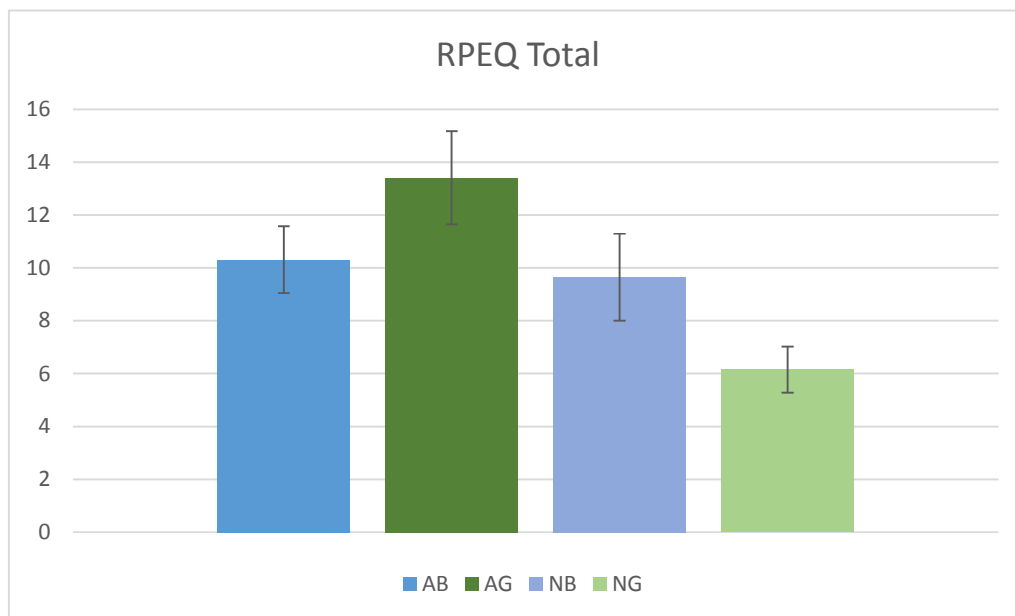
<b>Group</b>	<b>Total</b>	<b>Victim</b>	<b>Aggressor</b>	<b>Overt</b>	<b>Relational</b>	<b>Relational Victim</b>	<b>Overt Victim</b>	<b>Relational Aggressor</b>	<b>Overt Aggressor</b>
	M (SD)	M (SD)	M (SD)	M (SD) Range	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
	Range	Range	Range		Range	Range	Range	Range	Range
Autistic Boys	10.31 (6.47)	6.58 (4.02)	3.73 (3.31)	5.38 (3.69)	4.92 (4.36)	3.12 (2.71)	3.46 (2.66)	1.81 (2.09)	1.92 (1.94)
Autistic Girls	0 – 31 13.41 (9.13)	0 – 16 10.11 (6.27)	0 – 15 3.30 (4.48)	0 – 14 4.26 (4.75)	0 – 17 9.15 (5.94)	0 – 10 6.78 (4.34)	0 – 12 3.33 (3.17)	0 – 8 2.37 (2.57)	0 – 8 0.93 (2.76)
Neurotypical Boys	2 – 45 9.65 (7.92)	2 – 23 6.26 (5.09)	0 – 22 3.39 (3.86)	0 – 22 3.00 (2.86)	0 – 24 6.65 (6.33)	0 – 16 4.30 (4.39)	0 – 10 1.96 (1.75)	0 – 8 2.35 (3.11)	0 – 14 1.04 (1.22)
Neurotypical Girls	1 – 30 6.15 (4.44)	0 – 18 4.08 (2.70)	0 – 14 2.08 (2.72)	0 – 10 0.38 (1.24)	1 – 22 5.77 (3.69)	0 – 18 3.85 (2.49)	0 – 6 0.23 (0.71)	0 – 12 1.92 (2.23)	0 – 4 0.15 (0.61)
Total	0 – 18 9.92 (7.57)	0 – 12 6.80 (5.15)	0 – 12 3.12 (3.65)	0 – 6 3.27 (3.86)	0 – 15 6.65 (5.34)	0 – 10 4.54 (3.80)	0 – 3 2.26 (2.63)	0 – 3 2.11 (1.29)	0 – 3 1.01 (1.93)
	0 – 31	0 – 23	0 – 22	0 – 22	0 – 24	0 – 18	0 – 12	0 – 12	0 – 14

Notes. Higher scores reflect higher levels of each subscale. For example, higher Victim scores reflect being the victim of aggression more frequently.



As expected, for the Total involvement in conflict score, there was a main effect of group,  $F(1, 101)=7.65, p=.007, \eta_p^2=.07$ , with autistic adolescents ( $M=11.89, SD=8.01$ ) experiencing more conflict than their neurotypical peers ( $M=7.80, SD=6.49$ ). There was no significant effect of gender,  $F(1, 101)<1$ , but there was a significant group x gender interaction,  $F(1, 98)=5.33, p=.02, \eta_p^2=.05$ . Planned comparisons revealed that autistic girls ( $M=13.41, SD=6.46$ ) experienced significantly more conflict than neurotypical girls ( $M=6.15, SD=4.44$ ),  $t(51)=3.65, p=.001, d=1.01$  – and both autistic and neurotypical boys ( $ps<.05$ ). Autistic boys experienced similar levels of conflict to neurotypical boys,  $t(47)=.31, p=.75, d=.09$ , but significantly more than neurotypical girls,  $t(50)=2.70, p<.01, d=.75$ , while there was no difference between neurotypical boys and girls,  $t(47)=1.77, p=.06, d=.54$ .

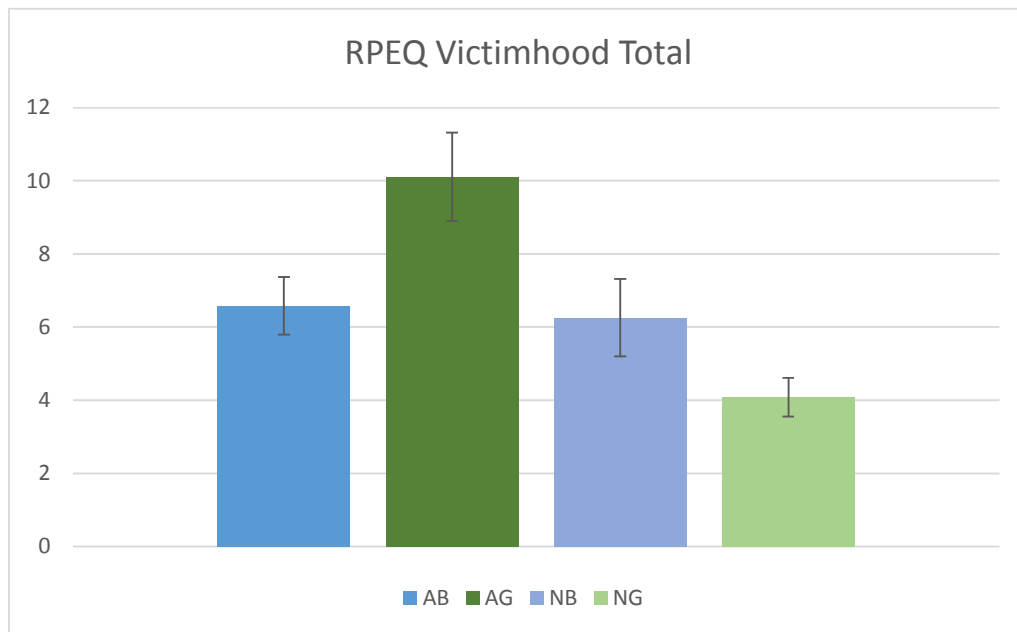
Figure 2.1. Graph showing the interaction between group (autistic, neurotypical) and gender (male, female) for Total involvement in conflict.



In line with our predictions, for overall Victimhood score there was a main effect of group,  $F(1, 101)=11.53, p=.001, \eta_p^2=.10$ , no significant main effect of gender,  $F(1, 101)<1$ , and a significant group x gender interaction,  $F(1, 98)=9.35, p=.003, \eta_p^2=.08$ . Planned t-tests showed that this interaction was driven by autistic girls' scores, who reported significantly

higher Victimhood scores than all other groups ( $p < .05$ ) (see Table 1.4). Autistic boys also reported significantly higher Victimhood scores than neurotypical girls,  $t(50)=2.63$ ,  $p=.01$ ,  $d=.73$ , but not significantly different to neurotypical boys,  $t(47)=.24$ ,  $p=.81$ ,  $d=.07$ .

Figure 2.2. Graph showing the interaction between group (autistic, neurotypical) and gender (male, female) for Total Victimhood.

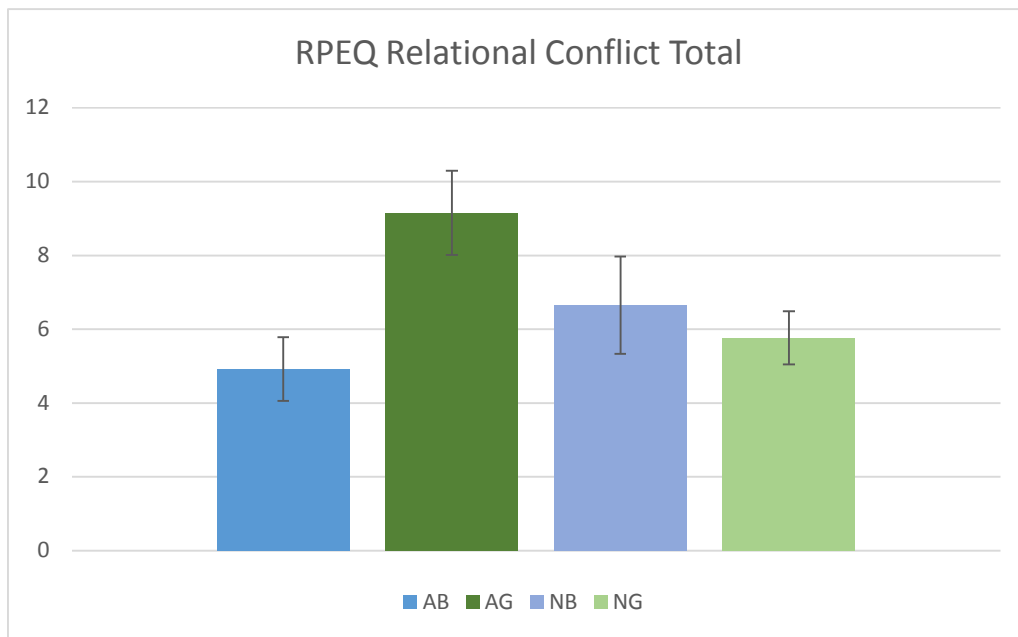


Perhaps unsurprisingly, all adolescents reported that they were rarely aggressors. There were no main effects of group ( $p > .20$ ) or gender ( $p > .20$ ), and no group x gender interactions ( $p > .30$ ) for both Total and Relational Aggressor scores. For Overt Aggression there were main effects of group,  $F(1, 101)=5.08$ ,  $p=.03$ ,  $\eta_p^2=.03$ , and gender,  $F(1, 101)=6.63$ ,  $p=.01$ ,  $\eta_p^2=.05$ , with autistic adolescents and boys being more overtly aggressive, but no group x gender interaction,  $F(1, 98)<1$ .

For Total Overt Conflict, there were main effects of group,  $F(1, 101)=21.29$ ,  $p<.01$ ,  $\eta_p^2=.09$  and gender,  $F(1, 101)=7.60$ ,  $p<.01$ ,  $\eta_p^2=.03$ , but no group x gender interaction,  $F(1, 98)=1.21$ ,  $p=.27$ ,  $\eta_p^2<.01$ . Boys ( $M=4.27$ ,  $SD=4.26$ ) experienced more overt conflict than girls ( $M=2.36$ ,  $SD=3.98$ ), regardless of diagnostic status. Autistic adolescents ( $M=4.81$ ,  $SD=4.26$ ) experienced more overt conflict than neurotypical ( $M=1.61$ ,  $SD=2.51$ , regardless of gender).

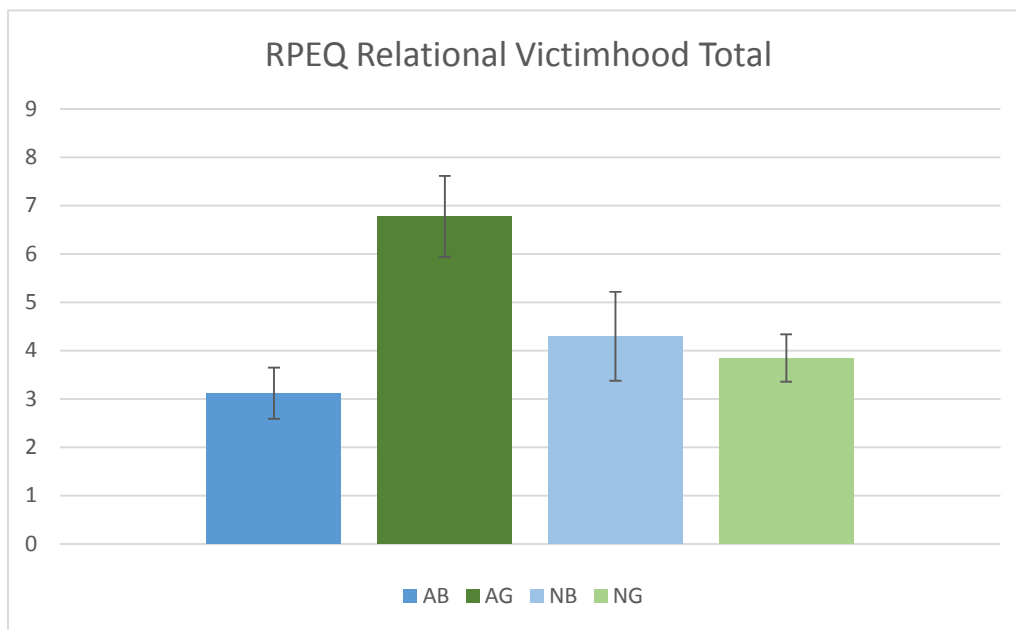
Regarding Total Relational conflict scores, there were no main effects of group,  $F(1, 101) < 1$ , or gender,  $F(1, 101) = 2.66, p = .11, \eta_p^2 = .02$ , but there was a significant group x gender interaction,  $F(1, 98) = 6.21, p = .01, \eta_p^2 = .06$ . Planned t-tests showed that autistic girls reported experiencing greater relational conflict than all other groups ( $ps < .03$ ).

Figure 2.3. Graph showing the interaction between group (autistic, neurotypical) and gender (male, female) for Relational Conflict.



A similar pattern was found for Relational Victimization, with no main effect of group,  $F(1, 101) = 1.51, p = .22, \eta_p^2 = .01$ , but a significant main effect of gender,  $F(1, 101) = 5.09, p = .02, \eta_p^2 = .04$ , and a significant group x gender interaction,  $F(1, 98) = 8.42, p = .005, \eta_p^2 = 0.07$ . Planned t-tests revealed that the source of this interaction was autistic girls experiencing significantly more Relational Victimization than all other groups ( $ps < .01$ ). There were no group differences in Relational Victimization between autistic boys and neurotypical boys and girls ( $ps > .26$ ).

Figure 2.4. Graph showing the interaction between group (autistic, neurotypical) and gender (male, female) for Relational Victimhood.



### 2.5.3 Semi-structured Interviews.

Semi-structured interviews were carried out with most participants (90 of 102: 27 autistic girls, 23 autistic boys, 20 neurotypical girls, 20 neurotypical boys), as some declined consent for being recorded (n=5) or taking part in the interview portion of the study (n=7). Interviews varied in length between participants (range=4:56–45:25 min), but mean times were similar across groups (range=12.41–16.36 min), with no significant differences in interview length between groups ( $p>.41$ ). When attributing quotes, ‘AB’ refers to autistic boys, ‘AG’ to autistic girls, ‘NB’ to neurotypical boys and ‘NG’ to neurotypical girls.

I identified three themes common to all young people, regardless of gender or diagnostic status. First, they described friends as *people like me*, that is, of the same age-group and gender, with similar interests: “they’re in the same class as me” (AB); “they like football” (NB); “they have the same kind of personality as me” (AG). Second, all young people emphasised that *friends are there for you*, but the nature of this support differed by gender (which will be discussed in detail below). Third, they discussed friendships being maintained through

*spending time together* (“friends are people you could be with all the time”, AG) with this contact strengthening relationships (“it makes them better because there’s more to talk about”, NG; “I think you become better friends if you spend time together”, NB).

My analysis showed that, despite these commonalities, there were also key differences, and that gender – rather than diagnostic status – was the main basis of difference between young people: girls and boys had very different experiences. Thematic analyses were therefore conducted for each gender separately.

#### ***2.5.3.1 Girls.***

I identified nine themes in girls’ responses (themes italicised; see Figure 2.1). Having *a few good friends* was key, with all girls talking about having a small number of close friends that they considered to be “best” friends: “some I’m really close to, others we get along” (NG); “my really close friends are the ones I’ll talk to out of school, the others are just school friends” (AG). These close friends were the people with whom they spent the most time, talked to most, and who they discussed when asked about their friends.

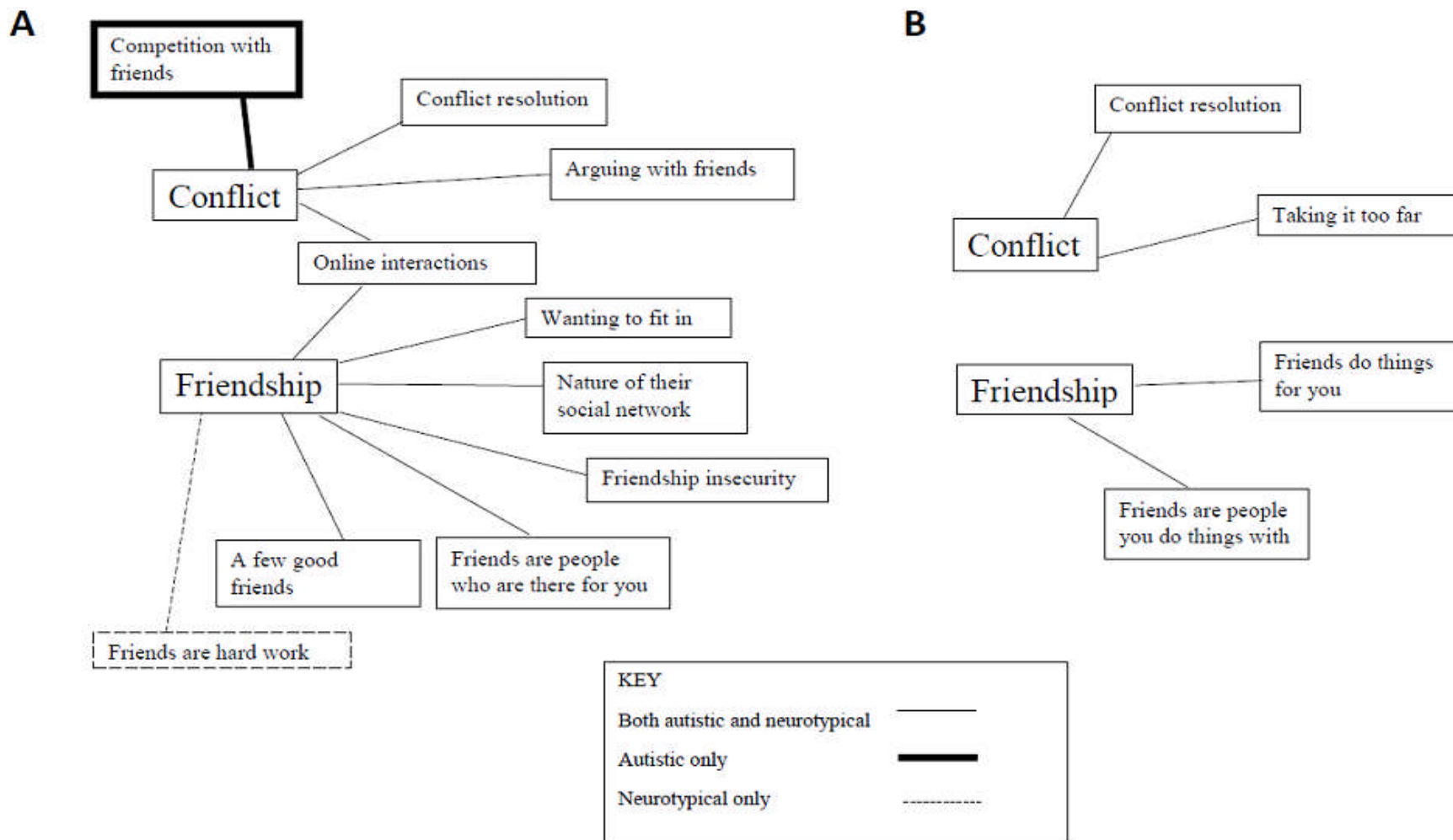


Figure 2.5. Diagram showing the themes emerging from interviews with adolescent (A) girls and (B) boys. The topics asked about during the interview were Conflict and Friendship. Boxes denote themes within these topics. Bold lines denote themes unique to autistic participants, dashed lines denote themes unique to neurotypical participants.

Girls discussed the importance of these close friends for emotional and social support, that is, *friends are people who are there for you*. Both autistic and neurotypical girls emphasised that friends supported them and helped in difficult situations. Emotional support could take the form of “being there for someone no matter what” (NG), which was important for negotiating adolescent ‘drama’. Social support was key for autistic girls, with one saying, “my friend helps me if I don’t understand what the other girls mean when they stay stuff” (AG). Neurotypical girls also talked about their friends doing this, particularly when trying to resolve conflict: “I’d ask one of the friends in the group that I can trust more”. Friends often acted as mediators in an argument for both autistic and neurotypical girls – “people tell friends in the middle stuff so you can find out [why they are annoyed]” (AG); “I’d go to common good friends” (NG).

A key difference between autistic and neurotypical girls was the *nature of their social network*. While both groups had small numbers of close friends, neurotypical girls also had a wider group who were less close: “I have a best friend and close friends and then other friends who I hang around with” (NG). These wider social groups were people they spent time with, but would not turn to for emotional support: “I can hang out with them. I wouldn’t tell them stuff I would tell my close friends” (NG). Most autistic girls instead described having one or two close friends, and seeing other people solely as classmates: “I tend to have one friend at a time really” (AG). For these girls, this was because *friends are hard work*, so maintaining more than one or two close relationships was difficult: “I only have one friend at a time, [having more] would be too much hard work”. These friendships were described as being intense (“going to each other’s houses every day”, AG) and arguments within them could be devastating as “you have no-one else to go to” (AG). Even autistic girls who maintained a group of friends talked about wanting intense relationships (“I would want to hang out all the

time, absorb into another family”, AG) and feeling that this would be better than their current friendships.

The conflict experiences that girls described were almost always relational in nature, and were often caused by difficulties with those same close friends. *Arguing with friends* was critical for all girls, with arguments about gossip and changing group dynamics being most common – “people saying things, gossip...then they have a massive falling out” (AG); “two of them got in a really big argument and dragged us in with them” (NG). The outcomes of these disagreements were also dealt with in highly relational ways, such as not speaking to each other, or being mean: “we called her ‘a horse’!” (NG). This relational conflict was the focus of much discussion for girls, who often recounted past instances in detail, even if they had been resolved. Girls felt these incidents had a lasting impact on their friendships: “after that...I just don’t feel as close to her” (NG); “I can count lists of people who *were* my friends” (AG).

There were some important differences between autistic and neurotypical girls. While all girls experienced relational conflict, with strikingly similar causes and behaviours, autistic and neurotypical girls described different *conflict resolution* strategies. For major disagreements (as opposed to minor bickering), neurotypical girls described waiting, then talking to their friend to resolve the issue: “we kind of realise that this isn’t going to solve anything, so we decide to sit down and talk about it” (NG)’. For them, conflict resolution was a reciprocal process with joint problem-solving. In contrast, autistic girls described an ‘all-or-nothing’ approach, either taking sole responsibility for what had happened (“obviously I would very quickly apologise to her and say, I’m really sorry about this”, AG), or ending the friendship entirely, seeing the other person as the wrong-doer, (“I’m just like, ‘why did you lie?’”, AG), or feeling it could not be resolved (“after I was friends with K I stopped being friends with the other girl”, AG).



*Online interactions* played a major role in girls' friendships, with social media often being a way of reinforcing offline friendships, making them visible to others in their social networks ("if you've not seen them in a while you can see their posts", AG; "I have it so I can like all the photos...that's what you do", AG) – thereby making them more concrete. The number of 'likes' a photo received (where your friends or followers react positively to your social media post) was the key measure of how popular girls felt, and they talked about the development of online social obligations which are important to real-life friendships ("you can like your friends stuff and make them look good", NG), and how not meeting these obligations could result in real-life conflict ("we'll have an argument if someone's boyfriend likes someone else's picture", NG).

Despite the closeness of their friendships, and a general sense of satisfaction, girls had high levels of *friendship insecurity*. Both autistic and neurotypical girls discussed worrying that their friends did not really like them ("I can't comprehend how someone would view me... I don't want to upset them", AG) or that they were in some way not good enough ("I'm worried if I don't deserve them, whether they are just putting up with me", NG). This anxiety could result in them withdrawing from friendships ("[I] just accepted that she'd give up on the friendship", AG). The insecurity some girls felt about their friendships played into their conflicts, with accusations of interfering in friendships: "they want you to be their friend more than someone else's... and then the two of them argue" (NG).

Both autistic and neurotypical girls alluded to *wanting to fit in*, but in different ways. For example, neurotypical girls talked about dating to look cool: "they wanna be cool, they think it's just what you're meant to do" (NG). Few girls in this sample had boyfriends at the time of testing, but when asked most said that people they knew dated to fit in with the popular crowd. Equally, autistic girls talked about friends who "let you be yourself" or "don't mind

that I'm a bit weird", which neurotypical girls did not, implying that autistic girls feel they must control how they appear to people around them, but that they can relax with true friends.

This desire to fit in could also lead to *competition with friends* – at least for neurotypical girls. Several neurotypical girls talked about the feeling of competing with their friends, whether academically or socially (“you always want to be better than the other person, not just with grades but with friends and being cool online”, NG). Autistic girls did not mention this competition at all, suggesting that they were unaware of the dynamics between their neurotypical peers. One older girl (18 years), mentioned that she did not want to “drag [her friend] down by making her talk to someone who was not cool, like me” (AG). This was the only recognition by any autistic girl that there may be a social cost to their behaviours beyond their closest friendships, or that their peers were evaluating them in a hierarchical way.

#### **2.5.3.2 Boys.**

In contrast to the themes emerging from the girls' interviews, boys talked about activity-focussed, practical elements of friendship, and these patterns were common regardless of diagnostic status. I identified four themes (see Figure 2).

All boys talked about friends as *people they do things with*, rather than focussing on emotional closeness like girls. These activities ranged from online gaming (“we made an actual chessboard out of blocks [in Minecraft]”, AB) to sports (“we go down to the street and play football”, NB) but friendships were generally described as based on shared interests and the time spent pursuing them. This was particularly true for autistic boys, who talked about choosing friends based on shared interests and proximity (being in the same class, or living nearby) rather than on getting on well as individuals: “sometimes [we] have a bit of chat in Chinese, I do Mandarin Chinese as a subject” (AB). Some boys explicitly framed these friendships in contrast to those of girls (“we do stuff together, not just sit and talk like girls”, AB), suggesting they see conversation-based friendships as undesirable.

The joking that went along with these shared activities was identified as the main cause of conflict for boys. *Taking it too far* was the normal response when asked what boys and their friends argued about, saying “if we find something that annoys someone we just keep bringing it up” (NB), and these instances were generally described as being relatively minor. There were a few autistic boys who said they “never” argued with their friends. These boys were less interested in friendships in general, however, and so may simply not have been engaging with their peers enough to reach the point of irritation and conflict.

This practical approach to friendship was also visible in boys’ discussions of *conflict resolution*. All boys talked about “just get[ting] on with it” (NB) or “just say[ing] sorry” (NB) when they argued with friends. They did not have any strong desire to talk over problems, possibly because the issues they were facing were very different to those girls discussed, such as “[someone] talking too much” (AB) or “open[ing] each other’s bags” (NB), and said that “things just get resolved quite quickly” (NB). Once boys had decided to move on from an argument, they felt it had no lasting impact on their friendship. Instead, disagreements with friends were generally seen as minor and therefore easily fixed: “we just say ‘sorry, we took it a bit far’” (AB).

Along with practical definitions of friendship, boys talked about what they meant by *friends are there for you*. Whereas girls focused on emotional and social support, boys concentrated more on practical support from their friends. They knew someone was their friend if they were “backing you up” (NB), and social support often took a practical form. Autistic boys also talked about friends being people who *do things for you*, such as helping with homework: “a helpful person that can help people with their work” (AB).

This focus on what people *do* within a friendship meant that autistic and neurotypical boys also differed in the types of friendships they had, similar to autistic and neurotypical girls. Autistic boys often said that friends were “people you play with” or “people you recognise”,

whereas neurotypical boys said that being a friend is “being there for a person” or “they’d always listen to you”. This suggests that autistic boys may be less discriminatory in who they consider to be a friend – if they recognise someone and play together, that person is their friend. In contrast, neurotypical boys emphasised having a set group of friends who they chose to share time with, and who are defined by factors such as shared humour and trust.

### ***2.5.3.3 Comparing girls and boys.***

Interestingly, one area in which neurotypical girls and boys agreed, beyond the themes highlighted by all participants, was their approach to *dating*. Neurotypical girls reporting using dating as a way of fitting in, and neurotypical boys shared this view: “they want to be popular”. While many participants were not dating, they described their peers as doing so, and frequently said that it was “to be cool” (NB), or to “fit in with the popular lot” (NG). As romantic relationships were generally thought of as more adult relationships, with many participants saying that it was for “when I am older” (NG), pursuing them was seen to be cool because it implied that someone was older and more sophisticated. Interestingly, some participants, particularly girls, rejected this view, saying that they felt “more mature” because they were not “spending ages going ‘he’s hot’” (NG) but instead focussed on their education: “You need to focus on your career and find a partner later” (NG).

Autistic adolescents had a highly variable attitude to dating, from total disinterest – “I don’t get it” (AB) – to it being one of their top priorities – “my friends and me, we’re obsessed” (AG). This latter attitude was particularly the case for autistic girls, with those who had boyfriends talking about them as their primary relationship – “I have L, who’s my boyfriend. But I’d say he’s my best friend” (AG) – often because it was too difficult to maintain more than one close relationship, so he became their best friend as well as their boyfriend.

It should also be pointed out, however, that the gendered nature of the themes discussed above were not universal, and there was a notable degree of variability of friendship and

conflict experiences within each gender group as well as between them. For example, one older autistic boy talked about how “people really care about being cool, and if you’re not, you can only be friends with other not cool people” (AB), showing a high level of awareness of the social hierarchy around him, and the relational tactics which are used to reinforce it. Equally, though, he followed this comment by saying “not that I care, I like being friends with the weird ones” (AB), suggesting that he cared less about being included in the ‘right’ groups than girls in general, including autistic girls. Similarly, a few autistic girls did not discuss relational conflict, instead saying like many autistic boys that they did not argue with people and did not have problems with their friends.

## **2.6 Discussion**

This data presented in this Chapter used mixed methods to examine gender differences in autistic and neurotypical adolescents’ friendships and conflict experiences. Contrary to previous research, my results revealed significant differences between autistic girls and boys. While autistic adolescents experienced more conflict in their best-friendship than neurotypical peers, the nature of this conflict differed, with autistic girls reporting more relational conflict than all other groups – an unexpected and novel finding. What was more expected from previous research (Sedgewick et al., 2016), however, was that the patterns of autistic girls’ conflict and friendship experiences echoed that of neurotypical girls, suggesting that they face similar social challenges.

### **2.6.1 The nature of autistic friendships compared to neurotypical peers.**

As in many previous studies (e.g., Bauminger & Kasari, 2008; Calder et al., 2013; Sedgewick et al., 2016), I used the FQS to examine how autistic and neurotypical adolescents perceived their best-friendship quality. This sample of autistic adolescents rated their best-friendship as less strong than that of neurotypical adolescents, as having less companionship, and being less helpful. Autistic adolescents also experienced more conflict in their best-

friendship than neurotypical adolescents. While previous work has yielded mixed findings on which features differ in autistic friendships, the current findings are generally in line with existing research (see Petrina et al., 2014, for review).

Yet my analysis of the FQS also found significant differences between girls and boys, regardless of diagnosis. Girls rated their best-friendships as stronger, closer, more secure, and more helpful than those of boys, which is consistent with gender differences reported in neurotypical friendship (Aukett, Ritchie, & Mill, 1988). The absence of an interaction between group and gender suggested that autistic girls' best-friendships are in some key ways qualitatively like those of neurotypical girls, rather than those of either autistic or neurotypical boys. These results speak against the notion that the friendship experiences of autistic girls and women should be quantitatively or qualitatively similar to those of autistic males, as posited by the EMB theory (Baron-Cohen, 2002).

The use of semi-structured interviews allowed for an in-depth analysis of the nature of friendships and conflict amongst autistic and neurotypical girls, and as discussed above, this autistic voice is an important element which is often missing from research (Milton et al., 2012). The themes identified clearly showed that the social experiences of girls were similar regardless of diagnosis, suggesting that autistic and neurotypical girls face similar social opportunities and challenges. Girls, regardless of diagnosis, had close friendships based around emotional sharing, talking, trust and spending time together, which would be expected given research on the friendships of neurotypical females (Aukett et al., 1988). Autistic girls, however, had fewer of these close friendships than neurotypical girls, tending to have one or two intense friendships – or relationships, in the case of those who were dating – because they found them hard work. Despite this, maintaining these friendships was deeply important to them. This result is in direct contrast to research suggesting that autistic people are fundamentally less socially motivated (Chevallier et al., 2012). It also concurs with the

conclusions presented by Lai et al. (2015) that autistic females have a greater “desire to interact with others” and have “one or few close friendships” (p. 13). Lai et al. suggest that some of these differences may come from the different social expectations autistic girls are facing, and thus a greater desire in girls to fit in through imitation (Kreiser & White, 2014).

### **2.6.2 The nature of adolescents’ conflict experiences.**

The fact that Friendship Strength and Conflict did not correlate is perhaps not surprising, as few people regularly have significant arguments with their best friends, which is the relationship which the FQS assesses. However, autistic participants did report more conflict in their best-friendships than neurotypical participants, suggesting that they do argue more often. It may be that autistic teenagers, who often struggle with ToM, make social faux pas (Baron-Cohen, O’Riordan, Stone, Jones, & Plaisted 1999) which lead to issues with their friends, but which are not considered overly serious. Interview data supported this interpretation, as autistic adolescents, particularly girls, talked about getting things wrong or potentially misinterpreting what people meant – but that their close friends helped them to navigate or resolve these problems.

In line with previous research (e.g., Humphrey & Symes, 2010), autistic adolescents were involved in significantly more peer conflict than neurotypical adolescents, particularly as victims (Humphrey & Hebron, 2014). Notably, autistic girls self-reported higher Total Victimhood than all other groups on the RPEQ, which was corroborated by interview data. Girls felt that this conflict was due to falling short of social expectations (see also Eagly, Wood, & Diekmann, 2000). They reported feeling that their neurotypical peers punished them for not ‘getting it’ socially, either making them the butt of jokes or excluding them from social groups. Many autistic girls talked about instances when peers had suddenly decided that they were not friends anymore, often because the girl herself was considered “odd” or “uncool”. While girls were more likely to be victims of relational conflict, as expected from neurotypical research

(Crick & Grotpeter, 1995), autistic girls were nevertheless more often victims than their neurotypical peers.

The high levels of relational victimhood amongst autistic girls contrasted with the finding that autistic adolescents were more likely to be involved in overt conflict. This apparent contradiction was driven by high overt conflict levels amongst boys, which fits with existing research on typical conflict patterns between the genders (Smith, Rose, & Schwartz-Mette, 2010). It may also be that these overt conflict behaviours, such as being threatened, are more concrete and easier for autistic adolescents to identify and report (Humphrey & Lewis, 2008). Considering this, there are (at least) two possible explanations for the elevated levels of relational conflict reported by autistic girls. First, it is possible that autistic girls have higher levels of self-insight and social awareness than autistic boys, meaning that they are more sensitive to relational aggressions. Second, the degree and nature of conflict experienced by autistic girls may be elevated to such an extent that it has a significantly greater impact on them. Data from both the SRS-2 scores and interviews suggest that a combination of these possibilities could explain our findings: although autistic girls were rated by their parents on the SRS-2 as having worse social awareness than autistic boys, they showed greater insight into their relationships than autistic boys in the semi-structured interviews, spending more time reflecting on them during the interviews. As the SRS-2 does not ask about behaviours within friendships, but only general social situations, it may be that it does not accurately capture how individuals behave with people they know well, explaining the discrepancy between SRS-2 and interview-based reports.

### **2.6.3 Gender differences in friendships and conflict experiences amongst autistic adolescents.**

The friendships of the autistic girls in this study were qualitatively different to those of autistic boys, as evidenced by the questionnaire and interview data discussed above. Alongside



friendship differences, conflict experiences and resolution strategies also appeared to differ significantly between autistic boys and girls. Autistic girls, like their neurotypical counterparts, faced mainly relational conflict, whereas boys faced overt difficulties. The strategies they employed to manage these conflicts were different, with girls either assuming it was their fault (due to their awareness that they often miss-step socially), or feeling that the conflict is unresolvable and withdrawing from the friendship. These strategies are not necessarily effective, as they can leave autistic girls vulnerable to manipulation by a peer who makes them feel as though they should do everything they say to 'make it better', or vulnerable to social exclusion and loneliness if they cannot resolve issues with their friends. In contrast, autistic boys talked about conflict more casually, as something which could be 'got over'. This may be because the conflict they experienced was mainly joking 'taken too far', which is less impactful than the relational aggressions girls faced. This pattern of findings mirrors research in neurotypical adolescents, which has demonstrated that girls tend to use more compromise and avoidance strategies than boys, who are more likely to use overt anger which dissipates (Owens, Daly, & Slee, 2005). In young neurotypical men and women (18-22 years of age), women were found to use better negotiation strategies and be more effective at conflict resolution (Black, 2000; Brahnam et al., 1982). The interview data suggest that this is also true in adolescence, as neurotypical girls seemed to be better at negotiating with their peers, both from their own reports and according to autistic girls helped by neurotypical friends. That autistic girls struggle to do this themselves may be part of their difficulty resolving issues with their peers, as they are not using the strategies which are expected of and available to them. Future intervention work should target developing autistic girls' conflict recognition and management skills, such as understanding relational aggression and responding to it effectively.

Camouflaging can be significant in social settings as autistic people attempt to fit in with neurotypical peers. In research examining this phenomenon in adults, participants have described it as ‘putting on my best normal’, and men did so as well as women, although perhaps to a lesser degree (Hull et al., 2017). In the study presented in this Chapter, autistic girls discussed consciously behaving in certain ways in order to appear more like their neurotypical peers, although, interestingly, to no greater degree than the neurotypical girls, who also reported adopting certain behaviours to fit in. In this way, it is possible that camouflaging could just be a ‘normal’ part of growing up female. It may also be that the late-diagnosed women in the study by Hull et al. (2017) had different experiences of camouflaging, as they had grown up in a society which was potentially less accepting of neurodiversity than girls who are currently being diagnosed in adolescence. Understanding how autistic females’ relationships develop through early adulthood is an issue that I pursue and examine directly in Chapter Four.

## **2.7 Limitations**

There were some limitations to this study. First, repetition between the ADOS-2 ‘Friends and Marriage’ section and some interview questions was inevitable, but this was managed by the researcher acknowledging earlier answers and asking for elaboration, rather than simply repeating the enquiry. It is also possible that some participants may have interpreted questions literally, a known feature of autistic understanding (Mitchell, Saltmarsh & Russell, 1997). For example, when asked “What is different about people you go to school with and your friends?”, one autistic boy initially responded by telling me about his journey to school, and so it was necessary to clarify that I was asking about classmates in general rather than just the people he travelled with. Nevertheless, as all testing was carried out by a single researcher, these issues were minimised by talking participants through any confusion, and through the early development of prompt questions in an attempt to predict any difficulties that might arise. Second, it was not possible to contact nominated best-friends to check reciprocity

or their views, as some previous work has (Calder, Hill, & Pellicano, 2013; Kasari, Locke, Gulsrud & Rotheram-Fuller, 2011), nor did I ask parents to rate their child's friendships (for example, Bauminger & Shulman, 2003), which would have provided an additional perspective. While reciprocity information within social networks might have been useful to analyse, this would not have revealed much about subjects such as 'network centrality', which is how these data are normally used, as participants all came from different schools in different parts of the UK. Parental ratings of their child's best-friendship would also have been interesting, but I was unable to find a validated measure to address this topic. In Chapter Five, however, I present data from the interviews with parents of the autistic girls in this study, in which parents discussed these issues in depth. I also feel that it is important that this study focused on young people's views of their own friendship experiences – views that are much under-represented in research (Pellicano, Dinsmore & Charman, 2014) – as how they experience and value their friendships and peer interactions is what shapes their wider expectations, as in the work of Humphrey and Symes (2010).

## **2.8 Conclusion**

This mixed-methods study develops a holistic understanding of how young autistic and neurotypical people perceive their friendships and conflict within them. The research showed that autistic adolescents have best-friendships they rate as like those of neurotypical adolescents, although autistic boys' friendships are qualitatively different to those of autistic girls. I found that, in line with previous work, autistic adolescents are bullied more than their neurotypical peers – largely driven by the relational victimisation of autistic girls, who are very aware of 'getting things wrong' in their friendships. This conflict impacts on their wider relationships, but they have best-friendships which are like those of neurotypical girls, both in nature and degree. These findings challenge some assumptions in the literature that being autistic 'overrides' being female in some way, as evidenced by the use of majority-male

samples to derive results that are applied to both genders (Bauminger et al., 2008; Bauminger and Kasari, 2000; Rowley et al., 2012).

This study clearly shows that autistic boys and girls have very different social experiences, and adds to a growing body of work supporting the idea that autistic girls (and possibly women) need different support in understanding and navigating the social expectations placed upon them. The findings suggest that parents and professionals should be aware that females may challenge the stereotypical views that autistic people struggle to make and maintain close relationships. Autistic people, especially autistic girls, clearly do form these friendships, and the presence of these should not be taken as an indication that they are therefore 'not autistic' or not impacted by their condition.

In this Chapter, I presented data that addressed key questions regarding the nature of autistic adolescents' friendships and conflict experiences, and whether these experiences differed by gender and diagnosis. Critically, some of the answers to these questions were revealed through the interviews of the autistic adolescents themselves – an unfortunate rarity in the extant literature. The differences in friendships and conflict experiences identified, not just between girls and boys but also within each gender group, in this Chapter, progressed my thinking to considering which factors might contribute to these experiences, and this is what I will present in Chapter Three. I wanted to examine which factors might contribute to these experiences, following the themes identified in Chapter One, and which were present in the interviews with adolescents. For example, the difficulties with reading others described by autistic girls echoes the idea that social awareness skills may play a role in friendships and conflict experiences; the social anxiety (and following friendship insecurity) discussed by autistic (and neurotypical) girls directly mirrors research on anxiety and friendships in neurotypical individuals; and the challenges of inhibiting the desire to keep pushing a joke seen

in boys (which speaks to self-regulation skills), all suggest that these areas are worth investigating.

### **Chapter Three: Examining gender differences in the key predictors of friendship and conflict experiences**

As important as it is to know that autistic girls and boys are facing different social experiences and challenges, that they rate their friendships differently, and that they are bullied at different rates and in different ways as shown in Chapter Two, it is also important to understand what might contribute to these friendship and conflict involvement outcomes. This knowledge may in the future help to develop support programmes and interventions which target areas for support to help autistic adolescents, particularly autistic girls, to make and maintain positive friendships and either avoid or successfully manage social conflict with their peers.

In this Chapter, three key potential contributing factors were identified from the existing literature and investigated – social awareness, self-regulation, and anxiety. These variables were entered into a linear regression model to attempt to determine which individual features could help to anticipate positive social outcomes and which could be targeted for support to improve outcomes. Friendship Strength (on the FQS) was selected as one of the outcome variables to model, as Friendship Strength covers the quality of adolescents' best-friendship, which is their most important peer relationship. Victimization (on the RPEQ) was selected as this reflects the level of aggression which adolescents are subjected to by their peers, which the literature discussed in Chapter One has shown to have significant impacts on quality of life and educational and adult outcomes. Following the gender differences seen in Chapter Two – that girls have stronger friendships than boys regardless of diagnostic status, and that girls experience relational conflict at much higher rates than boys experience overt conflict – I decided to develop separate models for girls and boys. In boys, the interaction between autism

and anxiety was the only significant predictor of Victimization, but in girls, anxiety and social awareness were the significant predictors.

In Chapter Two, the adolescent interviews showed that there were a range of factors that could contribute to their friendship and conflict experiences. Following the literature described in Chapter One, autistic participants described having difficulties with understanding what their neurotypical peers meant or intended towards them (social awareness difficulties), some challenges with knowing when to stop or losing their temper with peers (self-regulation), and worrying about whether their friendships were genuine and whether they were “getting things wrong” (anxiety). Existing literature has shown that challenges in all these areas can contribute to difficulties with social relationships or with being bullied, in both autistic and neurotypical young people. For example, Crawford and Manassis showed that those with poorer social skills had less strong friendships (2011), and difficulties with social interactions are part of the diagnostic criteria for autism (APA, 2000; 2013). Similarly, adolescents who struggled to control their emotional outbursts towards their peers were less likely to be chosen as work or play partners (Melnick & Hinshaw, 2000). Finally, there has been a wealth of work on the role of social anxiety in creating less strong and less supportive friendships (La Greca & Lopez, 1998; Vernberg et al., 1992), and work showing that social anxiety is significantly elevated in autistic individuals (Kim, 2000; White et al., 2009), and it may be that this anxiety impacts on the friendships and bullying experiences of autistic adolescents.

### **3.1 Social Awareness**

Difficulties with social awareness and with understanding and predicting the state of mind of other people, are a behavioural feature of autism, often conceptualised through ToM. ToM differences are posited as an explanation for many of the challenges autistic people face (Baron-Cohen, Leslie, & Frith, 1985; Baron-Cohen & Tager-Flusberg, 2013). It is reasonable to assume that people who struggle to understand the feelings and motivations of other people

may end up in more conflict than those who have more developed skills in these areas, as they may react in ways which seem odd or unreasonable to their peers. Previous research in boys with ADHD has shown that peers react more negatively to individuals who have more extreme or more anger-oriented reactions (Melnick & Hinshaw, 1995). Amongst female adolescents, who are likely to use more subtle strategies such as sarcasm to convey dislike or to establish a social hierarchy, missing these cues may mark an individual out as less socially skilled than her peers (Adler, Kless, & Adler, 1992), and this is likely to lead to her being perceived as having lower social standing, making her an easier target for further bullying (Leff, Kupersmidt, & Power, 2003).

In autism research specifically, some work has attempted to examine the links between social awareness and friendship. Calder et al. (2013) used the Strange Stories Test (Happé, 1994) to index social awareness, and investigated whether this acted as a source of variability in children's friendships. This study did not find any significant relationship between the two, but this may have been due to the limited sensitivity of the measure, and the smaller sample size of the study (n=12 autistic participants, n=11 non-autistic participants), meaning that there was not the degree of variability in outcome scores which is needed to conduct correlational analyses. These studies emphasise that there is the potential for social skill and social awareness to play a role in the friendships and conflict experiences of autistic young people, which will be examined in this Chapter.

### **3.2 Self-Regulation**

Self-regulation is a construct which covers an individual's ability to recognise and manage their responses to both the situations they are in and their own internal emotional states (Baumeister & Heatherton, 1996). It includes, but is not exclusively limited to, features such as emotional regulation, with higher skills in neurotypical university students being linked to friendships which are rated as more reciprocal and sensitive (Lopes, Salovey, Cote, Beers, &



Petty, 2005). Self-regulation also includes aspects such as levels and types of coping strategies, as an individual has to be in control of their emotional and behavioural response to create an adaptive coping strategy (Aspinwall & Taylor, 1997). There is some evidence that preferred type of coping strategy differs by gender, with females more frequently using socially-oriented coping styles and males more frequently using problem-solving approaches (Copeland & Hess, 1995; Eschenbeck, Kohlmann, & Lohaus, 2007), and it may be that this pattern exists in adolescents and has an impact on how boys and girls manage peer conflict regardless of diagnostic status.

As it has been shown that even in the early years of life autistic boys as young as 5 display more avoidant strategies (Jahromi, Meek, & Ober-Reynolds, 2012), it may be that autistic participants have fewer proactive coping strategies and that this makes it harder for them to respond effectively to difficulties in their relationships. Emotion regulation has been identified as a particular challenge for some autistic people (Samson, Huber, & Gross, 2012), and this, along with the self-regulation ability to control behavioural responses, has been linked to poorer peer engagement (Jahromi, Bryce, & Swanson, 2013). It is also reasonable to expect that analyses would reveal gender differences in self-regulation skill and behavioural problems between autistic girls and boys, which may result in there being different relationships between these factors and their social experiences. Dworzynski et al. (2012) found that autistic girls have fewer behavioural problems than autistic boys, which may contribute to their being diagnosed later than boys, and self-regulation may play a role in this being the case.

### **3.3 Anxiety**

There is a wealth of research on the impact of anxiety on friendship outcomes, and which justifies the inclusion of this construct in any potential model. Amongst neurotypical adolescents it has been shown that greater anxiety levels are linked to greater social isolation and more peer difficulties (Rubin, Coplan, & Bowker, 2009). Anxious adolescents have been

found to have friendships which are less strong and stable (La Greca & Lopez, 1998). Adolescents who have high levels of social anxiety have also been shown to be more likely to be bullied (Storch & Masia-Warner, 2004), which suggests that anxiety may play into conflict levels in this study as well as into friendship strength.

This pattern has also been seen in male autistic adolescents, who have higher anxiety levels than their neurotypical peers, and who also were found to have fewer and poorer quality friendships (Mazurek & Kanne, 2010). Whether this pattern is also true for autistic females has not yet been studied, but it is reasonable to assume that it may be, as it is well-established that anxiety levels are generally higher both in women (Weinstock, 1999; Angst & Dobler-Mikola, 1984) and in autistic individuals (Kim et al., 2000; White et al., 2009), and so autistic girls who represent the intersection of these groups are incredibly likely to have elevated anxiety, which impacts on their friendship formation and maintenance. The recent ‘Know Your Normal’ report (Crane, Adams, Harper, Welch, & Pellicano, 2017) highlighted the impact that anxiety (and other mental health issues) can have on the overall lived experience of autistic young people. This report involved talking to 16- to 25-year olds about their experiences of mental health problems and being on the autism spectrum, and the participants chose to focus on anxiety as one of the key issues they face in their everyday lives. Considering that both autistic people themselves, and research, identify anxiety as a crucial influence on autistic people’s experiences, I decided it was important to include a measure of anxiety in this study.

### **3.4 The Current Study**

The overarching aim of this Chapter was to examine the underlying nature of the relationships of social awareness, self-regulation, and anxiety to friendship and conflict outcomes for adolescents. To address this issue, I first examined whether there were differences between autistic girls, autistic boys, neurotypical girls, and neurotypical boys in terms of their scores on tasks and questionnaires indexing each of the potential predictive factors (social

awareness, self-regulation and anxiety). I expected girls to have higher levels of social awareness than their male counterparts, regardless of diagnostic status, as evidenced by higher scores on The Awareness of Social Inference Test (TASIT: McDonald, Flanagan, Martin, & Saunders, 2004). I also expected girls to show better self-regulation skills than boys, both autistic and neurotypical, as indexed by higher scores on the self- and parent-report Social Emotional Assets and Resiliencies Scale (SEARS-Adolescent and SEARS-Parent; Merrell, 2011). I also expected that girls would have higher anxiety levels than boys, measured by the Spence Children's Anxiety Scale (SCAS; Spence, 1998), regardless of diagnostic status (La Greca & Lopez, 1998). Therefore, I predicted that autistic girls would have higher anxiety than autistic boys, and neurotypical girls would have higher anxiety levels than neurotypical boys.

I then conducted correlational analyses to determine the potential links between scores on these factors and the two outcome variables of interest, Friendship Strength (on the FQS) and Victimization (on the RPEQ), within each gender separately, as suggested by the results of Chapter Two. These two outcome variables were chosen as they represent the positive friendship experiences (Friendship Strength) and the negative conflict experiences (Victimization) of the adolescent participants. I expected that social awareness, self-regulation, and anxiety would all contribute significantly to an individual's abilities in identifying and managing conflict within their relationships. I predicted that greater anxiety would contribute to poorer friendship and conflict outcomes, such as lower Friendship Strength scores on the Friendship Quality Scale (FQS: Bukowski et al., 1994) and higher Victimization scores on the Revised Peer Experiences Questionnaire (RPEQ: Prinstein & Boergers, 2001), regardless of gender or diagnostic group.

Finally, I present the results of multiple regression analyses which examine the degree to which the three hypothesised factors (social awareness, self-regulation, and anxiety) predict the level of the outcome variables (Friendship Strength and Victimization) for boys and girls.

The pattern of relationships between the potential predictive factors (social awareness, self-regulation, and general anxiety) and friendship strength and conflict levels was expected to be different for boys and girls, regardless of diagnostic status, as results from Chapter Two showed that social experiences are more similar by gender than by diagnostic group.

Statistical modelling is a technique through which you can examine the impact of hypothesised predictors on the outcome variables of interest – in this case, Friendship Strength and Victimization levels. Linear regression was chosen for use in this Chapter because it allowed me to enter multiple variables into the equation simultaneously. This was done because I had no a priori assumptions about which of the three hypothesised predictors would have the most impact on the outcomes.

The analyses in this Chapter were divided by gender, following the findings of Chapter Two that the social experiences and outcomes of autistic boys and girls were more similar to those of their gender-peers than their diagnosis-peers. This was the case both in the quantitative and qualitative data, with autistic girls having both questionnaire scores and interview responses which were more like those of neurotypical girls than autistic boys, or even than neurotypical boys. It is also the case that the existing literature, as outlined in Chapters One and Two, supports the notion that friendship and conflict differ significantly by gender in neurotypical individuals. Therefore, it would potentially be misleading to combine the data by diagnostic status rather than gender, as we would expect (and found, in Chapter Two) significant differences between the neurotypical boys and girls. Presenting these groups as one in a model would mean that these differences were obscured, giving an inaccurate impression of the results. It is also reasonable to expect that different factors may contribute to the different friendship and conflict outcomes of adolescent boys and girls, following both previous studies and the findings in Chapter Two. These gender differences might be lost in a model that included all the participants, as there is some overlap in the total scores on the outcome

variables (see Tables 3.4 and 3.5). While it would be possible to account for these gender effects through adding interaction terms to the model (for example, by adding an anxiety x gender interaction term), this would have added an excessively high number of extra variables to the model.

The sample size of 102 participants for this study while reasonably large, is not sufficient to warrant the inclusion of additional variables, as there would not be enough statistical power to confidently identify statistically significant differences. I therefore sought to combat reductions in power by only including those predictor variables which were correlated with the two dependent outcome variables. I also calculated a combined z-score for the tests I used as a proxy for self-regulation, further reducing the number of predictor variables by including just one self-regulation variable rather than two. Limiting the predictor variables, as well as only using two outcome variables, means that I was producing a fitting number of models from the available data, rather than conducting inappropriate multiple analyses.

To control for Type 1 errors, a conservative p-value was used ( $p=.01$ ) in assessing correlations and regression models. While it would have been possible to carry out Bonferroni adjustments with the data, which is even more conservative, I decided that it was not necessary to report because it gave the same outcomes as applying the .01 p-value in terms of which results were and were not significant. To control for Type 2 errors, I calculated effect size estimates for all analyses. These clarify whether the significant finding has a small or large effect size. A small effect size could imply that a finding is a false positive, whereas large effect sizes show a clear result. This combination of approaches gives a high level of confidence in the accuracy of the findings.

## **3.5 Method**

### **3.5.1 Participants.**

All participants in Chapter Two (27 autistic girls, 26 autistic boys, 26 neurotypical girls, and 23 neurotypical boys), were also given a range of measures assessing the factors which were thought to potentially be useful in predicting friendship quality and conflict levels following the existing literature, which are described below.

Young people's parents also completed questionnaires about their child's behaviours and self-regulation abilities (the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) and the Social and Emotional Assets and Resiliencies Scale (SEARS; Merrell, 2011) alongside the SRS-2 described in Chapter Two. The parents of all participants but one participant (one autistic girl) completed all these measures, as the autistic girl took part without her parents' knowledge. As this participant was 18 years old, she was capable of giving consent without parental consent alongside, and so her data was included for all measures except the analyses of parent-measure data. This decision resulted in there being minimal missing data across the dataset.

### **3.5.2 Measures.**

The measures which were administered in order to assess the predictive power of social awareness levels, anxiety levels, and self-regulation skills are outlined below.

#### ***3.5.2.1 Social Awareness: TASIT Social Vignettes – Part 3 (McDonald, Flanagan, Martin & Saunders, 2004).***

Participants completed a video measure, which features a set of social vignettes, to measure their level of social understanding. The TASIT is a 3-part video task, with 16 vignette videos in each Part. Part 1 assesses how skilled the participant is at identification of emotions in a target character (“Are they happy, sad, angry, disgusted, scared, or surprised?”). Part 2

assesses how skilled a participant is at discriminating between a target character who is lying or who is being sarcastic (“Are they saying what they really mean?”). Part 3 of the TASIT taps participants’ ability to distinguish between sincerity, sarcasm, and lying, along with ToM understanding, by asking how multiple characters in the video are feeling or what they are thinking. I decided to use only Part 3 in this study both to utilise the most socially complex vignettes (as they ask participants to consider the views and feelings of multiple characters), and to avoid over-loading participants, as each Part takes approximately 30 minutes to complete and administering all three would have taken at least an hour and a half, adding an hour to an already extensive testing battery. The TASIT has been used successfully with autistic adults both as a measure of theory of mind (Mathersul, McDonald, & Rushby, 2013) and as a measure of intervention outcome (Murza & Nye, 2013), has been standardised with individuals aged 14 and above, and has been shown to be a reliable measure of social awareness (Cronbach’s  $\alpha = .62 - .78$ ).

To provide an example of a Part 3 vignette, a woman begins outside a changing room talking to a friend. She says “Oh yeah, he’s gained weight. He’s put on about 8 kilos”. She then goes into the changing room, where her husband asks her whether she thinks he’s put on weight. She says “No, it’s just that mirror. It makes everyone look big”. Participants are then asked four key questions: (1) Is she telling him that he has put on weight? (2) Is she saying that he has not put on weight? (3). Does she think he has put on weight? and (4) Is he pleased with her? Participants are asked four similar questions about each vignette, with Yes/No/Don’t Know as the possible answer options. Each correct answer is given one point, such that for each vignette a participant could gain a maximum of 4 points, yielding a maximum score of 64 for the whole measure. The four questions about each video are divided into four categories – Do, Say, Think, and Feel. This reflects the fact that the first question asks about what the target character is ‘doing’, e.g. ‘Is she telling him that he has put on weight?’; the second asks about

what the target character is 'saying' e.g. 'Is she saying that he has not put on weight?'; the third question asks what the target character is thinking e.g. 'Does she think he has put on weight?'; and the final question asks about what the target character is feeling, e.g. 'Is he pleased with her?'. In this sample, Cronbach's  $\alpha$  was .73 for neurotypical participants and .64 for autistic participants, similar to the reliability given for its use with the original samples. This high level of reliability justifies the use of the TASIT with adolescents slightly younger than those it was originally standardised with, as it shows that younger participants were still able to engage with the TASIT with a similar level of reliability to older individuals, as shown by the similarity in the Cronbach's  $\alpha$  scores.

### ***3.5.2.2 Self-Regulation: Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997).***

The Strengths and Difficulties Questionnaire (SDQ: Goodman, 1997) is a widely-used 25-item questionnaire which measures levels of emotional symptoms (e.g., 'Is often depressed or down-hearted'), conduct problems (e.g., 'Does what parents and teachers say' (negatively scored), hyperactivity (e.g., 'Finds it difficult to concentrate'), peer problems (e.g., 'Is often teased or bullied'), and signs of anxiety (e.g., 'Finds it difficult to leave parents'), alongside prosocial behaviour levels (e.g., 'Shares with others'). Five of the six subscales focus on difficulties, and one focuses on strengths (prosocial behaviour). The SDQ is a well-validated measure which has been used in autism research previously (Allik, Larsson, & Smedje, 2006; Iizuka et al., 2010), justifying its inclusion in this testing battery. The fact that it has directly comparable adolescent- and parent-report- versions was also considered a strength of the measure, as this allowed for multiple informant perspectives on the issues it covers. I decided to give both versions of the SDQ to access views from both adolescents and parents on the behaviours of the adolescent participants, which is important as research has suggested that



autistic adolescents may struggle to accurately report on their own difficulties (Mazefsky, Kao, & Oswald, 2011).

Each item is rated as ‘not true’, ‘somewhat true’, or ‘certainly true’, and responses are based on the child’s behaviours over the last 6 months. Depending on the wording of the item, ‘not true’ is scored as either 0 or 2, as is ‘certainly true’, while ‘somewhat true’ is always scored as 1. Higher scores represent greater difficulties in each area, or more prosocial behaviours for that subscale. It is used as a screening measure for hyperactivity and anxiety issues. There is both an adult version, which was given to parents, and a self-report version, which was given to adolescents. Example items (adolescent wording first, parental equivalent second) include ‘I am restless, I cannot stay still for long/Is restless, cannot stay still for long’ and ‘I am kind to younger children/Is kind to younger children’, and ‘I worry a lot/Has many worries’. For the adolescent version, reliability in our sample was good, with neurotypical Cronbach’s  $\alpha$  being .72 and autistic  $\alpha$  being .67. This strong reliability was also present in the parent-report version, with Cronbach’s  $\alpha$  = .69 for autistic adolescents, although reliability was much lower amongst the parents of neurotypical adolescents at  $\alpha$  = .36 – an issue that I return to in the Discussion.

### ***3.5.2.3 Social Emotional Assets and Resilience Scale (SEARS) (Merrell, 2011).***

The SEARS questionnaires examine social insight, emotional regulation and resilience. There are two different versions, the SEARS-Adolescent (SEARS-A) and SEARS-Parent (SEARS-P), including a 35-item self-report for adolescents and a 39-item measure for parents, both of which were used in the current study. I decided to use both the adolescent- and parent-report versions of this questionnaire in this study because this would allow me to access different perspectives on how adolescents used these behaviours, and it is well-validated in both groups. All informants rate statements about themselves or their child (e.g., ‘Is confident talking to lots of different people’, ‘I feel accepted and comfortable at school’, ‘I know how to figure out if negative thoughts are realistic’) on a 4-point Likert scale scoring from 0 (never)

to 3 (always), for a maximum score of 105 for the adolescent version and 117 for the parent version. Higher scores represent greater abilities in each subscale – Self-Regulation, Social Competence, Empathy and Responsibility. The total and subscale scores have high levels of reliability (Cronbach's  $\alpha = .96 - .98$  for these total and subscales) and has previously been used with typically developing adolescents only. Although this meant that the utility of the measure with autistic adolescents was uncertain, I decided to use it because the aspects of personal and social development it measures are also relevant to autistic adolescents. As autistic adolescents take part in the same social situations and interact with their peers on the basis of the same underlying skills and abilities, regardless of the level of ability they possess, it is worth measuring these and including them in the study. Including this measure also meant that I had one measure which focussed on difficulties, in the SDQ, and one which focussed on strengths, in the SEARS. It was important to me to also consider the skills which autistic adolescents may possess, alongside the things they find challenging, as much autism research has focussed on difficulties without including a positive viewpoint as well. In my sample, Cronbach's  $\alpha = .91$  for neurotypical self-report and  $\alpha = .92$  for autistic self-report, and was  $\alpha = .94$  for the parents of neurotypical adolescents and  $\alpha = .88$  for the parents of autistic adolescents. These similar, and high, levels of reliability suggest that the SEARS is valid for use with autistic adolescents and their parents.

#### ***3.5.3.4 Anxiety – Spence Children's Anxiety Scale (SCAS) (Spence, 1998).***

The Spence Children's Anxiety Scale (SCAS) is a self-report questionnaire that measures participants' anxiety levels. I selected the SCAS for use in this study because it has been widely used with autistic populations in previous research (Gillott, Furniss & Walter, 2001; Neil, Olsson, & Pellicano, 2016), and has been validated with autistic, as well as neurotypical, young people. It is also easily accessible for young people, with simple language and examples of items which might fall into categories of things they are anxious about (i.e.,

after the question ‘I am scared of using public transport’, it gives a list of examples – ‘buses, trains, trams’). This extra level of detail and clarity makes it particularly useful for autistic young people, who tend to have a preference for precision as part of the condition (APA, 2013). I decided to use the SCAS rather than other measures of anxiety in adolescents, such as the Beck Anxiety Inventory (Beck & Steer, 1988), because of this clarity and detail, as the Beck Anxiety Inventory does not give examples for participants to refer to.

The SCAS has 38 items (e.g. ‘I worry about things’, ‘I am scared of dogs’, ‘When I have a problem, I feel shaky’) that participants rate on a 4-point scale of ‘never’ (0), ‘sometimes’ (1), ‘often’ (2), and ‘always’ (3). It has high levels of reliability ( $\alpha = .92$ ) and has been used with a range of populations, including autistic children (Gillott, Furniss, & Walter, 2001; Russell, Sofronoff, Russell, & Sofronoff, 2005). Although standardised with children between 8 and 12 years old, it has also been tested with adolescents and shows excellent reliability ( $\alpha = 0.93$ ) (Muris, Merckelbach, Ollendick, King, & Bogie, 2002), with sensitivity to gender- and age-based differences (girls report more anxiety than boys, and anxiety decreases with age on all subscales bar Social Phobia, which increases between 9 and 12 years old) (Spence, 1998). In our sample, reliability was  $\alpha = .55$  for neurotypical adolescents and  $\alpha = .85$  for autistic adolescents.

### **3.7 General Procedure**

These measures were administered to adolescents during the same session(s) as those discussed in Chapter Two. The TASIT was presented first, followed by the SDQ-A, SEARS-A, and SCAS. Parents completed questionnaires (SDQ-P, SEARS-P) either during the session or returned them by post.

### **3.8 Data Analysis**

Data from questionnaires and video measures (TASIT, SDQ-A, SEARS-A, SCAS, SDQ-P, and SEARS-P) were analysed using SPSS. A series of between-group ANOVAs with group (autistic, neurotypical) and gender (female, male) as the factors were conducted on the total and sub-scale scores of each measure.

### **3.9 Results**

To begin, I report the results of between-group analyses on social awareness (TASIT), then self-regulation (SDQ-A, SEARS-A, SDQ-P, SEARS-P) and then anxiety (SCAS).

Individual differences within each group on the factors which were hypothesised to predict friendship quality and conflict levels (social awareness, self-regulation and anxiety), were analysed through correlations and regression analyses. These analyses were carried out separately by gender, following the findings of Chapter Two.

#### **3.9.1 Between-groups analysis.**

##### **3.9.1.1 Social Awareness.**

Using the TASIT, total and sub-scale scores (Lie and Sarcasm scores; Do, Say, Think, and Feel scores) were assessed in autistic and neurotypical boys and girls. Means (SD), ranges, and  $F$ -values from ANOVA analyses are presented in Table 3.1.

A 2 (group: autistic, neurotypical) x 2 (gender: male, female) ANOVA on TASIT total scores revealed no significant effects of group, or gender, with no group x gender interaction. This pattern was also found for the Lie and Sarcasm subscales of the TASIT, with all  $F$  values being less than 1. On the Do subscale, there were no significant effects of group or gender, and no group x gender interaction. For the Say subscale, there were no significant effects of group or gender, and no group x gender interaction, with all  $F$  values  $<1$ . On the Think subscale, the pattern was the same, with no significant effects of group or gender, with  $F$  values less than 1,

and no significant group x gender interaction. For the Feel subscale, there was a significant effect of group, with autistic adolescents being less accurate at identifying how target characters were feeling,  $F(1, 98)=9.61$ ,  $p=.003$ ,  $\eta_p^2=.09$ , but no significant effect of gender,  $F<1$ , and no group x gender interaction.

Table 3.1.

*The Awareness of Social Inference Test (TASIT) Total and subscale scores by gender (boys, girls) and group (autistic, neurotypical).*

<b>Group</b>	<b>Autistic Boys</b>	<b>Autistic Girls</b>	<b>Neurotypical Boys</b>	<b>Neurotypical Girls</b>	<b>ANOVA - Group</b>	<b>ANOVA - Gender</b>	<b>ANOVA – Group x Gender</b>
	M (SD) Range	M (SD) Range	M (SD) Range	M (SD) Range	F value ( <i>p</i> )	F value ( <i>p</i> )	F value ( <i>p</i> )
TASIT Lie	23.38 (4.38) 14 - 29	23.67 (3.65) 18 - 30	23.52 (3.16) 18 - 30	24.00 (4.43) 18 - 32	.09 (.77)	.23 (.63)	.02 (.90)
TASIT Sarcasm	16.65 (3.83) 12 - 29	17.52 (4.85) 9 - 31	17.22 (2.98) 11 - 21	17.96 (5.02) 11 - 29	.35 (.56)	.89 (.35)	.09 (.94)
TASIT Do	10.50 (2.30) 6 - 15	12.04 (3.09) 7 - 16	11.30 (1.89) 8 - 15	11.12 (2.52) 6 - 16	.01 (.91)	1.82 (.18)	2.99 (.09)
TASIT Say	9.88 (2.00) 7 - 15	10.37 (2.06) 7 - 14	10.43 (2.13) 7 - 14	10.15 (2.54) 6 - 15	.15 (.70)	.06 (.82)	.78 (.82)
TASIT Think	9.50 (3.08) 4 - 14	9.00 (3.26) 4 - 14	8.17 (3.01) 3 - 14	10.83 (1.58) 7 - 13	.89 (.35)	.12 (.73)	1.26 (.26)
TASIT Feel	10.15 (2.44) 4 - 15	9.78 (1.97) 5 - 14	10.83 (1.58) 7 - 13	11.58 (2.10) 4 - 15	9.61 (.003)*	.22 (.64)	1.99 (.16)
<b>TASIT Total</b>	<b>38.50 (10.18)</b> <b>26 – 58</b>	<b>41.19 (6.38)</b> <b>28 – 52</b>	<b>40.74 (4.76)</b> <b>34 – 50</b>	<b>41.96 (8.65)</b> <b>30 – 60</b>	<b>.94 (.34)</b>	<b>1.58 (.21)</b>	<b>.22 (.64)</b>

*Note:* \* denotes significance at the .05 level, \*\* denotes significance at the .01 level

### 3.9.1.2 Self-Regulation: SDQ

Results from the self-regulation measures will be presented in the same order as in the Measures section above (SDQ, SEARS), with adolescent self-rated measures presented first, followed by the parent-rated measures. Overall and subscale scores are presented in Table 3.2.

On the SDQ-Child Total score, there was a significant effect of group,  $F(1, 98)=49.71$ ,  $p<.01$ ,  $\eta_p^2=.34$ , with autistic adolescents having more difficulties than neurotypical adolescents, but no significant effect of gender,  $F<1$ , and no group x gender interaction,  $F(1, 98)=1.42$ ,  $p=.23$ ,  $\eta_p^2=.01$ . On the Externalising subscale there was a significant effect of group,  $F(1, 98)=19.46$ ,  $p<.01$ ,  $\eta_p^2=.17$ , with autistic adolescents having more difficulties than neurotypical adolescents, but not of gender,  $F(1, 98)=2.67$ ,  $p=.11$ ,  $\eta_p^2=.3$ , and no significant group x gender interaction,  $F<1$ . On the Internalising subscale, there was a significant effect of group,  $F(1, 98)=47.18$ ,  $p<.01$ ,  $\eta_p^2=.33$  with autistic adolescents having more difficulties than neurotypical adolescents, but not gender,  $F(1, 98)=1.21$ ,  $p=.28$ ,  $\eta_p^2=.01$ , and there was no significant group x gender interaction,  $F(1, 98)=1.96$ ,  $p=.17$ ,  $\eta_p^2=.02$ .

On the Emotional Problems subscale there was a significant effect of group,  $F(1, 98)=21.10$ ,  $p<.01$ ,  $\eta_p^2=.18$ , with autistic adolescents having more difficulties than neurotypical adolescents, and gender,  $F(1, 98)=4.42$ ,  $p=.04$ ,  $\eta_p^2=.04$ , with boys having more difficulties than girls, but no significant group x gender interaction,  $F(1, 98)=1.89$ ,  $p=.17$ ,  $\eta_p^2=.02$ . On the other subscales (Conduct Problems, Hyperactivity, and Peer Problems) there was a consistent pattern of a significant effect of group ( $ps<.01$ ), but no significant effect of gender ( $ps<.12$ ), with no significant group x gender interactions ( $ps>.24$ ). On the Prosocial subscale, there was a significant effects of group,  $F(1, 98)=17.28$ ,  $p<.01$ ,  $\eta_p^2=.15$ , and gender,  $F(1, 98)=5.25$ ,  $p=.02$ ,

$\eta_p^2=.05$ , but no significant group x gender interaction,  $F<1$ . Across these subscales, autistic adolescents and boys had more difficulties than neurotypical adolescents and girls.



Table 3.2

*The Strengths and Difficulties Questionnaire Child (SDQ-C) Total and subscale scores by gender (boys, girls) and group (autistic, neurotypical).*

<b>Group</b>	<b>Autistic Boys</b>	<b>Autistic Girls</b>	<b>Neurotypical Boys</b>	<b>Neurotypical Girls</b>	<b>ANOVA – Group</b>	<b>ANOVA – Gender</b>	<b>ANOVA – Group x Gender</b>
	M (SD) Range	M (SD) Range	M (SD) Range	M (SD) Range	F value ( <i>p</i> )	F value ( <i>p</i> )	F value ( <i>p</i> )
Emotional	3.96 (2.46) 0 – 9	5.52 (2.50) 0 – 9	2.52 (2.15) 0 – 8	2.85 (1.83) 0 – 7	21.10** (<.01)	4.42** (<.001)	4.42* (.04)
Conduct	3.04 (1.93) 0 – 7	2.81 (2.04) 0 – 7	2.13 (1.22) 0 – 4	1.31 (1.38) 0 – 5	12.91** (<.01)	2.42 (.12)	.80 (.38)
Hyperactivity	5.31 (1.93) 0 – 7	4.96 (2.64) 0 – 10	3.91 (2.27) 0 – 10	2.88 (2.34) 0 – 8	14.47** (<.01)	2.62 (.17)	.56 (.46)
Peer Problems	4.23 (2.07) 0 – 8	4.33 (2.25) 0 – 8	2.22 (2.39) 0 – 8	1.38 (1.13) 0 – 5	38.64** (<.01)	.84 (.36)	1.37 (.24)
Prosocial	6.42 (1.88) 3 – 10	7.15 (1.56) 5 – 10	7.78 (1.98) 2 – 10	8.62 (1.42) 4 – 10	17.28** (<.01)	5.25* (.02)	.03 (.85)
SDQ-Child Externalising	8.35 (3.07) 5 – 16	7.78 (4.20) 0 – 16	5.87 (3.06) 1 – 13	4.19 (3.31) 0 – 16	19.47** (<.01)	2.67 (.11)	.65 (.42)
SDQ-Child Internalising	8.15 (3.75) 2 – 16	9.85 (4.11) 1 – 16	4.43 (3.27) 0 – 13	4.23 (2.23) 1 – 9	47.17** (<.01)	1.21 (.28)	1.96 (.17)
<b>SDQ-Child Total Difficulties</b>	<b>16.50 (5.41)</b>	<b>17.63 (6.68)</b>	<b>9.96 (5.71)</b>	<b>8.42 (4.44)</b>	<b>49.71**</b>	<b>.03 (.86)</b>	<b>1.42 (.23)</b>

*Note:* \* denotes significance at the .05 level, \*\* at the .01 level.

On the SDQ-Parent Total score, as seen in Table 3.3, there was a significant effect of group,  $F(1, 98)=114.41, p<.01, \eta_p^2=.54$ , with autistic adolescents displaying more behavioural problems than neurotypical adolescents, but not of gender,  $F<1$ , and there was no group x gender interaction,  $F<1$ . On the Externalising and Internalising scores, there were significant effects of group ( $ps<.01$ ), with autistic adolescents having more difficulties than neurotypical adolescents, but not of gender ( $ps>.11$ ), with no significant group x gender interactions ( $ps>.44$ ).

On the Emotional Problems subscale there were significant effects of group,  $F(1, 98)=45.64, p<.01, \eta_p^2=.32$ , with autistic adolescents having more difficulties than neurotypical adolescents, and gender,  $F(1, 98)=15.48, p<.01, \eta_p^2=.14$ , with boys having more difficulties than girls but no significant group x gender interaction,  $F(1, 98)=3.17, p=.08, \eta_p^2=.03$ . On the other individual subscales (Conduct Problems, Hyperactivity, Peer Problems, and Prosocial), there was a consistent pattern of a significant effect of group ( $ps<.01$ ) but not of gender ( $ps>.21$ ), with no significant group x gender interactions ( $ps>.71$ ). Throughout, the group effect was that autistic adolescents had more difficulties on this measure than neurotypical adolescents, and the gender effect was that boys had more difficulties on the measure than girls.

Table 3.3

*The Strengths and Difficulties Questionnaire Parent report (SDQ-P) Total and subscale scores by gender (boys, girls) and group (autistic, neurotypical).*

Group	Autistic Boys	Autistic Girls	Neurotypical Boys	Neurotypical Girls	ANOVA – Group	ANOVA – Gender	ANOVA – Group x Gender
	M (SD) Range	M (SD) Range	M (SD) Range	M (SD) Range	F value ( <i>p</i> )	F value ( <i>p</i> )	F value ( <i>p</i> )
Emotional	3.69 (2.40) 0 – 10	6.19 (2.45) 2 – 10	1.52 (1.65) 0 – 5	2.46 (2.14) 0 – 9	45.64** ( <i>&lt;.01</i> )	15.48** ( <i>&lt;.01</i> )	3.17 (.78)
Conduct	2.62 (2.12) 0 – 9	2.37 (1.60) 0 – 5	.96 (1.02) 0 – 4	.88 (.99) 0 – 3	27.23** ( <i>&lt;.01</i> )	.28 (.60)	.08 (.78)
Hyperactivity	5.31 (2.74) 1 – 10	4.67 (2.57) 0 – 10	2.57 (2.06) 0 – 6	2.27 (2.05) 0 – 7	29.46** ( <i>&lt;.01</i> )	.98 (.33)	.13 (.72)
Peer Problems	6.08 (2.50) 0 – 10	5.70 (2.25) 0 – 9	2.00 (2.09) 0 – 7	1.31 (1.72) 0 – 5	97.78** ( <i>&lt;.01</i> )	1.55 (.22)	.14 (.71)
Prosocial	6.12 (2.44) 1 – 10	6.30 (2.09) 1 – 10	7.91 (2.11) 2 – 10	7.85 (2.44) 1 – 10	13.69** ( <i>&lt;.01</i> )	.02 (.90)	.08 (.79)
SDQ-Parent Externalising	7.96 (3.85) 2 – 14	7.22 (3.57) 0 – 15	3.83 (2.37) 0 – 8	3.42 (2.50) 0 – 8	39.86** ( <i>&lt;.01</i> )	.83 (.37)	.07 (.79)
SDQ-Parent Internalising	9.88 (4.01) 3 – 20	11.67 (4.29) 2 – 19	3.52 (3.14) 0 – 11	4.15 (3.32) 0 – 14	87.24** ( <i>&lt;.01</i> )	2.64 (.11)	.60 (.44)
<b>SDQ-Parent Total Difficulties</b>	<b>17.81 (6.65)</b> <b>5 – 34</b>	<b>19.11 (6.28)</b> <b>8 – 31</b>	<b>7.04 (4.10)</b> <b>1 – 14</b>	<b>6.96 (3.78)</b> <b>2 – 18</b>	<b>114.41**</b> <b>(<i>&lt;.01</i>)</b>	<b>.33 (.57)</b>	<b>.42 (.52)</b>

### **3.9.1.3. Self-Regulation: SEARS**

Total and subscale scores for the SEARS-A and SEARS-P can be seen in Tables 3.4 and 3.5.

On the SEARS-A Total score, which measures social and emotional self-regulation skill as perceived by the adolescent themselves, there was a significant effect of group,  $F(1, 95)=14.39, p<.01, \eta_p^2=.13$ , with autistic adolescents rating themselves as having worse self-regulation skills, but not of gender,  $F<1$ , and no significant group x gender interaction,  $F<1$ . On the Self-Regulation, Social Communication, and Emotional subscales there was a consistent pattern of a significant effect of group ( $ps<.03$ ), with autistic adolescents rating themselves as having worse self-regulation skills, but not of gender ( $ps>.28$ ), with no significant group x gender interactions ( $ps>.31$ ). On the Responsibility subscale, there were no significant effects of group,  $F(1, 95)=1.91, p=.17, \eta_p^2=.02$ , or gender,  $F(1, 95)=1.03, p=.31, \eta_p^2=.01$ , and no group x gender interaction,  $F<1$ .

Table 3.4

*The Social and Emotional Assets and Resilience Scale Adolescent (SEARS-A) report Total and subscale scores by gender (boys, girls) and group (autistic, neurotypical)*

<b>Group</b>	<b>Autistic Boys</b>	<b>Autistic Girls</b>	<b>Neurotypical Boys</b>	<b>Neurotypical Girls</b>	<b>ANOVA – Group</b>	<b>ANOVA - Gender</b>	<b>ANOVA – Group x Gender</b>
	M (SD) Range	M (SD) Range	M (SD) Range	M (SD) Range	F value ( <i>p</i> )	F value ( <i>p</i> )	F value ( <i>p</i> )
Self-Regulation	11.23 (4.48) 6 – 23	10.63 (7.24) 0 – 43	13.52 (4.38) 5 – 21	13.31 (3.56) 8 – 20	5.90* (.02)	.16 (.69)	.04 (.85)
Social Communication	14.15 (5.99) 6 – 30	11.74 (5.42) 2 – 25	17.87 (4.28) 8 – 26	17.62 (5.89) 2 – 30	19.54** ( $<.01$ )	1.51 (.22)	.99 (.32)
Emotional	19.85 (5.79) 9 – 33	20.33 (6.08) 8 – 33	23.04 (4.87) 13 – 31	24.96 (5.13) 10 – 33	12.80** (.001)	1.21 (.27)	.43 (.51)
Responsibility	11.23 (3.00) 6 – 18	10.59 (3.24) 6 – 18	11.96 (3.34) 5 – 17	11.31 (3.28) 6 – 17	1.28 (.26)	1.02 (.32)	.01 (.99)
<b>SEARS-A Total</b>	<b>56.46 (16.53)</b> <b>31 – 104</b>	<b>53.30 (18.43)</b> <b>25 – 119</b>	<b>67.10 (12.26)</b> <b>46 – 86</b>	<b>86.71 (13.43)</b> <b>47 – 100</b>	<b>14.75**</b> <b>(<math>&lt;.01</math>)</b>	<b>.15 (.70)</b>	<b>.41 (.52)</b>

Note: \* denotes significance at the .05 level, \*\* at the .01 level

On the SEARS-Parent Total score, which can be seen in Table 3.5, which measures parent perceptions of their child's social and emotional self-regulation skills, there was a significant effect of group,  $F(1, 98)=212.59$ ,  $p<.01$ ,  $\eta_p^2=.68$ , with parents rating autistic adolescents as having fewer self-regulation skills, but not of gender,  $F(1, 98)=3.46$ ,  $p=.07$ ,  $\eta_p^2=.03$ , and there was no significant group x gender interaction,  $F<1$ . On the Self-Regulation/Responsibility and Social Communication subscales, there was a consistent pattern of a significant effect of group ( $ps<.01$ ), with parents rating autistic adolescents as having fewer self-regulation skills than neurotypical adolescents, but no significant effect of group ( $ps>.16$ ). On the Emotional subscale there was a significant effect of group,  $F(1,98)=77.85$ ,  $p<.01$ ,  $\eta_p^2=.44$ , and of gender,  $F(1,98)=5.53$ ,  $p=.02$ ,  $\eta_p^2=.05$ , but there was no significant group x gender interaction,  $F<1$ .

Table 3.5

*The Social and Emotional Assets and Resilience Scale Parent (SEARS-P) report Total and subscale scores by gender (boys, girls) and group (autistic, neurotypical).*

Group	Autistic Boys	Autistic Girls	Neurotypical Boys	Neurotypical Girls	ANOVA – Group	ANOVA - Gender	ANOVA – Group x Gender
	M (SD) Range	M (SD) Range	M (SD) Range	M (SD) Range	F value ( <i>p</i> )	F value ( <i>p</i> )	F value ( <i>p</i> )
Self-Regulation/Responsibility	24.65 (7.45) 14 – 42	27.30 (9.07) 0 – 42	43.74 (8.67) 27 – 64	45.50 (6.18) 31 – 56	141.14** ( <i>&lt;.01</i> )	1.96 (.16)	.08 (.78)
Social Communication	8.81 (4.40) 1 – 19	9.89 (4.14) 0 – 21	22.13 (3.97) 13 – 30	23.15 (4.48) 5 – 28	247.66** ( <i>&lt;.01</i> )	1.55 (.22)	.01 (.97)
Emotion	10.27 (3.42) 4 – 19	11.48 (4.52) 0 – 18	15.83 (2.55) 10 – 21	17.77 (2.49) 10 – 21	77.85** ( <i>&lt;.01</i> )	5.53* (.02)	.30 (.59)
<b>SEARS-P Total</b>	<b>42.92 (13.13)</b> <b>23 – 66</b>	<b>44.40 (10.22)</b> <b>25 – 64</b>	<b>82.05 (13.43)</b> <b>47 – 100</b>	<b>62.34 (23.93)</b> <b>23 – 115</b>	<b>212.59**</b> <b>(<i>&lt;.01</i>)</b>	<b>3.46</b> <b>(.66)</b>	<b>.01 (.97)</b>

*Note:* \* denotes significance at the .05 level, \*\* at the .01 level

### 3.9.1.3 Anxiety

Table 3.6 presents mean (SD) and ranges for each of the four participant groups on the Spence Children's Anxiety Scale for overall and subscale scores.

A 2 (group: autistic, neurotypical) by 2 (gender: male, female) ANOVA revealed a significant effect of group,  $F(1, 98)=14.84$ ,  $p<.01$ ,  $\eta_p^2=.13$ , with autistic adolescents being more anxious than neurotypical adolescents, and a significant effect of gender,  $F(1, 98)=19.03$ ,  $p<.01$ ,  $\eta_p^2=.16$ , with girls being more anxious than boys, but no significant group x gender interaction,  $F(1, 98)=1.17$ ,  $p=.28$ ,  $\eta_p^2=.01$ .

On the Separation Anxiety subscale, there was a significant effect of group,  $F(1, 98)=14.22$ ,  $p<.01$ ,  $\eta_p^2=.13$ , with autistic adolescents being more anxious than neurotypical adolescents, and gender,  $F(1, 98)=20.13$ ,  $p<.01$ ,  $\eta_p^2=.17$ , with girls being more anxious than boys, and a significant group x gender interaction,  $F(1, 98)=6.66$ ,  $p=.01$ ,  $\eta_p^2=.06$ . Planned comparisons revealed the source of this interaction was that autistic girls had significantly higher scores than all other groups ( $ps<.01$ ).

On the Social Phobia and Injury subscales, there was no significant effect of group, but there was a significant effect of gender. There were no significant group x gender interactions.

For OCD, there was a significant effect of group,  $F(1, 98)=9.29$ ,  $p<.01$ ,  $\eta_p^2=.09$ , but no significant effect of gender,  $F(1, 98)=2.17$ ,  $p=.14$ ,  $\eta_p^2=.02$ , and no significant group x gender interaction,  $F(1, 98)=1.42$ ,  $p=.23$ ,  $\eta_p^2=.01$ .



Table 3.6. *The Spence Children's Anxiety Scale (SCAS) Total and subscale scores by gender (boys, girls) and group (autistic, neurotypical)*

Group	Autistic Boys	Autistic Girls	Neurotypical Boys	Neurotypical Girls	ANOVA – Group	ANOVA - Gender	ANOVA – Group x Gender
	M (SD) Range	M (SD) Range	M (SD) Range	M (SD) Range	F value ( <i>p</i> )	F value ( <i>p</i> )	F value ( <i>p</i> )
SCAS Separation Anxiety	2.58 (2.19) 0 – 7	6.00 (3.44) 0 – 12	2.00 (1.17) 0 – 5	2.92 (2.24) 0 – 8	14.23** ( <i>&lt;.01</i> )	20.12** ( <i>&lt;.01</i> )	6.66 * (.01)
SCAS Social Phobia	6.08 (3.48) 0 – 14	9.89 (4.21) 3 – 16	6.30 (2.74) 1 – 10	7.50 (3.02) 1 – 13	2.52 (.12)	13.50** ( <i>&lt;.01</i> )	3.69 (.06)
SCAS OCD	5.54 (3.25) 0 – 11	5.74 (4.94) 0 – 16	2.52 (2.55) 0 – 8	4.42 (3.65) 0 – 13	9.24** ( <i>&lt;.01</i> )	2.18 (.14)	1.42 (.24)
SCAS Panic	3.31 (2.75) 0 – 10	7.85 (4.83) 0 – 17	1.13 (1.94) 0 – 8	3.73 (4.35) 0 – 17	18.26** ( <i>&lt;.01</i> )	23.49** ( <i>&lt;.01</i> )	1.74 (.19)
SCAS Injury	3.31 (2.03) 0 – 7	4.15 (2.99) 0 – 11	2.87 (2.16) 0 – 8	4.19 (2.87) 0 – 10	.15 (.70)	4.51* (.04)	.22 (.64)
SCAS General Anxiety Disorder	5.08 (2.76) 0 – 10	8.15 (3.87) 0 – 11	4.22 (2.84) 0 – 8	6.31 (3.15) 1 – 14	4.52* (.04)	16.51** ( <i>&lt;.01</i> )	.60 (.44)
<b>SCAS Total</b>	<b>26.31 (11.59)</b> <b>5 – 55</b>	<b>41.52 (17.99)</b> <b>13 – 78</b>	<b>18.57 (9.37)</b> <b>10 – 49</b>	<b>27.73 (16.19)</b> <b>5 – 78</b>	<b>14.84**</b> <b>(<i>&lt;.01</i>)</b>	<b>19.03**</b> <b>(<i>&lt;.01</i>)</b>	<b>1.17</b> <b>(.28)</b>

Note: \* denotes significance at the .05 level, \*\* at the .01 level.

On the Panic and GAD subscales, there was a significant effect of group and gender, but no group x gender interactions.

### **3.9.2 Within-groups analysis.**

This section examined the correlations between the different contributing factors and specific outcome measures – Friendship Strength on the FQS, Total Conflict Involvement on the RPEQ, and Total Victimhood on the RPEQ. To account for multiple comparisons, the significance level was set to a more conservative level, at  $p < .01$ . As described above, correlations are presented by gender, as the results from Chapter Two show that gender was the key feature in differentiating the social experiences of adolescents, rather than diagnostic status. Indeed, this decision was supported by the general lack of group x gender interactions in the analyses above.

Full correlation matrices for both Friendship Strength and Victimization are presented in Tables 3.7, with girls above the diagonal and boys below the diagonal. Significant correlations are denoted with \* at the .05 level (2-tailed) and \*\* at the .01 level (2-tailed).

#### **3.9.2.1 Friendship Strength.**

In girls, higher Friendship Strength on the FQS was correlated with lower overall involvement in conflict,  $r(52) = .54, p < .01$ , and with lower levels of victimhood for girls,  $r(52) = -.52, p < .01$ . It was also significantly correlated with lower levels of aggression,  $r(52) = .37, p < .01$ . Greater Friendship Strength scores were also correlated with higher self-ratings on the SEARS-A,  $r(52) = .36, p < .01$ . There were no correlations at the  $p < .01$  level with any other predicted contributing factors.

In boys, greater Friendship Strength on the FQS was significantly correlated with fewer parent-rated behavioural problems on the SDQ,  $r(48) = .36, p < .01$ . It was also correlated with

higher scores on both the adolescent and parent-rated SEARS,  $p < .01$ , similar to the pattern seen in girls.

Table 3.7

Correlation matrices showing associations between Friendship Strength (as measured by the FQS), Victimisation (as measured by the RPEQ), and hypothesised predictive factors – social awareness (TASIT scores), self-regulation (SDQ-C, SDQ-P, SEARS-A, SEARS-P) and anxiety (SCAS scores), with girls above the diagonal and boys below the diagonal.

	<b>FQS Strength</b> <i>r</i> ( <i>p</i> )	<b>RPEQ</b> <b>Victimisation</b> <i>r</i> ( <i>p</i> )	<b>TASIT Total</b> <i>r</i> ( <i>p</i> )	<b>SDQ-C Total</b> <i>r</i> ( <i>p</i> )	<b>SDQ-P Total</b> <i>r</i> ( <i>p</i> )	<b>SEARS-A</b> <b>Total</b> <i>r</i> ( <i>p</i> )	<b>SEARS-P</b> <b>Total</b> <i>r</i> ( <i>p</i> )	<b>SCAS Total</b> <i>r</i> ( <i>p</i> )
<b>FQS Strength</b>	-	-.52** (.001)	.18 (.21)	-.29* (.04)	-.08 (.57)	.36** (.007)	.22 (.11)	-.17 (.21)
<b>RPEQ</b> <b>Victimisation</b>	-.14 (.35)	-	-.34* (.01)	.63** (.001)	.54** (.001)	-.41** (.002)	-.45** (.001)	-.49** (.001)
<b>TASIT Total</b>	-.03 (.84)	-.22 (.13)	-	.04 (.79)	-.02 (.86)	-.19 (.16)	-.03 (.84)	-.05 (.71)
<b>SDQ-C Total</b>	-.14 (.32)	.39** (.006)	-.16 (.26)	-	.67** (.001)	-.54** (.001)	-.54** (.001)	.70** (.001)
<b>SDQ-P Total</b>	-.36* (.01)	.19 (.19)	.01 (.95)	.41** (.004)	-	-.33* (.01)	-.76** (.001)	.48** (.001)
<b>SEARS-A</b> <b>Total</b>	.48** (.001)	-.40 ** (.005)	.01 (.99)	-.27* (.05)	-.43** (.002)	-	.31* (.02)	-.31* (.02)
<b>SEARS-P</b> <b>Total</b>	.47** (.001)	-.14 (.32)	.05 (.74)	-.57** (.001)	-.72 (.001)	.41** (.003)	-	-.34* (.01)
<b>SCAS Total</b>	-.03 (.85)	.46** (.001)	-.17 (.25)	.60** (.001)	.34* (.02)	-.41 (.003)	-.35* (.01)	-

Note: \* denotes significance at the .05 level, \*\* denotes significance at the .01 level

### **3.9.2.2 Total Victimisation.**

Amongst girls, there was a significant correlation between higher TASIT scores, signifying better social awareness skills, and lower levels of victimhood,  $r(52)=.34$ ,  $p=.01$ . Higher levels of Total Victimisation were also significantly correlated with higher Total Anxiety scores,  $r(52)=.49$ ,  $p<.01$ . Greater Total Victimisation was correlated with greater behavioural problems on the adolescent and parent-rated SDQ ( $ps<.01$ ) and with lower scores on the adolescent and parent-rated SEARS ( $ps<.01$ ), indicating greater social and emotion regulation skills.

For boys, on Total Victimisation, the correlation with anxiety was  $r(48)=.46$ ,  $p<.01$ . For adolescent-rated SDQ, the correlation with Total Victimisation was  $r(48)=.39$ ,  $p<.01$ , and for adolescent-rated SEARS it was  $r(48)=.40$ ,  $p<.01$ , such that greater anxiety, more behavioural problems, and lower self-regulation skills were all linked to greater Victimisation.

### **3.9.3. Linear Regression.**

I sought to examine which factors contributed to the Friendship Strength and Victimhood outcomes for adolescents through linear regression modelling. Friendship Strength and Total Victimhood were selected as the two key outcomes for adolescents in this study, as discussed above. As discussed above, two models were created, one for girls and one for boys, in order to reflect the differences in their experiences which were reported in Chapter Two, namely that girls have stronger friendships than boys, and that girls are subject to relational victimisation whereas boys are subject to overt victimisation.

To reduce the number of variables entered into the model, a single standardised z-score variable was created for the self-regulation measures (SDQ, SEARS), for both the adolescent-rated and parent-rated versions. Initially, I checked that the measures were significantly inter-

correlated, and all  $p$ -values were found to be  $<.05$  (see Table 3.5). Z-scores were therefore created for the SDQ-C and the SEARS-A, and composite self-regulation scores then created for adolescent self-regulation by averaging the SDQ-C and SEARS-A Z scores (SR-Z). This composite z-score variable was then entered into the linear regression.

The first step of the analyses was to run correlations between the factors being entered into the model (social awareness, self-regulation, anxiety) in order to establish whether any interaction terms would be necessary. Due to the large number of correlations being run, a more conservative significance value of  $p<.01$  was used (rather than  $p<.05$ ). Interaction terms were then generated for variables where there was a significant correlation in both male and female samples. These analyses resulted in an anxiety by group interaction term (SCAS x group) being created and included in the model.

### ***3.9.3.1 Predicting Friendship Strength.***

A hierarchical linear model was developed to determine the extent to which social awareness (as measured by the TASIT), anxiety (as measured by the SCAS and the SCAS x group interaction), and self-regulation (as measured by the adolescent composite z-score) predicted Friendship Strength (see Tables 3.8 and 3.9).

Diagnostic status (i.e., whether the child was autistic), age, and intellectual ability were entered into the first step of the regression model. Raw IQ scores were used to index intellectual ability rather than the age-adjusted standardised scores to ensure that age was not counted twice in these analyses. The additional contribution of the further predictors was then tested by entering them stepwise into the second step of the regression analysis.

Amongst girls, when age, intellectual ability and group were entered simultaneously as predictors of friendship strength, these variables accounted for 17.2% of the variance,  $F(3, 48)=3.49$ ,  $p=.02$ , as can be seen in Table 3.8. TASIT, SCAS, the SCAS x group interaction

(henceforth referred to as SCAS x group), and SR-Z were then added stepwise into the model. These additional variables did not contribute significant variance to the model (final model:  $F(7, 45)=2.44, p=.04$ ).

Table 3.8

*Summary of linear regression analyses predicting Friendship Strength in girls.*

Variable	B	SE B	$\beta$	R <sup>2</sup> (p)
Model 1				0.17
Age	-.04	.05	-.10	(<.45)
Group	-.40	.19	-.28	(.04)*
Intellectual ability	.008	.004	.03	(.07)

*Note:*\* denotes significance at the .05 level, \*\* at the .01 level.

Amongst boys (see Table 3.9), the same procedure was followed and the first stage (age, intellectual ability, group) was found to explain 21.7% of the variance,  $F(3, 43)=3.97, p=.01$ . TASIT, SCAS, SCAS x group, and SR-Z were then added stepwise into the model in the second step of the analysis. Similar to the results of the analysis with the girls, these variables did not contribute significant variance to the model (all  $ps>.16$ ) (final model:  $F(7, 41)=2.68, p=.03$ ).

Table 3.9

*Summary of linear regression analyses predicting Friendship Strength in boys.*

Variable	B	SE B	$\beta$	R <sup>2</sup> (p)
Model 1				.22
Age	-.002	.05	-.006	(.67)
Group	-.55	.18	-.41	(.01)*
Intellectual ability	-.008	.004	-.28	(.04)*

*Note:*\* denotes significance at the .05 level, \*\* at the .01 level

### **3.9.3.2 Predicting Total Victimhood.**

A linear regression was then conducted to determine the extent to which these same factors (social awareness: TASIT; anxiety: SCAS, SCAS x group; self-regulation: SR-Z) predicted Total Victimhood in girls, as shown in Table 3.10. As above, diagnostic status, age, and intellectual ability were entered as the first step of the model, with the predictor variables entered in the second step.

Amongst girls, when age, intellectual ability and group were entered simultaneously as predictors, these variables explained 36% of the variance,  $F(3, 48)=9.11, p<.01$ . When TASIT Total score, SCAS Total score, and self-regulation (Z-score) were entered into the second step of the analysis, SCAS Total scores made a significant contribution to the model, explaining an additional 9% of the variance,  $F(4, 47)=9.70, p<.01$ . TASIT Total scores also contributed significant variance to the model, explaining an additional 6% of the variance,  $F(5, 46)=9.00, p<.01$ . None of the other predictors entered into the model were significant (all  $ps>.18$ ). The final model was significant,  $F(7, 44) = 6.84, p<.01$ .



Table 3.10

Summary of linear regression analyses predicting Total Victimhood in girls.

Variable	B	SE B	$\beta$	R <sup>2</sup> and R <sup>2</sup> change (p)
Model 1				.36
Age	-.53	.34	-.20	(.11)
Group	5.77	1.37	.51	(<.01)**
Intellectual ability	-.03	.03	-.13	(.31)
Model 2				.09
Age	-.63	.32	-.22	(.28)
Group	4.62	1.35	.41	(<.01)**
Intellectual ability	-.009	.03	-.04	(.51)
SCAS Total	.11	.04	.35	(.02)*
Model Three				.06
Age	-.40	.32	-.14	(.29)
Group	4.45	1.29	.39	(.37)
Intellectual ability	-.02	.03	-.07	(.47)
SCAS Total	.10	.04	.32	(.02)*
TASIT Total	-.19	.08	-.25	(.02)*

Note: \* denotes significance at the .05 level, \*\* at the .01 level

Amongst boys, when age, intellectual ability and group were entered simultaneously as predictors, these variables explained a negligible amount of variance ( $R^2 = .03$ ),  $F(3, 43)=.52$ ,  $p=.67$ . SCAS x group interaction was then entered into the regression equation, and this explained an additional 24.1% of the variance,  $F(4, 42)=3.34$ ,  $p=.02$ . The positive beta value (see Table 3.11) suggests that having both autism and high anxiety traits increases the level of Victimhood experienced by an adolescent boy, over and above the effect of either trait individually. For a visualisation of the interaction between autism (group) and high anxiety

(SCAS Total), see Figure 3.1. None of the other predictors entered into the final model were significant (all  $ps > .21$ ) (final model:  $F(7, 39) = 2.08, p = .05$ ).

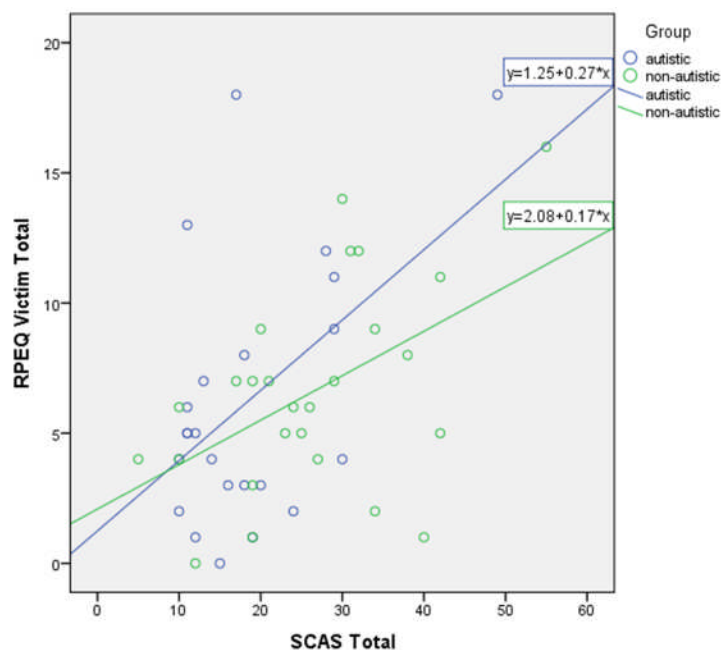
Table 3.11

*Summary of linear regression analyses predicting Total Victimhood in boys.*

Variable	B	SE B	B	R <sup>2</sup> and R <sup>2</sup> change (p)
Model 1				.03
Age	.44	.40	.17	(.28)
Group	.79	1.37	.09	(.56)
Raw IQ	.003	.03	.02	(.90)
Model 2				.24
Age	.33	.36	.12	(.48)
Group	2.02	1.28	.22	(.40)
Raw IQ	.006	.03	.03	(.84)
SCAS x Group	.14	.04	.48	(<.01)**

Note: \* denotes significance at the .05 level, \*\* denotes significance at the .01 level

Figure 3.1. Graph showing the interaction between SCAS Total and Group, and the impact of this on RPEQ Total Victimhood.



### **3.10 Discussion**

This extension of the study outlined in Chapter Two used regression analyses to examine the patterns of predictors of adolescents' friendship strength and the levels of victimisation to which they are subjected. While there is a wealth of research on the nature of autistic children's friendships, and the prevalence of bullying amongst this population, none to date has attempted to examine what factors might contribute to these outcomes. First, my analyses found that there were significant differences between autistic and neurotypical adolescents with behavioural problems, self-regulation skill, and anxiety, with autistic adolescents having more difficulties on these measures than neurotypical adolescents. Second, my analyses found that there were significant gender differences on other measures, including those which assessed behavioural problems, self-regulation skill, and anxiety, with boys having more difficulties with behaviour and self-regulation than girls, and girls being more anxious than boys. Finally, I carried out hierarchical linear modelling to investigate whether these factors predicted levels of Friendship Strength and Victimization. For Friendship Strength, no significant predictors were found. In both girls and boys, higher levels of Victimization were related to higher levels of anxiety, regardless of diagnostic status. The regression analyses revealed that anxiety was a key predictor of victimisation levels in boys and girls, although the precise relationship differed by gender, in that for girls their overall SCAS score was the predictor but in boys it was the interaction between anxiety and having an autism diagnosis. In girls, higher anxiety directly predicted higher victimisation levels, although the model had greater explanatory power when combined with degree of social awareness. These differences emphasise the findings of Chapter Two: that autistic girls are more like neurotypical girls than they are like autistic boys, and that they therefore face different social situations and challenges to their male peers.

### **3.10.1 Group differences on the hypothesised predictive factors**

Autistic young people in this study had significantly more behavioural problems than their neurotypical peers, both on the self- and parent-report versions of the SDQ, in line with previous research (Macintosh & Dissanayake, 2006). In general, better friendship strength and lower levels of peer victimisation were associated with lower levels of behavioural issues, regardless of gender or diagnostic status, as would be expected from existing literature (Wolke, Woods, Bloomfield, & Karstadt, 2000). Similarly, research has shown that children and young people who have poorer self-regulation skills are more likely to struggle with friendships (Lopes, Salovey, Coté, Beers, & Petty, 2005) and to be bullied (Garner & Hinton, 2010), which this finding supports in an autistic population.

Autistic adolescents in this study were more anxious than neurotypical adolescents, as would be expected (e.g., Kim et al., 2000, White et al., 2009), and this had an impact on their friendships and victimisation levels. That anxiety was a significant predictor of these outcomes (discussed in detail below) suggests that the anxiety experienced by autistic young people may pose an additional challenge on top of those arising from their autism, as discussed by the young people who took part in the ‘Know Your Normal’ project (Crane et al., 2017).

### **3.10.2 Gender differences on the hypothesised predictive factors**

My analyses showed that girls in this sample had fewer behavioural problems than boys, regardless of diagnostic status. This mirrors research showing that girls display fewer disruptive behaviours both in the neurotypical population (Lahey et al., 2000) and in autistic population (Dworzynski et al., 2012), which has been suggested as one part of why autistic girls are likely to have a delayed diagnosis. Girls were also both self- and parent-rated as having better self-regulation skills than boys, which again follows literature examining self-regulation in neurotypical individuals (Rose & Rudolph, 2006), although the existence of any gender differences in self-regulation has not previously been explored within autism research.

In my study, girls were more anxious than boys, which is in line with the existing literature on neurotypical gender differences in anxiety levels (Lewinsohn, Gotlib, Lewinsohn, Seeley, & Allen, 1998; McLean et al., 2011). The findings presented in this Chapter illustrated that there is a cumulative effect of being female and autistic, both of which are associated with higher anxiety, as autistic girls were significantly more anxious than all other participant groups. For girls, better friendship strength was also associated with being less bullied, suggesting a protective effect which is supported by the interview data in Chapter Two and previous research (Bollmer, Milich, Harris, & Maras, 2005).

### **3.10.3 Gender differences in the hierarchical linear models**

The regression analyses sought to examine which factors contribute to friendship strength in girls and boys, in order to better understand how to support the formation and maintenance of positive peer relationships. The model generated, however, found no significant predictors of friendship strength in either group. This was an unexpected finding, as it was predicted that anxiety, self-regulation, and social awareness would play into the friendship experiences of boys and girls regardless of their diagnostic status. When taken in light of the findings of Chapter Two, however, the lack of significant predictors makes more sense, as all adolescents rated their best-friendship very similarly on the FQS (as can be seen in Table 2.4, section 2.5.1). The lack of variance in this outcome variable could have precluded the possibility of identifying significant relationships that may well have been apparent with a more sensitive measure. This lack of variance is linked, in part, to the way the questionnaire is framed, as it asks participants to rate their best friend rather than their peers in general. It makes intuitive sense that a best-friendship, which represents the closest friendship any individual has, would be rated similarly across groups compared to relationship with wider peers, which are naturally less close. This may explain why I found no relationship between Friendship Strength and other variables, as the rating given to a best friend does not necessarily correspond

to how an individual interacts with people who are not their close friends. For example, autistic girls in their interviews talked about having one or two best friends who they got on with similarly well to neurotypical girls and their best friends, regardless of the fact that they were experiencing significantly more conflict with wider peers.

The findings regarding anxiety in the adolescents in this study (that higher anxiety is linked to lower Friendship Strength and higher levels of Victimisation) are in line with previous research in typical adolescents, which has found that more anxious adolescents have less secure and less close friendships (La Greca & Lopez, 1998), and that those with weaker social awareness skills also have less secure and close friendships (Crawford & Manassis, 2011). It is interesting that for boys, it was the interaction between anxiety and having an autism diagnosis which predicted Victimisation levels. This interaction suggests that there is a combined effect of the characteristics of autism, plus the behaviours which may arise from being anxious (such as being less socially extroverted) that impact on how boys socialise and how they are targeted by bullies. This targeting of more socially withdrawn individuals has previously been identified in neurotypical adolescents (Reijntjes, Kamphuis, Prinzie, & Telch, 2010), and my findings suggest that this is also true for autistic boys. That this anxiety/autism interaction was not a significant predictor for girls, but that anxiety alone was, suggests that there are gender differences in how girls and boys become the targets of bullies. This difference in factors which contribute to being bullied may reflect the types of bullying they experience, as girls are usually subject to relational aggression (Aukett, Ritchie, & Mill, 1988), and this was also true for the autistic girls in my sample. Relational aggression relies on high levels of social skill (Andreou, 2006), and so the finding that lower levels of social awareness predicted being bullied in girls makes intuitive sense. As autistic girls would be expected to have (and did have, although this trend did not reach significance on the TASIT – see histograms in Appendix A) lower levels of social awareness than neurotypical girls, the association between

social awareness skill and relational victimisation explains the finding that autistic girls were subject to significantly more relational Victimisation than any other group.

Higher levels of victimisation being linked to higher levels of anxiety is also supported by the recent findings of the 'Know Your Normal' report, where autistic young adults (16 – 25 years old) identified that mental health affected their relationships (Crane et al., 2017). It is important to note the findings of this report as it highlights that issues such as anxiety continue to impact on the relationships and experiences of autistic individuals into early adulthood, beyond the upper age range of 18 in this study. The role of these potential mental health issues in early- and mid-adulthood are part of what is considered in Chapter Four.

The distinct predictors identified for girls and boys further supported the findings of Chapter Two, suggesting that peer conflict is a gendered experience. For girls, the significant predictors were social awareness and anxiety, with lower social awareness being linked to being more victimised, and higher anxiety predicting being more victimised. These are both in line with previous research, which has found that individuals with worse social awareness skills have more difficult peer relationships (Burlison, 1994), and that those with higher anxiety are also more likely to be bullied (Grills & Ollendick, 2010; Storch, Masia-Warner, Crisp, & Klein, 2005). It might also be expected that social awareness should be more important for girls than boys, because women face much more complex social expectations than men (Eagly, Wood, & Diekmann, 2000).

Amongst boys, the only significant predictor of higher total victimhood levels was the interaction between autism and anxiety. This means that being autistic, or being highly anxious, as individual factors did not significantly predict higher levels of peer conflict, but that being both autistic and highly anxious did significantly predict this outcome. As we know from existing research that autistic individuals are more likely to be anxious than their neurotypical

peers (Kim et al., 2000), this interaction may explain a reasonable portion of the difficulties we know autistic young people have with their peers in school (Cappadocia, Weiss, & Pepler, 2012).

It is interesting to note that self-regulation did not make a significant contribution to the victimhood models for either boys or girls, as I predicted. The existing literature would suggest that those with more self-regulation difficulties and behavioural problems would have more issues with their peers (Hinshaw & Melnick, 1995; Trentacosta & Shaw, 2009). This is particularly interesting in light of the finding that behavioural problems were at higher levels amongst autistic boys specifically. This may therefore explain why self-regulation did not play a predictive role in the female model, as girls displayed lower levels of behavioural problems than boys in this sample, as has been found in previous research (Hartley & Sikora, 2009; Kopp & Gillberg, 1992) and therefore these are less likely to impact how they interact with their peers. For autistic boys, however, it was expected that their higher levels of behavioural problems and self-regulation difficulties would be linked to differences in the level of victimhood they experienced. It may be that in this sample, although there were high levels of behavioural problems amongst the autistic boys, these were not related to victimisation because they were not behaviours which affected how they interacted with their peers. For example, while the SDQ asks about peer difficulties, this is only one subscale of five about behavioural problems, and it may be that the majority of the problematic behaviours reported on this measure came from the other subscales, such as Hyperactivity or Mood Problems, which have less of an impact on peer relationships. These separate subscales were not entered into the model, however, to limit the number of variables examined, as the sample was not big enough to statistically support large numbers of variables. Future work with larger sample sizes would be able to separate the effects of these different categories of behavioural problems with more confidence.



### **3.11 Limitations**

There were several limitations to this study. First, there are some issues with using the FQS with a sample whose age ranges up to 18. Some of the items are somewhat childish and may have felt irrelevant to older participants, thereby impacting on how they rated their best-friendship and resulting in the lack of variance in the outcome, which is problematic for correlational and regression analyses. Despite this possibility, the reliability of the measure was high, as outlined in Chapter Two, suggesting that participants were answering genuinely even if items such as ‘My friend and I play games together’ are less relevant to late teenagers. Second, the decision to divide the sample into male and female models reduced the power of the regression equation somewhat. This decision was taken, however, considering the findings of clear gender differences in Chapter Two, and the fact that distinctly different models were generated supports the idea that this was the correct way to analyse the data.

### **3.12 Conclusion**

The data presented in this Chapter involved elucidating which factors contribute to the friendship and conflict experiences of girls and boys I identified key differences between the two gender groups in terms of both the levels at which they have different skills and difficulties, and also in terms of the ways in which these contribute to two key social outcomes – friendship strength and peer victimisation. While no predictors were found for friendship strength, that there were distinct models for predicting victimisation of boys and girls supports the overarching hypothesis of this thesis, that autistic boys and girls have different social experiences, which come with different challenges, and these are contributed to by different factors.

These different influencing factors suggest that autistic girls are likely to need differentiated support and intervention programmes to those developed for autistic young people in general, which have often used majority-male samples (Banach et al., 2009). Anxiety

was a clear area where both autistic girls and boys are struggling more than their neurotypical peers, as has been widely recognised, and this supports the widespread move to develop interventions to help with this issue. The findings of this chapter also suggest that parents and professionals should focus on supporting autistic girls in the development of their more complex and subtle social skills, such as social awareness, rather than the ‘mechanics’ of interacting with other people such as how to greet someone.

The data presented in the previous two Chapters have highlighted the difficulties (as well as positive experiences) autistic adolescents have with their friendships and peer relationships, and raise questions about what the long-term outcome of difficulties may be. The neurotypical literature has shown that difficulties with peer relationships in adolescence may be linked to poorer adult outcomes, such as being less well-adjusted (Bagwell, Newcomb, & Bukowski, 1998) and being more likely to engage in risky behaviours like alcohol misuse (Newman, Lohman, & Newman, 2007). There is currently little known about how friendships and relationships develop into adulthood in autistic people, however, especially in women. Examining the development of relationships into adulthood would require a longitudinal study which is beyond the scope of this PhD. Therefore, the next Chapter will seek to examine age-related and developmental differences between adolescence and adulthood in the social relationships of autistic and neurotypical adult women, including the participants’ reflections on how these have changed since adolescence. I decided to focus on women only (rather than comparing women to men) as there is so little known about autistic women’s lives in general, including their relationships. This is pertinent to the nature of this PhD, as female relationships are such a crucial feature of lived experience and play a fundamental role in individual’s social and emotional well-being. Most of what is known about the lives of autistic adults has been garnered from research with majority-male samples to date, just as in adolescent research, and so arguably it is worth seeking to redress this imbalance somewhat in the next Chapter. I

decided to focus on the experiences of autistic women specifically because of the findings in Chapter Two of similarities between autistic and neurotypical girls, and a desire to examine whether such similarities are also present in adulthood. While there is a dearth of research on the experiences of autistic adults in comparison to autistic children and young people (Damiano, Mazefsky, White, & Dichter, 2014; Pellicano, Dinsmore, & Charman, 2014), this is especially the case for research focussing on women, and so this study sought in part to redress that balance.

## **Chapter Four: Female relationships into adulthood**

The findings from Chapters Two and Three showed that there are a range of social challenges specific to autistic girls, and which impact on their ability to make and maintain friendships, regardless of their desire to do so. This Chapter examines in depth whether the themes and patterns identified in Chapters Two and Three in the friendships and conflict experiences of autistic and neurotypical girls are also present in adulthood. The distinct friendship patterns of autistic and neurotypical girls seen in Chapter Two, with autistic girls having fewer and more intense friendships, may continue into adulthood, but this has not previously been examined. The tendency towards girls being involved in relational conflict is likely to also be the case in adulthood, as research has shown that women engage in relational aggression as well as adolescent girls (Crick & Grotpeter, 1995). It is important to know, however, whether autistic women learn effective coping strategies for this, as this could help to inform support for autistic girls earlier in their lives. Further to the findings of Chapter Three, I will also seek to examine which factors contribute to positive relationships for women, and in the general discussion (Chapter Six) I will compare these two models and the factors which emerge from these as significant.

The lack of timely diagnosis for girls (Gould & Ashton-Smith, 2011) can also be seen in the numbers of adult women who receive a late diagnosis of being on the autism spectrum (Begeer et al., 2012). These women will have therefore grown up without accessing specialist support, which may contribute to difficulties in adulthood as social and independent living demands increase. There is a dearth of research in this area, although several recent studies and first-hand accounts highlight the experience of receiving a diagnosis later in life, and what this is like for autistic women specifically. Research (Bargiela et al., 2016) and autobiographical writings (Hearst, 2015) have shown that the diagnostic process is often very difficult for autistic women as they do not fit the ‘stereotypical’ view of autism in which the professionals around

them have been trained. These writings also describe, however, that once a diagnosis has been determined, it gives a sense of relief and an explanation for many behaviours which women had previously felt were them 'being stupid' or 'getting things wrong' (Hearst, 2015).

There has been much research into the social lives of neurotypical adults, which has shown that as we progress from childhood, to adolescence, to adulthood, the social expectations placed upon us become more complex (Zarrett & Eccles, 2006). Adults have to navigate not only their family relationships and friendships, but also work relationships, and may also have acquaintances through their partners and children. Romantic partners become the most important relationship (Barry, Madsen, Nelson, Carroll, & Badger, 2009), shifting how people behave towards other people in their lives, such as friends. For example, men with wives or serious romantic partners reported sharing less emotional information with their friends than single men, although women maintained high levels of emotional sharing with friends regardless of marital status (Carbery & Burhmester, 1998). Yet, to date, there has been no research into whether this neurotypical social change over time is echoed in autistic people, particularly autistic women. The issues highlighted by autistic girls in Chapter Two – their difficulties with managing the conflict in their relationships – have not been investigated to date, but are likely to have just as significant an impact in adulthood as they do in adolescence.

Research conducted in Australia has shown that adult autistic women have significantly worse broad psychosocial outcomes than both non-autistic women and autistic men on life outcomes such as education, employment, mental health, and – especially relevant in the context of the current thesis – in the realm of their social relationships (Baldwin & Costley, 2016). Most adult work which has focussed on the adult outcomes of autistic people has included mostly male participants, showing that autistic individuals are less likely to be in employment (Howlin, 2013), are less likely to live independently (Henninger & Lounds-Taylor, 2013), and are less likely to be in long-term romantic relationships than neurotypical

counterparts (Howlin, 2013a). Baldwin and Costley's relatively large-scale work (n=82) shows that these trends are possibly also true for autistic women in adulthood, but emphasise the impact of social difficulties upon them. For example, the authors discussed how difficulties with making positive relationships at work linked to women's unemployment, as many women reported struggling to keep a job for long, often due to disagreements with colleagues or management. The extent and nature of conflict within autistic women's relationships could, from the literature discussed here, be seen one reason for their particularly poor psychosocial outcomes in terms of mental health and life satisfaction (Baldwin & Costley, 2016). There is, however, no research examining the way that autistic adults experience and manage discord within their relationships with others, let alone autistic women – and is precisely what this Chapter seeks to address.

Baldwin and Costley (2016) also described worse mental health outcomes for the autistic women in their sample than the autistic men. There is very little research on the mental health specifically of autistic women, although there is evidence that mental health amongst autistic adults is generally poorer than amongst neurotypical peers (Hofvander et al., 2009; Howlin et al., 2000). As discussed in Chapter One, one might assume that autistic women are likely to have high levels of anxiety, as both autistic people (Kim, 2000; White et al., 2009) and women (Leach, Christensen, Mackinnon, Windsor, & Butterworth, 2008) are more anxious than their neurotypical and male counterparts respectively. There is a growing body of work on the links between autism and anorexia, which is pertinent to the female participants described in this Chapter, as eating disorders are primarily, though not exclusively, a female condition (Lewinsohn, Seeley, Moerk, & Striegel-Moore, 2002). Some research has shown that up to 70% of women in an in-patient setting for anorexia treatment display elevated autistic traits on the ADOS-2 (Mandy & Tchanturia, 2015), suggesting that anorexia may in some individuals represent a 'female' presentation of autism. The two conditions are characterised

by some similarities, such as a preference for routine, obsessive behaviours, and reduced sociability (APA, 2013). It is worth noting, however, that these studies have so far examined autistic traits in an anorexic population, rather than investigating disordered eating behaviours in an autistic population.

It is worth noting that the outlook for autistic women is not all negative. There are some notable examples of autistic women leading successful independent lives (Webster & Garvis, 2017). This research shows how, as women mature, grow in self-assurance, and increase their sense of their own competence, they build problem solving abilities and create lives of which they are proud and with which they are satisfied. It may be assumed that these greater 'successes' would be seen in those who are diagnosed later (despite the undoubted challenges that they have faced), as they have often had to develop and display a certain level of resilience to make it to adulthood before receiving their diagnosis. This means that they may, in some ways, be doing 'better' than individuals who also have additional intellectual or behavioural difficulties which were of sufficient degree to obtain a diagnosis in childhood.

Other research has shown, however, that even within these successful lives, autistic women can struggle with the social aspects of the world around them. In Kanfiszler et al.'s small-scale narrative study, all the autistic women (seven participants), regardless of whether they had an intellectual disability, discussed having issues in their social relationships (Kanfiszler, Davies, & Collins, 2017). This was particularly clear in their discussions of trying to meet the gendered expectations of the people around them, such as struggling to feel 'feminine' and lacking the "mothering instinct" people expected (p. 665), or feeling that even when they tried to make friends and talk to people, the conversation "just goes dead" (p. 666). Almost half of the participants in Kanfiszler et al.'s study had co-occurring intellectual disabilities and were living in supported accommodation or with their parents. While this means that the women included are to some degree representative of the range of experiences

of women on the autism spectrum, it also means that they are likely to have had quite different life experiences to the cognitively able women included in this study. I decided to focus on cognitively able women in this Chapter because these are the women who are most like the girls included in the research of Chapters Two and Three, meaning that the findings from their participation are comparable to those of the adolescents. This comparison between adolescent autistic girls and adult autistic women will be presented in Chapter Five.

#### **4.1 The Current Study**

This research therefore sought to examine the nature of the friendships, social relationships, and the conflict within those relationships, of autistic and non-autistic adult women. While the first study of this PhD focussed mainly on friendships, the scope of the current study was much broader given that adults have wider and more complex social worlds than adolescents, including not just family and friends but also colleagues and people encountered, for example, through their children. To capture women's experiences of all of these relationships, participants were asked to complete a set of questionnaires and an in-depth semi-structured interview. In that interview, I sought not only to examine participants' current friendships and relationships, but also their teenage friendships and how they felt that these have changed over time, as well as how they felt about those changes (if any). I decided to ask about the changes in women's friendships and relationships over time to investigate their perceptions of their development in terms of social relationships and outcomes, which is currently unknown. While the research discussed above has elaborated on the developmental changes in the social relationships for neurotypical girls as they become women, nothing is known about how the social lives of autistic girls change as they mature. I decided to continue the mixed-methods approach utilised in Chapter Two as these combined quantitative and qualitative measures revealed more about the nature of adolescents' experiences than either could have done alone. Ideally the questions of this Chapter – how do the social relationships



and psychosocial outcomes of autistic girls develop as they mature? – would be addressed using a longitudinal study, following the same group of autistic girls into adulthood. Such a longitudinal study was not possible within this PhD, as it would take longer than the three years assigned to any PhD programme, and so I asked participants to reflect on their own histories, which allows for an examination of their perceptions of change over time if not a structured assessment of these changes as they happen.

On the one hand, I expected that autistic and neurotypical women would share many aspects of their friendships and other relationships. Just as autistic and neurotypical adolescent girls are faced with similar social expectations and pressures, so are autistic and neurotypical adult women (see, for example, Steward, 2013). There is also some research into sex differences in autism which has found that women are less severely affected in the social domain specifically (Head, McGillivray, & Stokes, 2014; McLennan, Lord, & Schopler, 1993). The findings from Chapter Two also support this possibility, as autistic and neurotypical girls had similar social experiences, a pattern which may well also be present in adulthood.

On the other hand, I also expected that there would be qualitative differences between the social experiences of the two groups of women, particularly around how autistic women recognised the intentions of others, and how they understood and responded to conflict in their relationships. This pattern was identified in the experiences of autistic girls in Chapter Two, and it is likely that these difficulties are also reflected in adulthood. There is also some evidence from the accounts of autistic self-advocates that they can find it difficult to understand the motivations of others (Steward, 2013). The limited research on the experiences of late-diagnosed autistic women has highlighted the vulnerability of these women, including widespread reports of sexual abuse (Bargiela et al., 2016). I therefore expected that such vulnerability might also be present in my sample. Challenges understanding others'

motivations towards them (Baron-Cohen, 2000) in particular might play a role in exposing autistic women to these instances of manipulation and potential vulnerability.

An additional aim of this study was to examine potential differences between autistic and non-autistic adult women in terms of their psychosocial outcomes. While anxiety alone was measured in Chapter Three, I expanded the mental health component for the current study because previous research has shown that mental health conditions, especially anxiety and depression, are more prevalent in both female (Angst & Dobler-Mikola, 1985; Kessler et al., 1994; Nolen-Hoeksema, 1990) and autistic populations (Kim et al., 2000; Strang et al., 2012; White et al., 2009), particularly autistic women (Baldwin & Costley, 2016). To address this issue, I administered a battery of questionnaires and tests, including The Awareness of Social Inference Test (TASIT; McDonald et al., 2003) to measure social awareness, the General Anxiety Disorder-7 questionnaire (GAD-7; Spitzer, Kroenke & Williams, 2006) to index women's mental health problems, the Patient Health Questionnaire-9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001) to measure depressive symptoms and the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985) to measure participants' life satisfaction. I expected autistic women to report greater levels of mental health difficulties than neurotypical women.

## **4.2. Ethics**

Ethical approval for this study was given by the UCL Institute of Education Ethical Committee. All participants gave their written consent, on a form which was purposefully written in accessible language, and I talked through the form with each participant to make sure that they understood that they were agreeing to take part, that they could change their mind and withdraw, and what I wanted to talk to them about. As the topics this study investigated were potentially sensitive and upsetting (friendships, romantic relationships, and conflict incidents), I took care to ensure that participants did not become overly distressed, although some distress

was unavoidable considering the nature of the disclosures made by some participants. I did this by telling participants in advance what sorts of topics I would be talking to them about, and once we were in conversation I offered to let them change the topic or skip questions which they found too emotionally difficult. If any participants made historic disclosures, I asked whether they had received support or would appreciate signposting towards the appropriate services. All participants who made these historic disclosures said that they had either received support or had no interest in taking the matter further. I spoke to my supervisors, LP and VH, about the disclosures which had been made to me, and we decided that as the women are legal adults who were not in a position of ongoing risk, it was their choice as to whether to proceed with charges relating to their disclosures, and so I did not report these to any external body.

### **4.3. Method**

#### **4.3.1 Participants.**

Nineteen adult autistic women and 19 adult neurotypical women, all aged between 20 and 40 years, were recruited from adult support groups across England, existing CRAE contacts and advertising through autism networks on social media. Neurotypical women were recruited through university contacts, social media, and word of mouth. Inclusion criteria were that women should be between the ages of 19 and 40 years old, and have or be in the process of getting an autism diagnosis for the autistic group. No further inclusion criteria were applied in order to ensure that the participants recruited reflected the range of life experiences of autistic women. I decided to offer participation to adult women who were in the process of getting a diagnosis of being on the autism spectrum because of the recognised challenges for adult women in receiving clinical recognition (Bargiela et al., 2016; Gould & Ashton-Smith, 2011; Wilson et al., 2016). Their inclusion means that the results of this study reflect the experiences of women who receive their diagnoses well into adulthood, as well as those who receive them in early adulthood. I decided to use 19 as the earliest age for inclusion in this adult study

because 18 (the upper cut-off age for the adolescent study) marks the end of secondary education. Therefore, by 19, participants have left school and are engaging with the world with adult expectations, either in terms of continuing education or entering employment, and these expectations can change the nature of the relationships they experience. I decided to use 40 years old as the cut-off point for recruitment because by this point most individuals have reached a relatively stable point in their social lives – for example, the average age for getting married in the UK is now 34 (Office for National Statistics, 2014). Restricting participation to those who were 40 and younger also meant that the participants were close enough to their adolescence to recall events during that period accurately. Indeed, research has shown that adolescence is such a significant time that adults have a ‘memory bump’ for it, meaning that they recall adolescence more clearly than other timeframes (Crane, Goddard, & Pring, 2012). A cut-off of 40, however, meant that I was not able to capture the life-changes associated with aging for women, such as the menopause or children leaving home. These are important topics for research to consider, but I felt that they would be beyond the scope of this PhD, in which I intended to focus on adolescence and early- to mid-adulthood. I also felt that greatly increasing the age range of the adult participants would require stratifying the results by age, reducing the numbers in each group and therefore reducing the statistical power and validity of any comparisons drawn between adults and adolescents. No participants were omitted from the sample, as I wanted to ensure that the groups reflected the range of experiences which are found across the autism spectrum.

As shown in Table 4.1, all participants had a Full-Scale IQ greater than 70, as measured by the Wechsler Abbreviated Scales of Intelligence – 2<sup>nd</sup> Edition (WASI-2) (Wechsler, 2011), on the two-scale version on the measure (FSIQ-2). The two-scale version of the WASI-2 was used for this study, where the four-scale version had been used in the adolescent study, because of participant accessibility issues, with several autistic participants expressing a preference for

online communication (Skype, email). Therefore, in-person or video-linked testing was used in some cases in order to minimise the possibility of distress and maximise the response rates for the study. This meant that the 'Blocks' task was not possible with these participants, as this requires physical manipulation of the materials. The two-scale WASI-2 was then used with subsequent participants in order to maintain equivalence of testing across the sample. While there are potential questions about the validity of the WASI-2 norms considering this deviation from the standardised testing procedures, I attempted to ensure that the tests were delivered as closely to the standard presentation as possible. In the standard procedure, participants are shown the list of words to define (the Vocabulary subscale) on a set of pages in a spiral bound book, and they are asked to identify the image which completes a pattern (the Matrix subscale) from pages in the same book. Therefore, I decided to carry out these measures via video-link by holding up the relevant pages of the book, meaning that the differences between my administration and the standardised administration was minimised. Independent sample t-tests revealed no significant differences between autistic and non-autistic women on chronological age,  $t(36)=-.64$ ,  $p=.53$ ,  $d=.21$ , Full-Scale IQ,  $t(36)=.43$ ,  $p=.67$ ,  $d=.14$ , Performance IQ (as measured by the Matrix subscale of the WASI-2),  $t(36)=.12$ ,  $p=.89$ ,  $d=.04$ , and Verbal IQ (as measured by the Vocabulary subscale of the WASI-2),  $t(36)=.05$ ,  $p=.96$ ,  $d=.02$ . There were also no significant group differences regarding current medication use, with seven of 19 (35%) autistic women taking medication and three of 19 (16%) neurotypical women taking medication,  $\chi^2(1)=2.17$ ,  $p=.27$ , which means that differences in responses and recall between the groups were not being influenced by medication. The majority of participants were of White ethnic background (81.6%,  $n=31$ ), with 16% ( $n = 6$ ) being of Asian ethnic background and 3% ( $n = 1$ ) being of Black ethnic background.

Table 4.1

*Participant characteristics, displayed by diagnostic group.*

Group	Autistic Women	Neurotypical Women
	( <i>n</i> =19)	( <i>n</i> =19)
	M (SD)	M (SD)
	Range	Range
Age	30.27 (6.11)	29.14 (4.74)
	20.68 – 40.21	21.11 – 39.68
Full Scale IQ-2 <sup>a</sup>	108.79 (11.57)	110.42 (11.63)
	81 – 133	84 – 129
Vocabulary Scores <sup>a</sup>	55.95 (11.52)	57.32 (10.42)
	34 – 79	34 – 79
Raw Performance IQ	54.21 (5.53)	54.68 (5.92)
	42 – 71	46 – 71
Matrix Scores <sup>a</sup>	22.63 (2.43)	22.53 (2.19)
	16 – 27	16 – 27
SRS-2 Total Score <sup>b</sup>	104.16 (21.23)	21.32 (11.62)
	73 – 146	10 – 62

Notes: <sup>a</sup> Full-Scale-2 IQ score is calculated from the scores of the Vocabulary and Matrix sub-scales of the WASI-2, following the Manual (Wechsler, 2011). These raw scores are then scaled to generate an IQ estimate which accounts for age differences in expected scores. <sup>b</sup> The Social Responsiveness Scale (2<sup>nd</sup> Edition) (SRS-2) is a self-report measure assessing levels of autistic behaviours over the last six months (Constantino & Gruber, 2012). Higher scores reflect more autistic behaviours.

The majority of autistic participants had either received an independent clinical diagnosis of an autism spectrum condition (*n*=17) according to either DSM (APA, 2000, 2013) or ICD-10 (WHO, 1993) criteria. All scored well above the threshold score of 68 (see Table 4.1 for scores) on the Social Responsiveness Scale – 2<sup>nd</sup> Edition (SRS-2) (Constantino & Gruber, 2012) – and significantly higher than the SRS-2 scores of non-autistic women,  $t(36)=14.92$ ,  $p<.01$ ,  $d=4.84$  – to the extent that the two distributions did not overlap. Two of the 19 women were awaiting diagnosis after referral by their GP. These two participants were included in analyses despite waiting for a formal clinical diagnosis as they scored above cut-

off on the SRS-2 (Constantino, 2012) (score of 84 and score of 96) and had been referred to specialist services by their GP, who considered them to be likely to receive diagnosis once a diagnostic appointment was available. Analyses were run both with and without these two participants included and no differences were observed in the statistical results, so they were retained in subsequent analyses. The approach of including female participants who are awaiting a formal diagnosis has been used in other research papers (such as Sproston et al., 2017), as it is well-recognised that there are challenges facing women and girls in terms of getting a referral and diagnosis, as discussed in Chapter One and in the Introduction to this Chapter.

In terms of broader life outcomes, all neurotypical women reported being in education (n=3; 16%) or employment (n=16; 84%) at the time of testing, while five (25%) of the autistic women reported being currently unemployed, one was currently in education (5%), and the rest were in employment (n=13, 70%). In terms of sexuality, 74% (n=14) of the autistic women described themselves as heterosexual, with one autistic women identifying as homosexual (5%), three identifying as bisexual (16%), and one identifying as asexual (5%). Amongst neurotypical women, 84% (n=16) described themselves as heterosexual, none identified as homosexual, one identified as bisexual (5%) and two identified as asexual (10%). Similar numbers of women were either single (autistic: 31%, n=6; neurotypical: 37%, n=7) or in relationships (autistic: 53%, n=10; neurotypical: 58%, n=11). A greater percentage of autistic women were divorced (16%, n=3) than neurotypical women (5%, n=1). Of the autistic women, 5 were mothers (25%), with three women having two children, one woman having a single child, and one woman was pregnant with her first child at the time of testing. Of these four autistic mothers, three had children who had also been diagnosed as autistic – for one woman, both her children had formal diagnoses. Amongst the neurotypical women, 4 were mothers

(21%), three of two children and one of an only child, and none of these children had a diagnosis of autism.

### **4.3.2 Measures.**

Similar to the research described in Chapter Two, data collection was carried out through semi-structured interviews, questionnaires, and video measures. The overlapping measures are briefly described below (see Chapter Two for full details), while the new measures are described in full.

#### ***4.3.2.1 Relationships closeness: Unidimensional Relationship Closeness Scale (URCS) (Dibble, Levine, & Park, 2012)***

Participants completed the *Unidimensional Relationship Closeness Scale (URCS)* (Dibble, Levine, & Park, 2012), a 12-item self-report questionnaire which asks them to rate features of their closest relationship on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Scores are then calculated by averaging across all 12 items. It has not previously been used with autistic people, and therefore it is not possible to refer to an autistic population norm in the same way as the norms for the relationship categories. Nevertheless, the URCS is a widely used measure in relationship studies (Chen, Lee, Lin, & Chang, 2017; Sahana & Ganth, 2016) and is better validated than many other, similar questionnaires. I therefore felt it could be useful in a field of study where there are currently no autism-specific measures. For this study, the participant's most significant relationship was specified as a romantic partner if they had one, and if not, their best friend. The URCS measures how close their relationship is, with a population mean score of 6.00 for romantic couples and 5.02 for same-sex friends (Dibble, Levine, & Park, 2012). The URCS has been found to have high reliability (Cronbach's  $\alpha = .96$ ) (Dibble et al., 2012).



#### **4.3.2.2 Social awareness: TASIT (McDonald et al., 2003)**

Participants completed the *TASIT Social Vignettes – Part 3 (McDonald et al., 2003)* (see Chapter Three for more detailed description), a video measure containing 16 social vignettes tapping the ability to distinguish between sincerity, sarcasm, and lying, along with first- and second-order ToM understanding. Participants were asked four questions about each vignette, and each vignette was then scored up to four, yielding a maximum score of 64. Vignettes are divided evenly (8 videos each) to assess Lie-awareness and Sarcasm-awareness. The scores on these subscales are directly comparable as the measure has equal numbers of items addressing each construct, with a maximum score of 32 each (higher scores indicate better social awareness). The four questions about each video are divided into four categories – Do, Say, Think, and Feel – as described in Chapter Three. Higher scores reflect greater social inference skills. Cronbach’s  $\alpha$  in this sample was .61, suggesting that it was reasonably reliable in this sample.

#### **4.3.2.3 Mental health.**

Participants’ mental health problems were assessed via a collection of measures covering a wide range of aspects of general mental health, which took approximately 10 minutes to complete altogether. I chose the measures described below in part for their brevity, in order to avoid burdening participants with an overly long testing session. While longer measures may have had better psychometric properties, the testing battery is extensive, and with the inclusion of an interview (which was highly variable in length, depending on how much each participant wanted to say), I wanted to ensure that participants were as comfortable as possible with the overall experience of taking part in this study, rather than feeling that they were being handed lots of long questionnaires to fill out. On all measures, higher scores indicated greater levels of mental health difficulties. Although many are used routinely throughout the National Health Service (NHS) in England, including with autistic people, it is

nevertheless noteworthy that none of these measures have been separately validated or normed with an autistic population, which means that their psychometric properties on an autistic population are unclear.

#### ***4.3.2.4 The Generalised Anxiety Disorder Screener (GAD-7) (Spitzer, Kroenke, & Williams, 2006).***

The GAD-7 is a self-report anxiety questionnaire. It has seven items (e.g., ‘Over the last two weeks, have you been bothered by feeling nervous, anxious or on edge?’), which are rated on a 5-point Likert scale ranging from 0 (not at all) to 4 (nearly every day) in terms of how frequently they have occurred in the last two weeks. Responses to each item are then summed, for a maximum total score of 28. It has been widely used in primary care settings (Maier et al., 2000; Ruiz et al., 2011), and has been validated in the general population, with high estimates of reliability (Cronbach’s  $\alpha = .89$ ; Spitzer, Kroenke, Williams, & Lowe, 2008). The GAD-7 has gendered normative scores, with women ( $M=3.2$ ) scoring significantly higher than men ( $M=2.7$ ) overall on the measure, indicative of greater anxiety in women (Spitzer, Kroenke, & Williams, 2008). It has good sensitivity (89%) and specificity (82%) (Spitzer, Kroenke, Williams & Lowe, 2008). Internal consistency estimates were moderately high in the autistic (Cronbach’s  $\alpha = .75$ ), and neurotypical (Cronbach’s  $\alpha = .71$ ) groups in this study.

#### ***4.3.2.5 The Liebowitz Social Anxiety Scale (LSAS) (Liebowitz, 1987).***

The LSAS is a 24-item self-report scale which asks participants both how fearful they are of social situations and how likely they are to avoid that situation. The items (e.g., ‘How anxious would you feel eating in public?’ / ‘How likely would you be to avoid eating in public?’) are rated on a 4-point Likert scale for each aspect, ranging from 0 (none/never) to 3 (severe/usually). This measure does not have a specific time frame which the participant is asked to consider, but instead asks how they would usually feel and act when faced with each situation. It results in a five-category scoring system ranging from mild social anxiety to very

severe social anxiety, and also generates scores on two subscales, one for fear and one for avoidance. The LSAS has been found to have high internal consistency (Total score: Cronbach's  $\alpha = .96$ ; fear subscales, avoidance subscale: Cronbach's  $\alpha = .92$  and  $\alpha = .92$ , respectively) (Heimberg et al., 1999). Reliability for each subscale was calculated for each group, with Cronbach's  $\alpha = .49$  for the Social Anxiety subscale and Cronbach's  $\alpha = .75$  for the Social Avoidance subscale in the autistic group, with Cronbach's  $\alpha = .80$  for the Total scale amongst autistic participants. In the neurotypical group, Total scale  $\alpha = .84$ ,  $\alpha = .74$  for social anxiety and  $\alpha = .67$  for avoidance. The particularly low reliability estimate for the social anxiety subscale amongst autistic women is concerning, and therefore caution is warranted when interpreting these scores.

#### ***4.3.2.6 Patient Health Questionnaire (PHQ-9) (Spitzer, Kroenke & Williams, 1999).***

The PHQ-9 is a nine-item self-report measure designed to assess individuals' recent levels of depression. Participants are asked to rate how frequently they have felt certain ways (e.g., 'Over the last two weeks, have you been bothered by feeling down, depressed, or hopeless?') in the last two weeks on a four-point Likert scale ranging from 0 (not at all) to 3 (nearly every day). Responses to each item are then summed, for a maximum total score of 27. The PHQ-9 has been found to have excellent internal reliability (Cronbach's  $\alpha = .89$ ), and has 88% sensitivity and specificity for major depression (Kroenke, Spitzer & Williams, 2001). In this sample, internal consistency was moderate-to-high (Cronbach's  $\alpha = .86$  in autistic women;  $\alpha = .67$  in neurotypical women).

#### ***4.3.2.7 The Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen & Griffin, 1985).***

The SWLS is a five-item self-report questionnaire, which assesses how satisfied an individual is with their current life circumstances. The items (e.g., 'In most ways my life is close to my ideal') are rated on a seven-point Likert scale ranging from 1 (strongly disagree)

to 7 (strongly agree) (scores are summed, giving a maximum score of 35), with higher scores reflecting greater life satisfaction. The SWLS has been found to have both high internal validity ( $\alpha = .87$ ) and high test-retest reliability ( $\alpha = .82$ ) (Diener, Emmons, Larsen & Griffin, 1985). Internal consistency estimates were moderately high for the current samples (Cronbach's  $\alpha = .75$  for autistic women;  $\alpha = .86$  for neurotypical women).

#### ***4.3.2.8 Zohar-Fineburg Obsessive-Compulsive Screen (Z-FOCS) (Fineburg et al., 2003).***

The Z-FOCS is a self-report questionnaire that assesses individuals' level of Obsessive Compulsive Disorder (OCD) symptoms. It has five items (e.g., 'Do you clean a lot?'), which are answered yes/no. One 'yes' answer is considered to warrant further clinical enquiry. One of the items, 'Are you concerned about orderliness or symmetry?', overlapped considerably with one of the diagnostic criteria for autism (APA, 2013; a preference for order and sameness). To avoid overestimating OCD in this sample, for this study, autistic participants were required to endorse one of the other four items in order to be indicative of OCD. The Z-FOCS has been found to have reasonable reliability ( $\alpha = .66$ ) and high sensitivity (94%) and specificity (85%). In the current sample, Cronbach's  $\alpha = .25$  amongst neurotypical women and  $\alpha = .33$  amongst autistic women, both of which are low, although it is worth noting that the scale only has five items and this is a small sample. Nevertheless, caution is warranted when interpreting the results of this measure amongst both groups.

#### ***4.3.2.9 The SCOFF Questionnaire (SCOFF) (Morgan, Reid, & Lacey, 1999).***

The SCOFF is a five-item self-report questionnaire, which measures participants' level of disordered eating. The acronym comes from the items themselves – Sick, Control, One stone, Fat, Food. Items (e.g., 'Do you believe yourself to be fat when others say you are not?') are answered 'yes/no', and a score of 2 or more is indicative of an eating disorder. Answers are summed, for a maximum score of 5. The SCOFF questionnaire has been found to have 100%

sensitivity for anorexia or bulimia, and specificity of 87.5% (Morgan, Reid, & Lacey, 1999). Reliability in the current samples was good (Cronbach's  $\alpha = .71$  amongst autistic women; Cronbach's  $\alpha = .68$  amongst neurotypical women).

#### ***4.3.2.10 The CAGE Questionnaire (CAGE) (Ewing, 1984).***

The CAGE is 4-item self-report questionnaire measuring problematic drinking levels. Each item (e.g., 'Do you ever feel guilty about your drinking?') is answered 'yes/no', with a score of 2 or more being the cut-off for problematic alcohol consumption levels. Answers are summed, with a maximum score of 4. It has been found to have good sensitivity and specificity, at 84% and 90% respectively (Soderstrom et al., 1997). I decided to include a screening measure for problematic drinking in this study because of the links between anxiety and alcohol misuse which have been established in the neurotypical population (Buckner, Eggleston, & Schmidt, 2006). Considering that it was expected that autistic women would be more anxious than neurotypical women, I wanted to investigate whether they would also show increased drinking, possibly as a form of coping mechanism in social situations. In our sample, reliability was Cronbach's  $\alpha = .50$  for autistic women and Cronbach's  $\alpha = .78$  for neurotypical women.

#### ***4.3.2.11 Semi-structured Interview.***

Semi-structured interviews were conducted with all participants, with interviews ranging between 19.15 and 67.60 minutes for the autistic women ( $M=34.48$ ,  $SD=12.18$ ) and between 17.95 and 55.33 minutes for the neurotypical women ( $M=32.40$ ,  $SD=9.20$ ), with no significant differences between the groups in terms of their interview length,  $t(32)=-.56$ ,  $p=.58$ . Four participants asked to complete, their interview in written format (2 autistic, 2 neurotypical), either to give them more processing time ( $n=1$ ), because of an aversion to using a phone ( $n=1$ ), or because of limits on the time they were able to see me for in-person testing ( $n=2$ ). I felt that these were reasonable adjustments to make in ensuring the comfort of my participants in taking part in research, which could have been inherently anxiety-inducing for

them, and so agreed that this would be possible. In these cases, I sent the participant the interview schedule (see Table 4.2) and asked them to answer the primary questions (which in the sent version were signified in bold type) and to consider the prompt questions as extra guidance if they were unsure of what sorts of information to provide. They then typed their answers below the primary or prompt questions as relevant, and returned the document to me via email.

Participants were asked a number of open questions about their experiences of friendship, both positive and negative; their experiences of overt and relational aggression; their understanding of the meaning of friendship; who their friends are; and their understanding of social situations. The questions in the semi-structured interview were based on those used in the adolescent interview described in Chapter Two, following the ‘Friends and Marriage’ section of the ADOS-2 and the interviews used in Sedgewick et al (2016). For example, participants were asked questions such as “What does being a friend mean to you?” or “How is being in a romantic relationship different to a friendship?” (see Table 4.2 for full interview schedule). Similar to the adolescents’ interviews (see Chapter Two), it also included a critical incident section examining what they felt to be key incidents in their social lives (Flanagan, 1954) with two questions: “Can you tell me about a time you had a lot of fun with your friends, or when you did something good with a friend?” and “Can you tell me about a time when something bad happened with your friends, or when your friends did something you didn’t like?”. These questions sought to explore participants’ cognitions around positive and negative events.

#### 4.3 General Procedure

Adult participants were seen for one session of approximately 1.5 – 2 hours either at UCL Institute of Education (n=14), in their home (n=20), or via video-link (n=4). Two participants who took part via video-link prepared written answers for the interview portion of

the study. The order of task completion was flexible to accommodate the preferences of each participant, with breaks included within the session.

Table 4.2

*Interview schedule used with autistic and neurotypical women, with main questions and prompts.*

Key Question	Question Prompts
Can you tell me a bit about your friends?	<p>Do you have many friends?</p> <p>Where do you see them? How often?</p> <p>What do you do with your friends?</p> <p>Do you use the internet to keep in touch with friends?</p> <p>Are you happy with the friends you have?</p> <p>How have these things changed since you were a teenager?</p>
What does being a friend mean to you?	<p>How do you know when someone is your friend? What is a good friend?</p> <p>Are there some friends who are more important than others? Why?</p> <p>Have you ever had not-so-good friends, or people who pretended to be your friend?</p> <p>How do you choose your friends? Is this different to when you were a teenager?</p>
Can you tell me some good things and some difficult things about your friends?	<p>Do your friends help you?</p> <p>Do you argue with your friends?</p> <p>How do you try to deal with that?</p> <p>Has how you respond to conflict and arguments changed since you were younger?</p>
What about romantic relationships?	<p>Are you dating? If not: Would you like to in the future?</p> <p>How is someone you date different to a friend?</p> <p>How has dating changed for you since you were a teenager?</p>
Can you tell me about a time when something bad happened with your friends, or when your friends did something you didn't like?	<p>Why do you think it happened?</p> <p>What did you do?</p>
Can you tell me about a time when you had a lot of fun with your friends, or when something good happened with them?	<p>What happened afterwards? Did you sort it out? How?</p> <p>How did you feel?</p>
(same prompt questions)	<p>Did people remember? Did it change your friends?</p> <p>Would you do anything different if it happened again?</p>
Is there anything else you think it would be interesting for me to know about your friendships or how you get on with people?	



#### **4.4 Data Analysis**

Data generated from the questionnaire measures outlined above were analysed in SPSS (SPSS v.22). Group-based comparisons were conducted using t-tests on the total and sub-scale scores for each measure.

The 38 interviews were transcribed verbatim, and subjected to Thematic Analysis following Braun and Clark (2006). Their phases of Thematic Analysis include: (1) data familiarisation, (2) generation of initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) report production. I carried out initial thematic analysis, with my two supervisors (LP and VH) carrying out thematic analysis on 20% of the interviews. We then discussed and agreed upon the themes identified from the data. We used an inductive approach, starting with research questions based on examining whether there were differences between autistic and neurotypical women in regards to their friendships and conflict experiences. This process utilised a constructionist approach, seeking to assess the meaning of what was said rather than carry out a detailed linguistic assessment as in discourse analysis. Data were analysed at the semantic level initially, with the generated themes being collapsed based on overarching similarities.

#### **4.5 Results**

This section begins by describing the quantitative data, first, examining between-groups analyses on each of the questionnaire and test measures (see Table 4.3 for results), and second, performing a regression analysis to determine which features may predict relationship closeness, akin to the analyses described in Chapter Three with adolescents. Finally, I discuss the results of the qualitative data from the semi-structured interviews.

#### **4.5.1 Between-groups analysis.**

##### **4.5.1.1 Relationships.**

On the Unidimensional Relationship Closeness Scale (URCS), autistic women ( $M=5.33$ ,  $SD=1.21$ ) rated their partner/best friend relationships as significantly less close than neurotypical women ( $M=6.13$ ,  $SD=0.70$ ),  $t(36)=2.47$ ,  $p=.02$ ,  $d=.79$  (see Table 4.3 for scores). Although the number of autistic women (57.9%) rating their best friend on the URCS was higher than for neurotypical women (31.6%), this difference not reach statistical significance,  $\chi(1)=2.66$ ,  $p=.10$ . It should be noted, however, that women who rated best-friendships rated these relationships as significantly less close ( $M=5.33$ ,  $SD=0.97$ ) than women who rated romantic relationships ( $M=6.02$ ,  $SD=1.04$ ),  $t(36)=2.10$ ,  $p=.04$ ,  $d=.70$ .

A two-way ANOVA (person rated: friend, partner; group: autistic, neurotypical) revealed that autistic and neurotypical women rated their friendships and romantic relationships as equally close,  $F(34)=.59$ ,  $p=.45$ ,  $\eta_p^2=.02$ , with no effect of group or gender, and no group x gender interaction. Autistic women's ratings of closeness were similar to normative scores (see Table 4.3), regardless of whether they were rating a friend or romantic partner,  $F(34)=.11$ ,  $p=.74$ ,  $\eta_p^2=.003$ , suggesting that their relationships are as emotionally close as would be expected in a neurotypical sample. Taking into consideration the different population norms (Dibble, Levine, & Park, 2012) for the two relationship types (friend, partner), there was no significant difference between the numbers of autistic and neurotypical women who rated their relationship as similarly close or closer than expected (i.e., whether they scored it as above the population norm of 6.00 for romantic relationships and 5.02 for friendships), with 68.4% of autistic women and 73.7% of neurotypical women scoring above the norm,  $\chi(1)=.13$ ,  $p=.72$ . There was no significant difference between the friend vs. partner groups regarding whether their relationship was rated as above the population norm,  $t(36)=.45$ ,  $p=.66$ ,  $d=.16$ , with those

who considered a friend for the questionnaire being equally likely to rate the relationship as meeting the population norm for relationship closeness.

Table 4.3

*Count, percentage, and overall scores on the Unidimensional Relationship Closeness Scale in autistic and neurotypical women.*

Rated Individual	Group					
	Autistic (n=19)			Neurotypical (n=19)		
	UCRS Score			UCRS Score		
	Rated n (%)	M (SD) Range	Above Norm n (%)	Rated n (%)	M (SD) Range	Above Norm n (%)
Friend	10 (52.6)	5.18 (1.12) 3.00 – 6.75	7 (36.8)	6 (31.6)	5.57 (0.66) 4.58 – 6.58	5 (26.3)
Partner	9 (47.4)	5.50 (1.34) 2.08 – 6.58	6 (31.6)	13 (68.4)	6.38 (0.58) 5.17 – 7.00	9 (47.4)

*Note:* This table shows how many autistic and neurotypical women rated friends vs. partners on the Unidimensional Relationship Closeness Scale (Dibble, Levine, & Park, 2012), and the percentage of those relationships that were scored as above the population closeness norms for those respective categories.

#### 4.5.1.2 Psychosocial outcomes (social awareness).

Overall and subscale scores by group are presented in Table 4.4. An independent samples t-test on TASIT total scores revealed significant group differences,  $t(36)=8.01, p<.01, d=2.60$ , with autistic women scoring significantly lower ( $M=45.26, SD=6.84$ ) than neurotypical women ( $M=58.74, SD=2.62$ ). This pattern was also true for both the Lie,  $t(36)=4.31, p<.01, d=1.39$ , and Sarcasm,  $t(36)=9.10, p<.01, d=2.95$ , subscales of the TASIT, although autistic women were better at accurately identifying lies ( $M=25.16, SD=3.38$ ) than they were sarcasm ( $M=19.95, SD=4.60$ ).

Table 4.4.

Total and subscale scores on The Awareness of Social Inference Test (TASIT) (McDonald et al., 2004) by group.

Scale	Group	
	Autistic ( <i>n</i> =19)	Neurotypical ( <i>n</i> =19)
	M (SD)	M (SD)
	Range	Range
TASIT Total (max. score = 64)	45.26 (6.85) 33 – 56	58.74 (2.62) 55 – 62
TASIT Lie (max. score = 32)	25.32 (3.09) 21 – 31	28.84 (1.77) 26 – 31
TASIT Sarcasm (max. score = 32)	19.95 (4.60) 12 – 27	29.89 (1.24) 27 – 32
TASIT Do (max. score = 16)	12.05 (2.27) 8 – 16	15.95 (0.23) 15 – 16
TASIT Say (max. score = 16)	11.42 (2.19) 8 – 15	15.11 (1.05) 13 – 16
TASIT Think (max. score = 16)	13.32 (3.11) 4 – 16	14.68 (1.64) 11 – 16
TASIT Feel (max. score = 16)	10.53 (2.77) 6 – 15	14.21 (1.44) 11 – 16

On three of the question subscales ('what is the target character Doing, Saying, and Feeling?'), there was a consistent pattern such that neurotypical women were significantly more accurate at identifying the intentions or emotions of the target characters (all  $p$ s < .01). There was no significant group difference on the Think subscale ('what is the target character Thinking?'),  $t(36)=1.57$ ,  $p=.13$ ,  $d=.54$ .

#### **4.5.1.3 Psychosocial outcomes (mental health).**

Overall scores for all further psychosocial outcome measures are presented in Table 4.5. As expected, autistic women showed poorer outcomes on most of the mental health measures compared with non-autistic women.

Autistic women had higher anxiety scores than neurotypical women, and were significantly more likely to score above the cut-off level on the GAD-7, with 63% (n=13) of autistic women and 11% (n=2) of neurotypical women scoring above cut-off,  $\chi(1)=11.31$ ,  $p<.01$ , indicating clinically-significant levels of anxiety in the autistic group. Autistic women scored significantly higher than neurotypical women, reflecting greater anxiety, on the total scores for both the GAD-7,  $t(36)=5.92$ ,  $p<.01$ ,  $d=.02$ , and for the Social Anxiety,  $t(36)=7.65$ ,  $p<.01$ ,  $d=2.48$ , and Social Avoidance,  $t(36)=5.88$ ,  $p<.01$ ,  $d=1.91$ , subscales of the LSAS. Similar to the GAD-7, none of the neurotypical women scored above cut-off for social anxiety on the LSAS, but significant numbers of autistic women did (58%; n=12),  $\chi(1)=15.48$ ,  $p<.01$ .

On the PHQ-9, more autistic women scored above cut-off levels for clinically-significant depression (autistic women: 68%, n=14; neurotypical women: 21%, n=5), a pattern which reached significance,  $\chi(1)=8.62$ ,  $p<.01$ . Autistic women also scored significantly higher on overall scores on the PHQ-9, indicating elevated symptoms of depression worthy of further clinical investigation,  $t(36)=3.25$ ,  $p<.01$ ,  $d=1.06$ .

Table 4.5

Total scores and percentages of participants scoring above clinical screening cut-off levels on psychosocial outcome measures by group.

Measure	Group	
	Autistic ( <i>n</i> =19)	Neurotypical ( <i>n</i> =19)
	M (SD) Range	M (SD) Range
GAD-7 Total (max. score = 28)	11.42 (4.45) 4 – 20	4.32 (2.75) 0 – 10
% above GAD-7 cut-off	63.2	10.5
PHQ-9 Total (max. score = 21)	11.21 (6.08) 1 – 23	3.58 (3.20) 0 – 10
% above PHQ-9 cut-off	68.4	21.1
LSAS Social Anxiety Total (max. score = 36)	37.79 (11.72) 19 – 56	14.37 (6.39) 7 – 30
LSAS Social Avoidance Total (max. score = 36)	30.47 (11.72) 10 – 73	7.26 (4.65) 1 – 18
LSAS Total (max. score = 72)	68.26 (26.31) 32 – 121	21.63 (10.61) 8 – 48
% above LSAS cut-off	57.9	0
SWLS Total (max. score = 7)	20.58 (2.69) 15 – 27	22.58 (3.82) 15 – 30
% above SWLS norm	42.1	63.7
Z-FOCS Total (max. score = 4)	2.53 (1.12) 1 – 5	1.47 (1.07) 0 – 4
% above Z-FOCS cut-off	52.6	10.5
SCOFF Total (max. score = 5)	1.11 (1.45) 0 – 4	1.26 (1.44) 0 – 4
% above SCOFF cut-off	36.8	31.6
CAGE Total (max. score = 4)	0.42 (0.76) 0 – 2	1.00 (1.29) 0 – 4
% above CAGE cut-off	15.8	31.6

Note: GAD-7 (Spitzer, Kroenke, & Williams, 2006) measures general anxiety; PHQ-9 (Spitzer, Kroenke & Williams, 1999) measures depression; LSAS (Liebowitz, 1987) measures social anxiety, social avoidance and level of social phobia; SWLS (Diener, Emmons, Larsen & Griffin, 1985) measures life satisfaction; Z-FOCS (Fineburg et al., 2003) measures OCD traits; SCOFF (Morgan, Reid, & Lacey, 1999) measures eating disorder traits; and the CAGE (Ewing, 1984) measures alcoholic traits.

Even with the use of potentially more conservative scoring criteria on the OCD screening measure (Z-FOCS; Fineberg et al., 2003), significantly more autistic women scored above cut-off (autistic women: 52%,  $n=10$ ; neurotypical women: 11%,  $n=2$ ,  $\chi(1)=7.79$ ,  $p<.01$ ).

Autistic women were significantly more likely to report being dissatisfied with their current life circumstances on the Satisfaction with Life Scale, scoring below 20 (autistic women: 58%,  $n=11$ ; neurotypical women: 26%,  $n=5$ ),  $\chi(1)=3.89$ ,  $p=.05$ . On their overall average scores, however, there was no significant difference between autistic and neurotypical women,  $t(36)=1.87$ ,  $p=.07$ ,  $d=.01$ .

There were two mental health measures on which there were no significant group differences. Autistic and neurotypical women reported a similar rate of issues with food and weight loss on the SCOFF (autistic women: 37%,  $n=7$ ); neurotypical women: 32%,  $n=6$ ), with no significant differences either in percentage reporting disordered eating,  $\chi(1)=.12$ ,  $p=.73$ , or in the overall number of reported difficulties,  $t(36)=.23$ ,  $p=.82$ ,  $d=.03$ . This pattern was also true on the CAGE measure, with a similar proportion of participants scoring above the cut-off level for problems with alcohol (autistic women: 16%,  $n=4$ ; neurotypical women: 32%,  $n=6$ ),  $\chi(1)=1.31$ ,  $p=.25$ , and similar overall scores,  $t(36)=1.18$ ,  $p=.24$ ,  $d=.54$  (see Table 4.5).

#### **4.5.2 Within-groups analysis**

The correlations discussed below can be seen in the correlation matrices in Table 4.6. Results for autistic women are above the diagonal, results for neurotypical women are below the diagonal. To account for running multiple analyses, the more conservative significance level of .01 was used, rather than .05. Bonferroni calculations were not applied as the sample size is too small to support their use, but the use of .01 significance level gives reasonable confidence in the accuracy and validity of the reported results.

Amongst autistic and neurotypical women, relationship closeness (on the URCS) was not significantly correlated with any other measure (all  $ps > .11$ ), and social awareness (TASIT Total score) was also not significantly correlated with any other measure in either group (all  $ps < .06$ ).

On the mental health measures, there was a significant positive correlation between anxiety and depression (GAD-7 Total and PHQ-9 Total) in both groups,  $r(19) = .56$ ,  $p = .01$  for autistic women and  $r(19) = .72$ ,  $p = .001$  for neurotypical women. In autistic women, depression was not significantly correlated with any further mental health measures. In neurotypical women, depression was further significantly correlated with LSAS Social Anxiety Total score,  $r(19) = .70$ ,  $p = .001$ , and OCD Total score,  $r(19) = .69$ ,  $p = .001$ . In autistic women, LSAS Social Anxiety Total score was significantly correlated with CAGE Total score,  $r(19) = -.55$ ,  $p = .01$ , such that greater social anxiety was linked to less problematic drinking. In neurotypical women, there were no further significant correlations between LSAS Social Anxiety Total score and any other measure (all  $ps < .07$ ). There were no further significant correlations at the .01 level amongst either autistic or neurotypical women.



Table 4.6

*Correlation matrices showing associations between Relationship Closeness (as measured by the URCS) and social awareness (TASIT Total score), and psychosocial outcomes (anxiety: GAD-7; depression: PHQ-9; social anxiety: LSAS; OCD: Z-FOCS; disordered eating: SCOFF; problematic drinking: CAGE; and life satisfaction: SWLS), for autistic and neurotypical women.*

	Relationship Closeness <i>r</i> ( <i>p</i> )	Social Awareness <i>r</i> ( <i>p</i> )	Anxiety <i>r</i> ( <i>p</i> )	Depression <i>r</i> ( <i>p</i> )	Social Anxiety <i>r</i> ( <i>p</i> )	OCD <i>r</i> ( <i>p</i> )	Disordered Eating <i>r</i> ( <i>p</i> )	Problematic Drinking <i>r</i> ( <i>p</i> )	Life Satisfaction <i>r</i> ( <i>p</i> )
Relationship Closeness	-	.21 (.38)	-.45 (.05)	-.36 (.13)	-.17 (.49)	-.06 (.80)	-.04 (.87)	-.08 (.76)	-.38 (.11)
Social Awareness	.07 (.76)	-	-.44 (.06)	-.27 (.26)	.01 (.99)	-.31 (.20)	-.08 (.74)	-.08 (.76)	-.17 (.48)
Anxiety	-.15 (.53)	-.01 (.99)	-	.56** (.01)	.23 (.35)	-.12 (.61)	-.15 (.55)	.24 (.33)	.10 (.67)
Depression	-.15 (.55)	-.15 (.54)	.76** (.001)	-	.16 (.51)	-.29 (.23)	-.15 (.53)	.21 (.40)	.03 (.92)
Social Anxiety	-.37 (.12)	-.35 (.15)	.46* (.05)	.71** (.001)	-	.24 (.32)	.52* (.02)	-.55** (.01)	.21 (.38)
OCD	.27 (.26)	-.25 (.30)	.38 (.11)	.69** (.001)	.43 (.07)	-	.34 (.15)	-.33 (.16)	.48* (.04)
Disordered Eating	.38 (.11)	-.04 (.87)	.15 (.55)	.26 (.27)	.13 (.61)	.56* (.01)	-	-.19 (.43)	.20 (.42)
Problematic Drinking	.10 (.68)	-.15 (.55)	-.30 (.22)	.43 (.07)	.27 (.27)	.48* (.04)	.51* (.03)	-	-.02 (.95)
Life Satisfaction	.25 (.30)	-.01 (.96)	.05 (.86)	-.07 (.79)	-.28 (.25)	-.06 (.82)	.41 (.08)	.11 (.65)	-

*Note:* \* denotes significance at the .05 level, \*\* at the .01 level.

### 4.5.3 Regression.

A linear regression was conducted to determine the extent to which social awareness, as measured by TASIT Total Score, and anxiety, as measured by GAD-7 Total Score, predicted Relationship Closeness, as indexed by the URCS. Since there were significant differences between the groups on the two predictor variables, interaction terms were generated and included in the model alongside the original total scores.

As diagnostic status (group: autistic, neurotypical) had a significant impact on relationship closeness, this was entered into the first step of the regression model, along with age and intellectual ability (raw scores on the WASI-2). The additional contribution of the two predictor variables was then tested by entering them stepwise into the regression equation, as well as the interaction terms for each variable.

When age, intellectual ability, and group were entered simultaneously as predictors of relationship closeness, these variables accounted for 15.5% of the variance,  $F(3, 37)=2.08$ ,  $p=.12$ . TASIT Total and GAD-7 Total scores were then added stepwise into the model, along with their respective interaction terms. This model accounted for 31.7% of the variance,  $F(3, 37)=3.72$ ,  $p=.01$ . The interaction between GAD-7 and group was the only significant factor at this stage,  $t(36)=2.73$ ,  $p=.01$ , explaining an additional 16.2% of the variance from Model 1. The negative beta value (see Table 4.7) suggests that having both autism and high anxiety negatively impacts on relationship closeness, over and above the effect of either trait individually. This relationship is visualised below in Figure 4.1, i.e. that anxiety was linked to less relationship closeness more strongly for autistic than neurotypical women, as shown by a more steeply angled line of best fit. No other factor entered into the final model were significant (all  $ps<.28$ ).

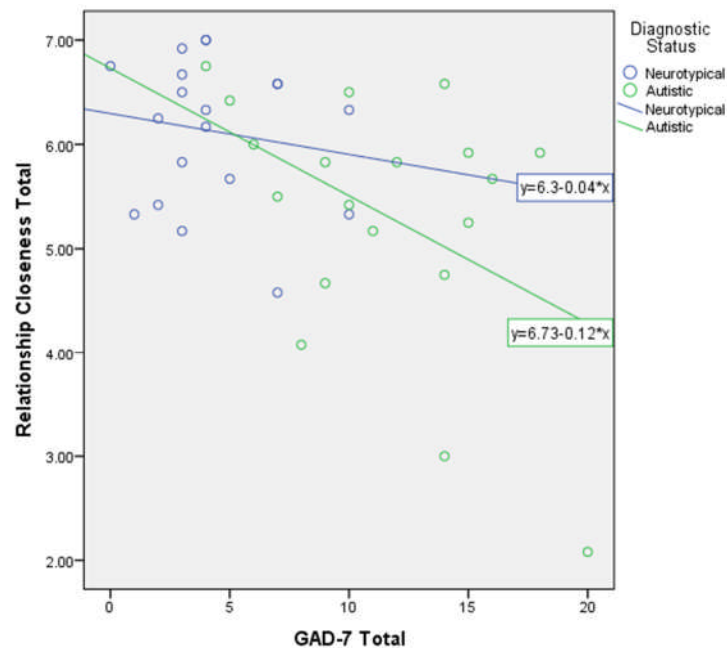
Table 4.7

Summary of linear regression analyses predicting relationship closeness.

Variable	B	SE B	Beta	R <sup>2</sup> (p)
Model 1				0.155
Age	0.01	0.03	0.07	
Group	-0.81	0.33	-0.39	
Raw IQ	-0.01	0.02	-0.08	
Model 2				0.31
Age	0.02	0.03	0.1	
Group	0.4	0.54	0.19	
Raw IQ	-0.02	0.02	-0.16	
Group x GAD-7	-0.07	0.02	-0.71	

Note: \* denotes significance at the .05 level, \*\* denotes significance at the .01 level

Figure 4.1. Graph showing the interaction between group (autistic, neurotypical) and anxiety (GAD-7 score), and the impact on relationship closeness.



#### **4.5.4 Semi-structured Interviews.**

All women reported having friendships and relationships, and there was broad agreement between autistic and neurotypical women in terms of the themes identified from the interviews. Within these relationship categories, I identified themes around how women approached, defined and handled these relationships (themes are italicised), along with several sub-themes which were identified in autistic women which were not present in the neurotypical women. There was only one theme specific to autistic women: *the challenges of relationships*. Note that, hereafter ‘AW’ will be used to signify quotes from an autistic woman, and ‘NW’ will be used to signify quotes from a neurotypical woman. Categories, themes and sub-themes are displayed in Figure 4.1.

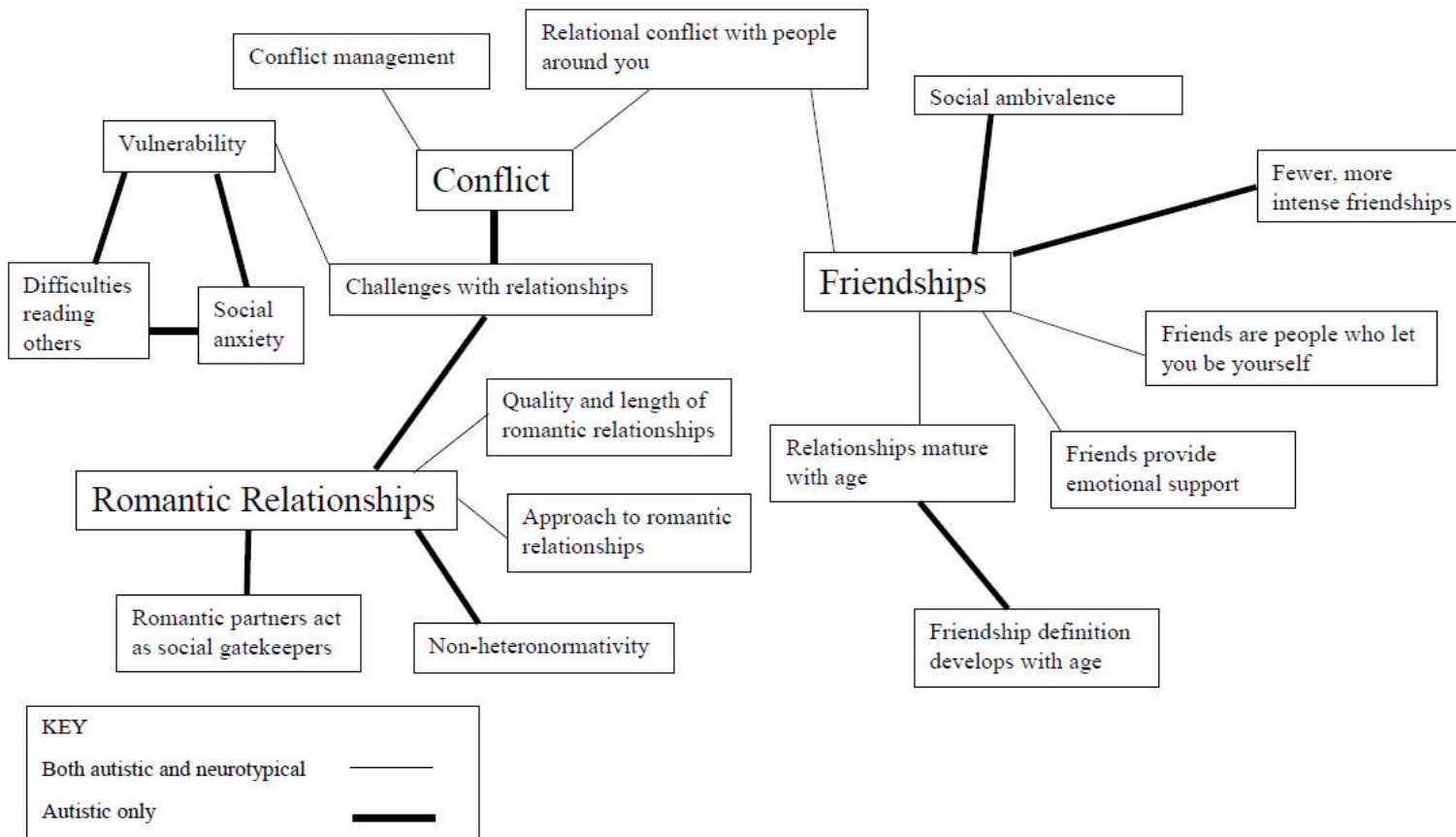


Figure 4.2. Diagram showing the themes identified from the interviews with autistic and neurotypical women. The topics asked about were Friendships, Romantic Relationships and Conflict. Boxes denote themes arising from those categories. Thin lines denote themes raised by both autistic and neurotypical women, bold lines denote themes raised only by autistic women.

#### **4.5.3.1 Friendships.**

Under the wider category of ‘friendship’, both groups of women reported that ‘*friends provide emotional support*’: “I can tell them anything and they listen” (AW); “we care about each other and want the best for each other” (NW). This emotional support allowed women to manage the challenges of their day-to-day lives, as it emphasised that their friends are people who are there for them, who will listen to them, and who will help them to find solutions to their problems. This process of listening and sharing and therefore “showing that they care” (NW), was reported to be illustrative of a friendship that was genuine. Reciprocity was also key, with neurotypical women particularly emphasising this: “I guess it a nutshell it’s being there [for each other]”. The fact that the relationship, care, and honesty went both ways was important in defining relationships as closer or better than general acquaintances: “because the level of honesty and trust is completely reciprocal” (NW). Some autistic women described having friends where the support was more one-way, however, often with themselves being the beneficiary – “if I’m really depressed I’ll send him an email”, “she’ll take me into town because I struggle to go on my own” – but they still perceived these to be strong and stable friendships.

This perception of closeness and stability was particularly emphasised through women saying that “*true friends are people who let you be yourself*”. The feeling that your true friends would be understanding and non-judgemental was important to all participants, who said, “the friends I value the most are the ones that I feel truly myself and comfortable with” (NW) and “it’s mainly how much time I spend with them and how close I am with them, how much we’ve shared” (AW). This was particularly the case when they felt that their friends shared the same interests, such as “we do things like... go to sword fighting classes” (AW) or “we share similar interests, have similar outlooks, and similar methods of enjoying things” (NW). These shared

experiences appeared to bring women closer to their friends, and enabled them to trust those people more, reinforcing the emotional bond which was seen as the key feature of a friendship.

Despite these similarities, autistic women had *'fewer, more intense friendships'*. Both groups described having a few close friends who they trusted more than others: "I have a small group of friends... the other people are people I work with that I have not crossed the boundary of colleague to friend" (AW); "there are ones I see as part of the group, and then people who I tell everything" (NW). Beyond this, however, neurotypical women said that they also had a large, wider group of friends and acquaintances with whom they socialised, but perhaps "wouldn't call at 2am" (NW). In contrast, autistic women did not have this wider group, and often would only have one or two close friends, often including their partner: "they're the only two I have" (AW). These friendships could be very intense, and take up a great deal of time and energy on the part of both involved: "I'll try and have a lot of contact, like texts, I'll message them a lot" (AW). This intensity had, for some participants, resulted in friends withdrawing from them, which the autistic women felt was because their friends could not cope with their desire for persistent and sustained interactions and proximity. For example, one woman described how, "if you're my friend I want to tell you what I've been doing and I want to talk to you all the time" (AW), and that this constant contact had led her friend to stop talking to her altogether.

Another theme identified solely in the interviews with autistic women was that of *social ambivalence*. While many autistic women said that their friends were "really important" and that they would be "lost without them", some women were decidedly ambivalent towards social relationships. For example, one said "I don't really want friends... they only want to know you for a while and then they always go away for no reason", and another said "I'm more suspicious than most people" and so she did not make friends easily. Several women said that as a result of previous events where they felt that they had been taken advantage of they were now "more

wary” and less open to friendships, although this tended not to affect their romantic relationships. This ambivalent attitude towards social relationships also appeared to lead to some women judging the people around them as not being ‘worth’ forming friendships with, such as people with whom they worked: “they aren’t good people, they say things”. This in itself appeared to contribute to their difficulties in getting on with people around them and created a negative spiral. Nevertheless, most autistic women said that they had positive relationships at work and with friends and family, and that these people would support them when they needed it and who were a valued presence in their lives: “I still know people from high school now, that’s how important it can be”.

While all participants had friends, they also all described getting into a wide range of conflicts with friends and with people they knew more casually. These were all instances of *relational conflict with people around you*, such as “I certainly know about the fake-friends thing where we’re going to be nice to each other to make things easier for other people” (AW) and “I heard what she had been saying behind my back” (NW). This type of conflict was present in all areas of women’s lives, from the office – “there’s someone I don’t get on with at work, who tries to undermine me a lot” (NW) – to the school gate – “sometimes they can come on quite strongly and then, once the child has what they need, the parent drops you like a hot cake” (AW). All women were frequently facing difficult social situations, which required an understanding of complex motivations, and careful management, regardless of their diagnostic status. Autistic women found this more difficult to manage as a result of their diagnostic status however, as key features of autism include anticipating or making sense of others’ motivations.

Some autistic women felt that even when they disclosed their diagnosis and needs, people continued to deliberately use these subtle forms of social aggression against them, such as “she discriminated against me. She said ‘you’re not allowed to work with vulnerable people!’ in front of a client” (AW). This sort of relational aggression was perceived as



indicating that a friendship had gone sour in some way, often being used as a placeholder for other issues in the friendship, such as “she stopped talking to me for 9 months... I can only think that I was playing pool with someone she wasn’t a fan of” (NW).

These incidents and the way women approached *conflict management* appeared to have a significant impact on the relationships of adult women, as several participants talked about ending a friendship or deliberately no longer treating someone as a close friend: “I will admit to keeping her more at arms’ length now” (NW). Autistic women were also willing to end a friendship which they felt had become negative or which was too difficult for them to maintain: “I finally feel free to say I don’t need your brand of neurotypical drama” (AW). Most women first tried extensively to ‘fix’ their friendships by talking about the issue at hand, such as the participants who said “we both acknowledge it is difficult and then work to resolve [it]” (AW) and “if anything major happened we’d probably leave each other alone for a while and then talk about it to sort it out” (NW). If this did not work however, they were relatively comfortable with accepting the end of a friendship and focussing on their existing, more stable friendships. Autistic women were less likely to make repeated attempts to ‘fix’ a friendship through talking over the problem, and were more matter-of-fact about walking away from a conflict without resolving it to their satisfaction.

The idea that *relationships mature with age* was also common to both groups. The willingness to end connections that were no longer a positive presence in their lives seems to have led to a significant increase in *relationship satisfaction* among adult women from their time as adolescents. Both neurotypical and autistic women talked about the fact that they had experienced peer difficulties in high school, describing experiences such as “a lot of bitching and gossiping and trying to be better than each other” (NW) and “I found myself in difficult positions at times because I would be asked who I ‘fancied’ and I didn’t fancy anyone” (AW). These high school experiences had left them feeling that they were “actually bullied a lot by

my ‘friends’ as a teenager” (NW). This level of relational conflict had meant that several women had not enjoyed high school and had actively stopped talking to people from that time in their lives – “I don’t want to be around those lot anymore!” (NW). Ending those relationships had made them feel “like [they] had tried the mature approach” (NW), and they had actively sought out different sorts of friendships in adulthood – “you have a more even sort of ground I think” (AW). This increased confidence and self-assurance in managing relationships, including putting their own feelings first, was seen by all participants as a by-product of growing up and leaving the intense social world of secondary school: “I think it’s a maturity thing, and being more sure of yourself” (NW). Participants described how they were now able to say “‘that’s your neurotypical drama’ and I don’t need that in my life” (AW) or to be “more picky about who I spend time with and who I trust” (NW) and instead focus on relationships which they felt were more stable, caring, and reciprocal.

For autistic women, their *‘friendship definition developed with age’* since they were teenagers, reflecting greater self-awareness and understanding of other people – “now I actually have an understanding of what I’d like out of a friendship and how to comport myself in a friendship, whereas then it was just like, you’re paying attention to me, excellent”; “as a teenager most of my friends were people that were in that class who I could tolerate”. These self-reported changes went along with greater friendship satisfaction and stability, as autistic women felt that they understood more of “what other people want in a friend” and could negotiate those expectations better.

#### ***4.5.3.2 Romantic Relationships.***

Another major change during emerging adulthood was the centrality of *romantic relationships* in participants’ lives. Many women described their romantic partner as being the most important relationship they had – “the way I love my partner is very different and probably more enduring” (NW); “I want to be with my husband” (AW). Those who did not currently

have partners said they would like one in the future, both neurotypical and autistic – “I’d like to get married and have children” (NW); “it would be nice one day to find someone” (AW). While romantic partners were important to all participants, they were reported to be particularly so for autistic women. For autistic women, their partners were their main social relationship, sometimes to the point of excluding other friends: “I wouldn’t really say that I have friends apart from my partner” (AW). They described their romantic relationships as being incredibly intense – “my husband essentially became my special interest” (AW) – and this could be difficult for their partners to manage, or for the women to understand how their behaviour was affecting their partner: “I’ve moved here, what d’you mean you need space?” (AW). Yet, having children also brought couples together, giving a joint focus which helped to reduce the intense focus of a woman on her partner: “my world grew legs and became other people” (AW).

It was also clear that, for many autistic women, *romantic partners act as social gatekeepers*, introducing them to their friends and providing “the ready meal of friendship” (AW), as women could slot themselves into existing social groups rather than trying to make their own friends: “my main source of companionship has been through romantic relationships” (AW). Romantic relationships appeared to be so highly valued by autistic women, as they provided a ‘short-cut’ into a social life they found difficult to build for themselves. This social merging was not mentioned by neurotypical women, who instead described valuing romantic relationships for reasons such as “I feel safe, supported, happy and loved” (NW) or “my partner is smart so I find it intellectually stimulating to talk to him” (NW). This is perhaps to be expected as these women had fewer issues in making their own friendships, and they still spoke about the fact that they shared friends with their partner – “we’ll go out in a group with friends” (NW) – it just was not a key factor in wanting to be with someone.

The *quality and length of the romantic relationships* of autistic and neurotypical women were, in many ways, very similar. Several women in both groups were married or in long-term

relationships where they lived with their partner, and were happy and settled in those relationships – “I have a partner who I’ve been with for 6 years” (AW); “we’ve been together 8 years as of Friday” (NW). Equally, there were women in both groups who were single, and were either dating, or choosing not to – “I’m trying to keep myself for the right person and the right time” (AW); “there’s the usual idiots you meet on dating sites” (NW). While there were some women who were unhappy in their relationships – “I feel I have been conned into marriage” (NW) – this was not necessarily linked to diagnostic status, but instead to features of those individual relationships.

Where some differences did arise was in the *approach to romantic relationships* of autistic women, such as one participant continuing to live with an ex-partner who had become her carer – “my housemate, N, we dated for a few years and then moved in together but then I ended it...he does a lot for me” – despite her having since formed a new romantic relationship. Autistic women were likely to report that they had only had one or two serious relationships in their lifetime, and that they were more likely to stay in a bad relationship because that was easier than finding a new one – “there have been times when I’ve definitely kept an unsuitable person around just because I was lonely” (AW) –, whereas neurotypical women talked about the fact that “I put up with a lot less now and am more aware of what I want and what makes me happy” (NW). Autistic women were also more likely to take a matter-of-fact view of their romantic relationships – “if we have a fight, we can make it up now, but you’ve told me you want kids and I definitely never want them, it doesn’t make any sense to make up now” – and this extended to sexual encounters, which some participants described “for scratching that itch” rather than necessarily associating the act with romantic feelings. Again, though, there were some neurotypical women who felt the same, saying that they “had plenty of fun with whoever I wanted” (NW) before finding a long-term partner.

Autistic women also reported higher levels of *non-heteronormativity* in their gender orientation and sexualities. While this had some impact on their relationships growing up (“I was in a rural area, so I didn’t date as a teenager”) by adulthood, it had in some ways become irrelevant. Lesbian, gay, bisexual, transgender, and queer (LGBTQ) autistic women described the same experiences and challenges as heterosexual autistic women in the main, such as their partner helping them to make friends (“our friends are all through her”) or struggling to get their partner to understand their needs (“we used to argue because we want different levels of intimacy”). The one participant who had notably different experiences was a woman whose boyfriend was polyamorous, with which she was uncomfortable: “he has another girlfriend he’s known for like 7 years, which I get jealous of”.

#### ***4.5.3.3 Challenges of relationships.***

The final theme common to all women was that of *vulnerability*. Most autistic women, and a significant minority of neurotypical women, reported that they had at some point been taken advantage of, often in the form of sexual assault. Neurotypical women reported instances such as domestic abuse – “the guy I was engaged to was abusive, which is why I ended up ending it” – or being assaulted – “I was forced to have non-consensual sex”. This had often happened some years in the past, usually in their early 20’s or while they were at university. This was also the case for autistic women – “it was an abusive relationship [in late high school]” – who similarly faced domestic abuse, sexual assault, and rape – “the guy who raped me... I just didn’t really know how to avoid that situation once it had started”.

Autistic women had an extreme level of vulnerability, however, in comparison to neurotypical participants. Of the 19 autistic participants, 15 (79%) spoke about some form of domestic abuse, rape, or sexual assault– with some participants having had multiple traumatic experiences. Amongst the neurotypical sample, 5 of the 19 women (26%) discussed similar experiences, although usually not multiple instances. Autistic women described how they

generally assumed “the best of people” or that “people would follow the rules”. Some participants therefore repeatedly ended up in situations where they were taken advantage of, because “there’s that whole ulterior motive thing that I end up missing”. For some participants, this involved being groomed, or even abducted: “I was travelling in Turkey and got chatting to this guy, and he said he’d show me some beautiful carvings so I got in his car and then he drove off really fast. I had to run away when he stopped at a traffic light”. They also struggled to generalise from one incident to the next situation, with one participant reporting, “this has happened to me more than once, and I’m surprised every time”. Autistic women reported finding it difficult to pick up not only on the cues being given by the men who sought to hurt them, but also to recognise the cues of neurotypical women around them. One participant said, of her neurotypical friends, that “they seem to have this secret signal where they all decide he’s bad news and leave without saying anything, then they have to come back and get me because I’ve missed it”. The fact that these women had female friends who would try to help and protect them was a positive feature in these discussions, but generally, autistic women felt that they were extremely vulnerable due to their difficulties with social understanding.

Indeed, autistic women consistently highlighted their *difficulties reading others*: “the whole time you’re trying to figure out what is going on” and “I never know what they think about me”. Autistic women were often then confused by outcomes they had not predicted and could not understand: “I’ve been schooled. I still don’t think I’ve absorbed it, but I’ve been schooled”. This was especially true when asked about times of relational conflict or difficulty with peers. One example included “a really atrocious situation where somebody pretended to be a friend who was actually gathering intel... [she] took months of my Facebook to the Head teacher and said I’d been threatening her, and I was banned from the school”. The subtle social aggressions usually employed by and against women were a mystery to some participants: “what is all this psychological mumbo jumbo?” and “why would jealousy make you whisper

about me?” This meant that they could struggle to maintain relationships even when they wanted to. The tendency to literal interpretation meant that women “said the wrong thing” because they did not understand what someone wanted them to do. For example, one participant recounted an incident where “I said, ‘Don’t be silly, your fat makes you look fat, not the dress’”, which led to that person not asking them to spend time together again. This participant had not disclosed her diagnosis to that particular set of friends, although most autistic women had disclosed to their closest friends, and said that this meant that “they’ll let me get on with being autistic sometimes, they know I’m not being rude”. This suggests that while autistic women did have difficulties with reading and responding to people in their wider lives, those who were most important to them made allowances for their needs within their relationships.

These difficulties understanding others, and the knowledge that they are often “getting it wrong”, led to many autistic women experiencing high levels of *social anxiety*. One participant described how socialising left her with “constant heart thumping anxiety”, which often led her (and other women) to limit how much time they spent with friends, or even just outside the house, as it was “hard work”. For example, participants described feeling anxious about how they would respond to the sensory elements of being outside the home and the impact this had on their friends – “she can find it stressful... if I’m not coping”, and also worrying about “what they think of me” and “what I have to say and do” on top of this. Several women also said that they “find it difficult to know if they [friends] feel the same way I do about them”, and this could also lead them to withdraw from a new friendship or refuse to make new ones: “I just find it so overwhelming that I don’t even try”. Some women reacted to this anxiety by “only seeing one or two people at a time”, which allowed them to manage the situation. Others became withdrawn or avoided large gatherings, which could itself damage

their relationships: “we aren’t so close because I’ve missed big events like graduations and weddings”.

## **4.6 Discussion**

This study used mixed methods to examine differences in autistic and neurotypical women’s social experiences and psychosocial outcomes. As expected, the findings from the semi-structured interviews showed that autistic and neurotypical women face similar social situations and challenges, but that autistic women are often much more vulnerable to exploitation due to difficulties with interpreting others’ intentions towards them. Autistic women also found it more difficult to manage social conflicts and challenges, although they reported being more confident in doing so than they were in adolescence. This pattern of increasing social confidence and satisfaction was a common narrative for all the women in the study, but was particularly important for autistic women who felt that, despite ongoing challenges, they have learned to do relationships “on their terms”. This increased relationship satisfaction with age was evident despite autistic women in this study having poorer psychosocial outcomes than the neurotypical women on a range of measures, including more difficulties in their social relationships and higher levels of mental health issues. There were no significant differences, however, in some such outcomes, including issues with either eating disorders or alcoholism, although very few individuals in either group scored above cut-off on these measures.

### **4.6.1 The nature of autistic friendships and relationships.**

Difficulties with developing and maintaining relationships are central to the diagnostic criteria for autism (APA, 2013), but remarkably few studies have examined the friendships and relationships of autistic adults. Here, for the first time with autistic people, I used the URCS to examine differences in regard to relationship quality. As expected, autistic women rated themselves as less close to their nominated individual than neurotypical women on the URCS



questionnaire. At first glance, this finding seems to be in contrast to the interview data, where many autistic women said that their romantic partner was just as important in their lives as romantic partners were to neurotypical women. The total closeness scores on the URCS, despite the significant difference on the *t*-tests, emphasise that these relationships were still close, just less close than those of neurotypical women, as further testing showed no significant interaction. That there was no interaction between group and person rated in terms of relationship closeness or reaching relationship closeness norms suggests that while women who rated friends rated those relationships as less close, autistic and neurotypical women felt that their respective relationships were similarly close, as in the interview data. This makes sense in light of some of the questions on the measure, such as ‘I consider my friend/partner when making important life decisions’, which is naturally more applicable to a romantic partner who may share a home with the participant, and which is less likely to be highly endorsed when considering a friend. It might be expected that more autistic women would nominate friends, as the little existing research on life outcomes for autistic adults suggests that they are less likely to be in long-term romantic relationships than neurotypical people of a similar age (Howlin, 2000; Orsmond, Krauss, & Seltzer, 2004), although this was not the case in this sample.

That friendships were generally rated as less close is not surprising, as a best friend, no matter how close, is likely to always be a lesser factor in say, deciding to go for a new job or move house, than a romantic partner will be, particularly if you live with that partner. This appeared to be a pattern borne out by the data, as women who nominated a friend rather than a romantic partner rated the relationship as less close, regardless of diagnostic status, although many were still above the population norms of 5.02 for friendships and 6.00 for romantic relationships. These ratings show that their friendships were still emotionally close and important to autistic women, which echoes their interview responses. Autistic women were

highly satisfied with these relationships, similar to neurotypical women, which they emphasised in their interviews, and they felt that having them improved their quality of life. This finding is supported by other research into the relationship examining the association between friendships and well-being in autistic adults, as lower levels of loneliness were linked to better well-being (Mazurek, 2013).

Autistic women discussed experiencing similar problems in their social relationships to neurotypical women, such as relational aggression and relationship breakdown, but autistic women described having greater difficulty managing these situations. As has been found in some previous narrative research (Kanfiszer, Davies, & Collins, 2017), difficulties with peer relationships, and especially with managing conflict incidents within those relationships, was linked to mental health and wider social issues by autistic women. One clear potential consequence of finding it difficult to manage challenging or confrontational situations is found in the distressingly high rates of sexual assault amongst the autistic women in the study. While neurotypical women reported sexual assault and domestic violence at similar rates (26.3%) to the most recent official statistics on the topic, which recorded 20.2% of females as reporting that they had been assaulted (Office for National Statistics, 2016) – the alarming vulnerability of autistic women is an aspect of these and others’ (Bargiela et al., 2016; Kanfiszer et al., 2017) interview data that needs addressing directly – and urgently.

Autistic women sometimes described having suffered multiple assaults, saying that they “just couldn’t see it coming” even if it was a repeat of a previous situation. Difficulties with generalising experiences are a recognised feature of autism, and are potentially leaving autistic women incredibly vulnerable. There is evidence that autistic people rely less on ‘priors’, or prior experiences, to inform their responses to current situations (Pellicano & Burr, 2012). This may be playing a role in the repeated difficulties autistic women experience, as although they are processing the current situation without the bias of pre-existing schema, this

may equally mean that they are not drawing on previous experiences as an early warning system, or as a model for when something negative has happened before. It is therefore vital to teach autistic girls and young women explicitly about the potentially harmful situations that might arise, to talk to them about what are normal and safe behaviours in a relationship, and to discuss how to manage and extricate oneself from a situation that does not seem safe, as has been suggested by autistic women writers (see Steward, 2013). This goes beyond the current scope of school-based sex education into the realm of relationships and personal safety, but the women interviewed here often discussed the fact that they “had to work it out myself”, and that they felt this was part of how they had been victimised – no one had ever told them that these behaviours by their partner were not how relationships usually went. For women who may have few friends, explicit teaching may be crucial in place of the discussions that neurotypical women often have, as autistic women may not have anyone with whom to ‘check-in’ about a relationship (Steward, 2013).

Both difficulties managing peer conflict and their reporting of elevated levels of personal and sexual vulnerability was, in their own words, explained by autistic women’s difficulties in interpreting the intentions of other people, as in previous work (Beteta, 2009). This feeling of “not knowing what [someone] thinks” is supported by the analyses of the TASIT social awareness scores, where autistic women were significantly less proficient at identifying what a target character was doing, saying, and feeling than neurotypical women. This finding is in line with much existing work, where the idea that autistic individuals have difficulty with identifying the thoughts of others is well-established. Lower scores on the TASIT are possible evidence of ToM difficulties (Baron-Cohen, 2000; Baron-Cohen, Leslie, & Frith, 1985; Wellman, Cross, & Watson, 2001), which have been shown to persist into adulthood in some studies (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001; Happé 1994; Kleinman, Marciano, & Ault, 2001; Spek, Scholte, & Van Berckelaer-Onnes, 2010).

Autistic women also described themselves as having high levels of anxiety in social situations, which they also felt impacted on their ability to make and maintain successful relationships. The regression analysis carried out in this study supports this qualitative account, as having both autism and high anxiety accounted for a significant reduction in relationship closeness on the URCS. While the impact of anxiety on relationships has usually been studied through the lens of attachment style, there is evidence to suggest that high social anxiety makes people less likely to express their emotions to their partner, and that this can have a negative effect on relationship closeness (Kashdan, Volkman, Breen, & Han, 2007). Those with higher levels of anxiety are also likely to perceive more conflict in their romantic relationships, and these conflicts are more likely to escalate rather than be easily resolved, both of which result in lower levels of relationship closeness and more relationship distress (Campbell, Simpson, Boldry, & Kashy, 2005). Autistic women did not discuss arguing with their partners more than the neurotypical women in this study, but it may be that the arguments they did have had a more significant effect on them and were harder to resolve, in line with the existing literature on the topic.

While recent work on autistic women's social experiences echoes the themes highlighted in this study, there are also some discrepancies. Kanfischer et al. (2017) carried out a narrative study examining seven women's stories about their lives. The two main themes they identified were gender identity and social relationships. While the participants in that study felt 'different' to their peers growing up, in a similar way to the descriptions women gave in this study, they also described feeling discomfort with their female gender identity. This theme was not apparent in the interviews with autistic women in my study, and indeed equal numbers of autistic and neurotypical women were mothers, some autistic women talked about stereotypically female special interests, and even those who were agender or transgender did not express the discomfort with their physiology, which was present in Kanfischer et al.'s study.

Furthermore, although the overarching concept of difficulty with social relationships and vulnerability to being exploited were the same in both Kanfiszler et al. and this study, there were also significant differences on the topic of social relationships. For example, Kanfiszler et al.'s participants talked about how "when I try, the conversation goes dead" and "people didn't want to know me" (p. 666). These sentiments were not at all expressed by the current participants. Autistic women reported struggling to make and maintain friendships and relationships, but this was not because other people rejected them outright or from the outset. It was instead a function of how they behaved and understood other people *within* a friendship, rather than because the people around them refused to engage with them.

Some of the differences found between the current study and the Kanfiszler, Davies, and Collins paper are likely to be due to the difference in participant characteristics. First, Kanfiszler, Davies and Collins only had 7 women in their study, with an age range of 20 to 59. This means that a very few women were discussing very different life experiences, as although all had received diagnosis in adulthood, the timing was not disclosed. At least one woman must have received her diagnosis at 19 to have been included in the study, and she is therefore likely to have had a very different set of life experiences from someone who has received an adult diagnosis at the age of 56. It is also worth noting that three of the women in their study were considered to have an intellectual disability and were at the time being held under the Mental Health Act of 1983. These women are therefore very different to the participants in the current study, who were all of average or above-average cognitive ability, and who all lived independently, bar one autistic woman who was an in-patient for a separate condition. It is therefore possible that the life experiences, and particularly social experiences, of those with and without intellectual disability are quite different, and it may be that these differences are contributing to some of the discrepant findings between this study and Kanfiszler, Davies and Collins' work.

#### **4.6.2 The nature of autistic women's psychosocial outcomes.**

In contrast to much previous work on adult outcomes in autism (e.g., Henninger & Lounds-Taylor, 2013; Howlin, 2000; Howlin, Goode, Hutton, & Rutter, 2004; Howlin, 2013), the autistic women in this study were mostly in employment or education, and many were dating, married, and mothers. Many cohort studies have instead found that autistic adults remain dependent on parental support, do not live independently (Billstedt, Gillberg, & Gillberg, 2011; Howlin, Goode, Hutton, & Rutter, 2004; Howlin, 2013), and have high levels of unemployment and isolation (Billstedt, Gillberg, & Gillberg, 2005; Howlin, 2000; Howlin, 2013). It is worth noting, however, that most of these studies are longitudinal research working with individuals who were diagnosed in childhood, which would have been in the 1960's, 1970's, and 1980's, when the diagnostic criteria were dramatically different and only captured those individuals who were most severely affected by their autism, for example having co-occurring intellectual disability or having limited spoken communication. This difference in participant characteristics may explain at least a portion of the differences between the psychosocial outcomes in this sample and previous work.

Autistic adults have also been found to have higher levels of ill health (Croen et al., 2015) and psychiatric conditions (Hofvander et al., 2009) than neurotypical populations. While some mental health conditions were more prevalent in the autistic women in this study, rates of medication, and by implication, health problems, were not significantly different. This suggests that some traditional expectations of 'good outcomes' for adults on the autism spectrum may potentially apply differently to men and women, as the above studies using these outcomes have had majority-male samples. While this study did not examine gender differences, it is possible that those women who gain an adult diagnosis have had to navigate school, society, employment and relationships without the support that is offered to earlier-diagnosed boys, and so they achieve more of these outcome measures simply as part of

‘surviving’ in the neurotypical world. It is also the case that many of the adult autistic women in my study have partners, who also provide them with support and security. It is possible that a sample of males diagnosed in adulthood would produce similar findings to those of autistic women who received late diagnoses, and this would be a topic for future research, as these men may have faced similar challenges and developed similar coping strategies.

Autistic women reported being significantly more anxious than their neurotypical peers, both in their questionnaires and in their interviews. They had significantly higher anxiety – both general and social anxiety – both of which are in line with previous work on anxiety in autism (Gillott & Standen, 2007; Kim et al., 2000; White, Oswald, Ollendick, & Scahill, 2009). The effect of this anxiety on their social lives became clear through the interview data, as participants described anxiety as shaping how they approached – or did not approach – friendships and relationships. As well as some participants saying that their anxiety held them back from trying to begin friendships or romantic relationships, others said that it could leave them worrying about what the other person really thought of them or whether it was a genuine relationship. This can, in itself, lead to less positive relationship experiences, as previous research has shown that the friendships of anxious young people are less secure, close, and accepting, and are more focussed on the provision of practical help than reciprocal emotional support (La Greca & Lopez, 1998).

Alongside anxiety, autistic women reported higher levels of depressive symptoms and depression than neurotypical women, and several autistic participants had formal diagnoses of both anxiety disorder and depression. The relationships of depressed young people, similar to those of anxious individuals, have previously been found to be less close and more aggressive than those of people without depression (Brendgen, Vitaro, Turgeon, & Poulin, 2002). Combining this effect with that of autism itself may in effect provide a “double jeopardy” effect, as may anxiety, with individuals who have some inherent difficulties with social

interaction having the additional challenge of their mental health impacting on their ability to make and maintain friendships. This is particularly relevant for depressed women, as depressed adolescent girls have been found to be rated as less desirable friends by their peers (Connolly, Geller, Marton & Kutcher, 1992), an effect which is likely to extend into adulthood. While no participants explicitly discussed the impact of depression on their friendships as they did anxiety, several autistic women said that they tended to have friends who “also have challenges”, including mental health challenges, a tendency which is supported in research which has found that depressed individuals feel worse after talking to non-depressed people than they do after talking with other depressed people (Rosenblatt & Greenberg, 1991). This may indicate that they prefer to find people who understand them and their needs, which may contribute to the greater sense of social satisfaction adult autistic women have compared to their friendships during adolescence.

While this study did not seek to examine the cause of autistic women’s anxiety, understanding the causes of anxiety should be important for interventions as it could help to identify where to target such efforts. Critically, the data from this study suggests a connection between anxiety and difficulties with social interactions and relationships, which appeared to be further complicated by the anxiety caused by being aware of having difficulties with these elements of one’s everyday life. The causal direction of this connection cannot be determined here – whether anxiety is caused by social difficulties and awareness of them, or whether having social difficulties and being aware of these difficulties causes anxiety, or both. Even amongst neurotypical populations, and specifically neurotypical women, the direction of this association between anxiety and social difficulties has not been specified, although there is ample evidence for its existence in both adolescents (Storch & Masia-Warner, 2004) and adults (Kashdan & Roberts, 2004; Voncken, Alden, & Bogels, 2006). Some research has investigated whether there is a relationship between anxiety and social difficulties, especially victimisation,



in autistic children and young people. These studies have found that there is an association, with more anxious adolescents having more peer problems (Bellini, 2004; White & Robertson-Nay, 2009), but did not examine the causal factors behind these relationships. Investigating these causal factors would be an interesting topic for future research, as it would help to identify areas for intervention in order to most improve the lives of adolescents who are both anxious and struggling with their peer relationships.

While autistic women had lower scores on overall satisfaction with their current life circumstances on the SWLS, this was not borne out in their discussions of their relationship satisfaction. That their quantitative and qualitative results disagree is perhaps not as surprising as it might initially appear, as women may have been evaluating different constructs during the two measures. The SWLS does not ask specifically about relationships, only about whether the individual would change their life circumstances in general, and therefore autistic women who are satisfied with their current relationships may still be less satisfied than their neurotypical peers in more general terms. Considering that autistic women were more likely to be unemployed, and to have mental health issues, it is reasonable that there are aspects of their lives in general which leave them feeling less than totally satisfied, and this is what the SWLS was measuring.

Other mental health conditions screened for in this study had mixed findings. While OCD traits were higher in the autistic group, this is to be expected as some of the questions address a preference for orderliness and symmetry, which are key parts of the diagnostic criteria (APA, 2013). The absence of a significant difference between autistic and neurotypical women in terms of their alcohol use is reassuring, as some research has suggested that neurotypical people use alcohol to ameliorate anxiety, particularly in social situations (Kushner, Abrams, & Borchardt, 2000; Morris, Stewart, & Ham, 2005), and this effect may reasonably be assumed also to be present amongst autistic adults, especially in the face of

elevated anxiety. This was not the case, which suggests that although they are experiencing social anxiety, autistic women may be finding coping mechanisms that do not risk their physical health, which is a positive outcome.

Interestingly, and in contrast to some previous research, there was no significant difference in the prevalence of issues with food and weight loss between the two groups. Recent research has suggested that autism and anorexia, in particular, may be linked (Huke et al., 2013; Mandy et al., 2015; Oldershaw et al., 2011), possibly due to either an avoidance of the social pressures of eating situations or the eating disorder itself becoming a special interest. Yet, these studies have assessed autism traits in an eating disorder clinic population, a group who by definition represent the extreme form of the condition. It may be that by screening for eating disordered behaviours in a non-clinical population, it is in fact that the milder forms of issue are present at the same rate. This raises an interesting question about what might lead autistic women to be more likely to develop the extreme behaviours of anorexia, if it is indeed the case that they do so at a higher rate than neurotypical women, and whether distinct treatment and support options need to be developed to help this specific subset of sufferers.

#### **4.7 Limitations.**

There were some limitations to this study. First, apart from the LSAS, all the mental health measures used were short screening questionnaires, rather than being longer and more fine-grained – and potentially more reliable in an autistic population. Nevertheless, bar three exceptions (LSAS Social Anxiety for autistic women, the CAGE alcohol screen, and the Z-FOCS OCD screen for autistic women), these shorter screening questionnaires had good reliability and validity in these samples of women, suggesting that they were reliably indicating the presence and levels of different psychosocial outcomes, which is useful in a piece of research that is exploratory in nature. Second, the study is also limited by a relatively small sample size, as there is the possibility that small differences between the groups could not

therefore be detected in statistical analyses. Despite this, there were some clear findings and large effect sizes, particularly around the mental health outcomes for autistic women, which warrant further research. Third, this study focused on women only, meaning that comparisons could not be made to the outcomes seen in autistic and neurotypical men. This would have been valuable in that it would have allowed for the exploration of gender differences in psychosocial and relationship outcomes alongside differences based on diagnostic status.

#### **4.8 Conclusion.**

This study showed that autistic women have relationships that they describe in many ways as being similar to those of neurotypical women. Nevertheless, I identified key differences between the groups, with autistic women having fewer and more intense friendships and relationships, having more difficulties within their relationships, and being distressingly vulnerable within social relationships. All women, both autistic and neurotypical, described becoming more confident in and satisfied with their relationships as they matured, a pattern which was particularly significant for autistic women, and which they often linked to receiving their diagnosis. They described how this process validated the differences they had always felt compared to people around them, and helped them to understand their own needs and wants from friendships and relationships. While this did not necessarily remove their social challenges, it appeared to have allowed them to understand better their responses and to explain themselves to the people around them, thereby building stronger and more stable relationships.

This study clearly shows that while many autistic women experienced ongoing social difficulties like those they had faced in adolescence, they were much more confident in handling these difficulties and overall felt much more satisfied with their adult friendships and relationships than they had been earlier in life. Autistic women face social situations and expectations that are like those of neurotypical women, but that they respond to these in different ways. Examining how adult autistic women perceive and experience their friendships

and social relationships may help us to understand the nature of gender differences in autism in greater depth. Examining how these social experiences change between adolescence and adulthood is the focus of Chapter Five, along with the inclusion of parental perspectives on the changes they have seen in their daughters from childhood to adolescence. I decided to include parent perspectives following the discussions of some autistic women in this study of how they would have valued different input from their parents while growing up. I therefore wanted to investigate how parents of autistic girls who are currently going through adolescence talk about and respond to their daughter's friendships, and how they think about the future for autistic girls.

## **Chapter Five: The developmental story – comparing the perspectives of autistic girls, their parents, and autistic women**

Existing research on friendships and relationships in autistic people has tended to focus on either adolescents or adults. To date, there has been no work examining whether the social patterns of adolescence are also present during adulthood, or whether the nature of social relationships changes with age. This question is especially pertinent for autistic girls, who may face particular risks and vulnerabilities as they grow into women, in terms of their introduction to, and experiences with, sexuality and independent living – as the findings from Chapter Four attest. The data presented in my final empirical chapter therefore sought to compare directly the friendship experiences and relationship difficulties of autistic females during adolescence and adulthood. This comparison allowed me to interrogate the difficulties adult autistic women reported facing in early adulthood, and which they continue to navigate, relative to the experiences reported by autistic adolescent girls.

There is currently no published research which examines the development of social relationships from adolescence into adulthood amongst autistic people. While there is research on the nature of friendships in childhood and adolescence (Calder et al., 2013; Bauminger et al., 2003), and on the numbers of autistic adults who are in serious romantic relationships (Henninger & Lounds-Taylor, 2013; Howlin, 2013), no-one has investigated how autistic people move from one set of relationships to the other. Given the findings from Chapter Four, where adult autistic women talked about how the transition to adulthood had been a challenging time for them, including learning to navigate romantic relationships, I wanted to directly compare these experiences in adolescence and adulthood. There is some work on how neurotypical women develop their relationships into early adulthood, which emphasises the growing importance of romantic relationships (Barry et al., 2009), just as autistic women did

in Chapter Four. The direct comparisons of adolescent and adult views, alongside parental views on the change over time that they have seen in their daughters, will enable me to draw some conclusions about the development of social relationships in autistic females, although this would ideally be done through a longitudinal study.

A further aim of this study was to incorporate the views and concerns of the adolescent girls' parents about their daughters' relationships. Parents are often central in facilitating and supporting the friendships of autistic young people (Laugeson, Frankel, Mogil, & Dillon, 2009), and will therefore have their own views and opinions of the friends of their child. In the case of neurotypical adolescents, research has shown that parents and children may disagree on over whom a child should be friends with, especially in terms of their increasing the likelihood of their child developing risky behaviours such as smoking or drinking alcohol (Riefman, Barnes, Dintcheff, Farrell, & Uhteg, 1998; Wood, Read, Mitchell, & Brand, 2004). This has not, however, been examined within the context of autism. It is also very rare for direct comparisons to be made between parental and adolescent views on the same topics, despite the recognition that multiple informants can give a more nuanced and complex understanding of the subject under investigation (Wagner, Rau, & Lindemann, 2010).

In the current study, parents of adolescent autistic girls were contacted for an interview after their daughters had taken part in the study described in Chapters Two and Three. I decided to interview parents to garner their views on their daughter's friendships and peer relationships, to learn how they saw their daughter's social development to date, and to ascertain whether they had concerns for their daughters as they grew up, considering the vulnerabilities discussed by adult autistic women in Chapter Four. Interviewing parents as well as autistic girls and women allowed for direct comparisons between the perspectives of the girls and their parents. I decided to include this data in this separate, comparative Chapter rather than in Chapter Two in order to include parents' perspectives on the change over time in autistic girl's friendships

and relationships, as this was something which autistic girls themselves did not discuss, but which autistic women did.

Rather than attempting to combine parental and young people's views on topics of interest, as in this Chapter, most research with parents of autistic children and young people has focussed on the parents themselves. For example, aspects of their lives such as their coping strategies (Dabrowska & Pisula, 2010; Gray, 2003; Gray, 2006), mental health and well-being (Allik, Larsson, & Smedje, 2006; Bromley, Hare, Davison, & Emerson, 2004), or the impact of parenting a child on the autism spectrum on their own lives (Woodgate, Ateah, & Secco, 2008). This work has generally found that having an autistic child is significantly more stressful than having a neurotypical child (Baker-Ericzén, Brookman-Frazee, & Stahmer, 2005; Hayes & Watson, 2013). This increased stress has been suggested as potentially contributing to parents having more mental health problems (Dumas, Wolf, Fisman, & Culligan, 2009) and higher levels of family breakdown (Hartley et al., 2010).

There has been some work looking at the involvement of parents in the friendships of autistic individuals (Frankel et al., 2010; Frankel, Myatt, & Feinberg, 2007) but, as with most autism research (Banach et al., 2009), this has been carried out with mainly male participants. These male-dominated studies are nevertheless informative in shaping expectations for the role of parents in the friendships of autistic girls. Most research has emphasised that parents try to focus on building the friendships, or friendship 'potential', of their autistic children through entering them into social skill interventions or through peer-based interventions at school (Calder et al., 2013; Frankel, Myatt, & Feinberg, 2007; Laugeson, Frankel, Mogil, & Dillon, 2009). While these are often found to have effects in terms of an improvement in the target skill, such as turn-taking in conversations, there have been questions about how generalizable these learned skills are (Ramdoss et al., 2012; Reichow, Steiner, & Volkmar, 2013) – an issue that has been raised in some research about the playground skills of younger autistic girls. In

their 2009 book, Nichols, Moravcik and Tetenbaum talked to teachers who said that autistic girls “know the rules of the playground, but struggle to put it into practice” (p. 195), a sentiment which was also voiced by one of the teachers in Calder et al (2013), which suggests that this is a common occurrence.

Bringing together the views of parents and autistic young people in one piece of research is a highly novel methodology, only being utilised in two previously published studies with autistic girls, although these did not focus on friendships in particular, but rather on experiences of education in general (Cridland, Jones, Caputi, & Magee, 2014; Sproston, Sedgewick, & Crane, 2017). One study that has carried out these direct comparisons between autistic girls and their mothers found that the two groups largely agreed on the main challenges which girls faced, both socially and in school (Cridland, Jones, Caputi, & Magee, 2014). This was a small-scale qualitative study, with six mother-daughter pairs (with girls aged between 12 and 17 years old) taking part in semi-structured interviews which sought to explore their experiences of “being a girl in a boys’ world” (p.1261). Key findings related to problems getting a diagnosis, difficulties with the school environment, and being surrounded by boys in special education settings. Relevant to this thesis, girls and their mothers talked about feeling socially excluded due to incomprehensible social ‘rules’ with which the girls struggled to comply, including mothers talking about how things had become more difficult around the transition to secondary school and the change in social expectations – “she could not read what people expected of her, she didn’t know how to do the conversation thing of I talk then you talk” (p. 1267). The girls and their mothers all reported difficulties with making and maintaining friendships with neurotypical peers because autistic girls struggled to keep up with these social expectations. Autistic girls also talked about feeling highly anxious around their peers, as they were worried about “doing the wrong thing”, which in turn impacted upon their ability to make and maintain successful relationships.



Another topic relevant to the study presented in this Chapter, in light of autistic women's reported experiences in Chapter Four, was that of concerns around sexual relationships, although this was only raised by mothers and not at all by autistic girls themselves. While the girls were of a similar age range to the girls studied here (see Chapter Two), one potential limitation of the Cridland, Jones, Caputi, and Magee (2014) study was that the mothers and daughters were interviewed together, which may have restricted how open they were about some topics, especially those around sexuality and vulnerability. Despite this potential inhibition, however, in Sproston et al., some girls actually asked for their mothers to be in the interview with them in order to reduce their anxiety about taking part, so it may not always be the case that parental presence reduces the amount that young people share with researchers.

The second study to utilise concurrent parent-child interviews with autistic girls and their parents also had a small sample size (n=8 participant pairs), and focussed on the girls' school lives, specifically their experiences around school exclusion and alternative provision, which means that the participants in this study may represent a particular, extreme, set of educational experiences (Sproston, Sedgewick, & Crane, 2017). The participating girls had all been excluded from mainstream schools, which meant that although difficulties with peers was a topic of discussion for many mother-daughter pairs, there was a much greater focus on the school environment and relationships with teachers and other professionals. The questions asked of the girls and their parents also differed in part, as parents had a much greater level of engagement with the Local Authority (the government organisation responsible for co-ordinating and managing educational provision in an area) and the school senior staff than their daughters, and so had different insights to offer. In contrast, the current study sought to get parental views on precisely the same topics as the adolescent interviews, in order to understand

how the two groups approach friendships and relationships and how they think about their own or their child's future.

There has also been some recent research published on the ways in which parents educate their autistic children around sexual behaviours and relationships, as sex education is highly relevant to teenagers. These have found that the parents of autistic children tend to give their children less information, and do so later, than the parents of neurotypical children (Mehzabin & Stokes, 2011; Stokes & Kaur, 2005). This is possibly because parents are not expecting their children to have any interest in romantic and sexual relationships, due to the nature of autism and an apparently lower level of social motivation in autistic individuals (Chevallier et al., 2012). It is also possible that parents are nervous of bringing up the subject in case it encourages young people to think about relationships that had not previously occurred to them, or because parents are embarrassed about the topic. Whatever the reason, there is evidence that autistic boys do engage in sexual behaviours and think about romantic relationships (Hellemans, Colson, Verbraeken, Vermeiren, & Deboutte, 2007), and that romantic relationships and 'crushes' can be the focus of a special interest for autistic girls (ITV, 2015). As romantic relationships were a significant theme in the interviews with teenagers (see Chapter Two), I also asked parents for their views on the romantic relationships, existing or potential, of their daughters, and about any worries they may have regarding those relationships.

Considering the extent to which sexual and social vulnerability was discussed by adult autistic women, I also sought to discuss the future and the move towards adult relationships with the adolescent girls' parents, and to compare their responses to those of their daughters. Many adult women talked about how they were unaware of the risks to which they could be exposed once they matured and left home (see Chapter Four), but most adult participants were also unaware of their diagnostic status at that time in their lives, having received late diagnoses.

It is therefore possible, and to be hoped for, that those adolescent girls who are diagnosed earlier in life are more prepared for these situations, but this has hitherto not been studied in the literature.

### **5.1 The Current Study**

The data analysed in this Chapter sought to address two key aims: (1) to examine the developmental changes as autistic girls become autistic women, by comparing the themes emerging from the interviews presented in Chapters Two and Four, and (2) to introduce parents' perspectives on their daughters' changes over time. To achieve these aims, I report a new analysis directly comparing the qualitative portions of Chapters Two (adolescent autistic girls) and Four (adult autistic women), alongside the analysis of the parent data. I also report new data from parents about their views and perspectives on their autistic daughters (who were the participants in Chapter Two), including their concerns about their daughters' futures and their transition to adulthood.

I decided to present the combined interview results in this way to capitalise on both the varying stages of life (adolescence, early-to-mid adulthood) and varying perspectives (adolescent autistic girls, their parents, autistic adult women) in the broader dataset. I felt that analysing these data together had the potential to yield rich insights into the developmental changes of young autistic women, beyond what would have been possible by analysing each of these perspectives on their own. Indeed, one would expect friendships to change from early childhood into adolescence (Hartup & Stevens, 1997) – but this is not a process which autistic girls themselves reflected on in their interviews in Chapter Two.

### **5.2 Method**

The data in this Chapter constitutes the interview data from Chapters Two and Four, along with a new analysis of parental views, and a direct comparison between all three groups.

### **5.2.1 Participants.**

Each of the parents of the 27 autistic adolescent girls in Chapter Two were invited to take part in an interview focusing on their perceptions of their child's friendships, via a semi-structured interview over the phone. Twenty parents agreed to take part (19 mothers, 1 father). Participants in this study therefore included the 20 adolescent autistic girls whose parents took part, aged between 11 and 17 years (M age = 14.44; SD = 1.91), these parents (M age = 42.01; SD = 8.92), and 19 adult autistic women, aged between 20 and 40 years (M age = 30.27; SD = 6.11) (see Chapters Two and Four, respectively, for more details on each group of participants). The interviews of the autistic girls ranged in length from 5.51 minutes to 26.90 minutes (M = 14.15; SD = 6.74); of the autistic women from 19.14 minutes to 77.55 minutes (M = 34.49; SD = 12.15); and the parent interviews ranged from 25.20 minutes long to 71.45 minutes long, with a mean length of 40.02 minutes (SD = 12.54).

### **5.2.2 Measures.**

The interview data which is used in this Chapter can be found in Chapters Two (autistic girls) and Four (autistic women).

#### ***5.2.2.1 Semi-structured interview.***

The interview in which parents took part was modelled directly on the adolescent semi-structured interview, framing questions as about the friends of 'your child' rather than about 'your friends' as for the adolescent participants. It also sought to elicit parental views on the future of their child's relationships and their child's social experiences across the lifespan (see Table 5.1), and featured the same critical incident section as the adolescent interview. The adolescent interview schedule can be found as Table 2.3 in Chapter Two, the adult interview schedule as Table 4.2 in Chapter Four.

### **5.2.2 General procedure**

Interviews with autistic girls and women were carried out at the time of testing, as part of the procedures described in Chapters Two and Four. Interviews with parents were conducted between three and nine months after testing with autistic girls, and were conducted via phone calls. Parents were asked on the parental consent form whether they would be willing to take part in an interview at the time of giving consent for their child to take part in the study described in Chapters Two and Three. Once their child had taken part, they were then contacted via email to organise a date and time for the interview to take place. Parents gave further verbal consent for participation and recording at the beginning of the interview.

### **5.2.3 Data analysis.**

All parents consented to be recorded and have their words transcribed. The interviews were then subjected to thematic analysis following the process outlined by Braun and Clark (2006) (as described in Chapters Two (Section 2.4) and Four (Section 4.4).

Table 5.1

*Interview schedule used with the parents of autistic girls, with main questions and prompts.*

Key Question	Question Prompts
Can you tell me a bit about your daughter's friends?	Does she have many friends? Where does she see them? How often? What does she do with her friends? Does she use the internet to keep in touch with friends? Are you happy with the friends she has? How have these things changed over time?
What do you think being a friend means to her?	How does she choose friends? Has she ever had not-so-good friends, or people who pretended to be her friend? Have you ever worried about any of the friendships she has made? Has what she looks for in a friend changed over time?
Can you tell me some good things and some difficult things about her friends?	Do her friends help her? Does she ever argue with her friends? How does she try to manage arguments with friends?
What about romantic relationships?	Is she dating? If not: Do you think she would like to in the future? Do you have any concerns about her dating?
Do you have any concerns about the future for your daughter?	For example, about her moving out? Do you think she is worried about the future?
Is there anything else you think it would be interesting for me to know about her friendships or how she gets on with people?	

### 5.3 Results

Given that it was expected that parents might have different views and concerns to their daughters or to adult autistic women, themes which were discussed by parents but not by the autistic girls and women are discussed alongside themes that are common across the groups. This can be visualised in Figure 3, where thin lines represent themes discussed by parents only, dashed lines represent themes discussed by parents and autistic women, and bold lines signify themes discussed by all groups – parents, autistic girls, and autistic women. Parents have been taken as the target or foundational group in this analysis as they are the novel participants, with the themes from the interviews with autistic girls and women having been discussed in detail in Chapters Two and Four, respectively. Therefore, I first present the themes which were raised only by parents, then second link parental themes to those of autistic girls, and finally present the themes and perspectives which were common to all three participant groups (autistic girls, their parents, and autistic women). When attributing quotes, ‘P’ refers to parents, ‘AG’ refers to autistic girls, and ‘AW’ refers to autistic women. Themes are italicised.

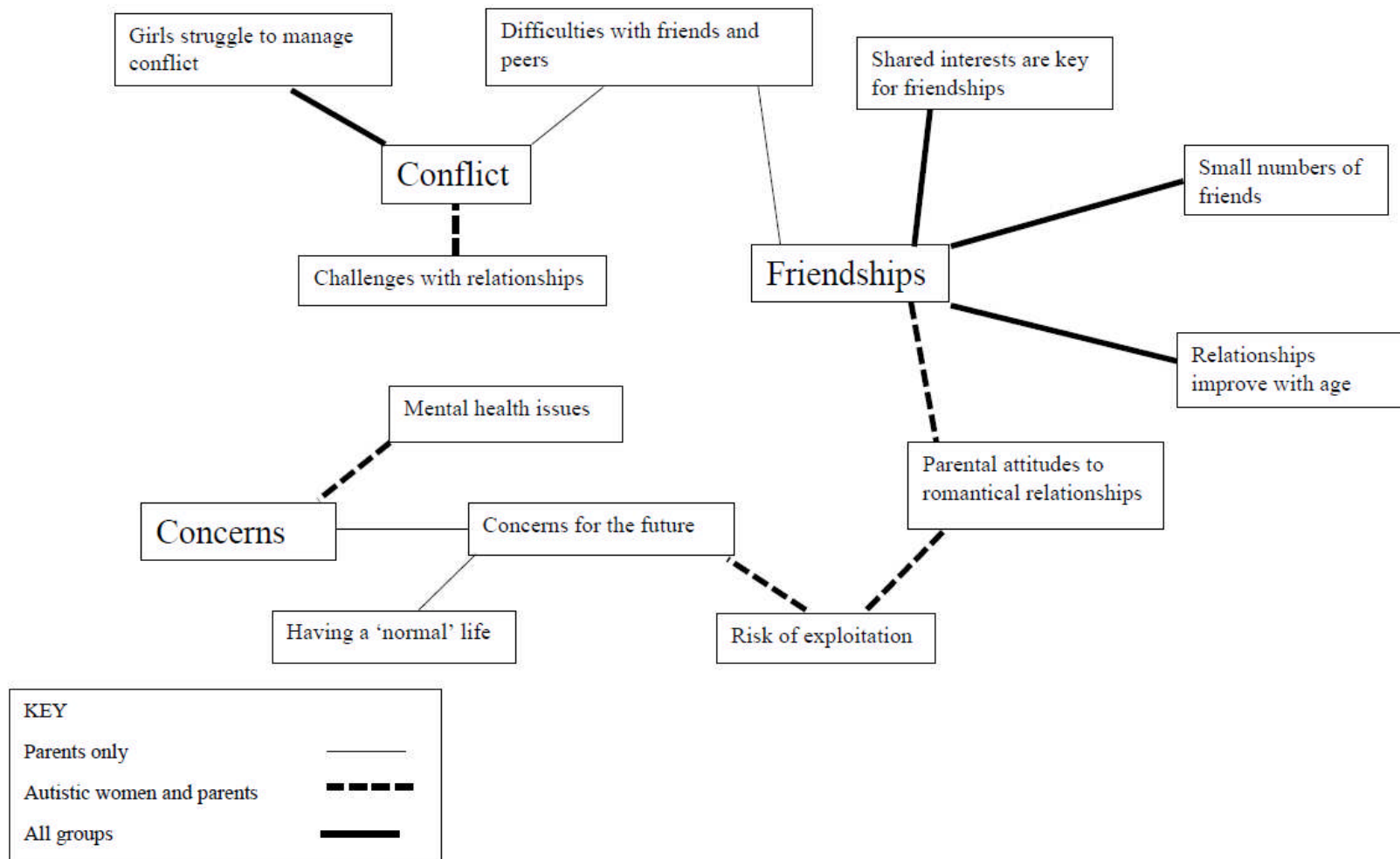


Figure 5.1. Diagram showing the themes identified from the interviews with autistic girls, their parents and autistic women.



### 5.3.1 Parent-only themes.

I identified five sub-themes unique to the interviews of parents of autistic girls: *difficulties with friends and peers*; *mental health issues*; *concerns for the future*; *parental attitudes towards romantic relationships*; and *relationships improving with age*.

Although autistic girls had reported finding it difficult to respond effectively to conflict with their friends, parents spoke of their daughters' frequent and intense *difficulties with friends and peers*. Parents were far more likely to talk about instances where the girls had been bullied at school, such as "people push into her" (P) or "they'd set her up to get her in trouble" (P), which the girls themselves did not mention at all. Some girls had also been targeted because of their sexual identity, with one parent recounting a story of how a girl at school had pretended to be attracted to her daughter and arranged a 'date', only to turn up with a large group to laugh at her instead. These difficulties with being bullied were common to most of the girls according to their parents, although they had generally been when they were younger or in primary school. Parents also spoke of how their daughters had difficulties engaging with their peers, possibly because of earlier negative experiences: "she's a lot more guarded... you have to swim the moat, cross the drawbridge, climb the walls, and then if you're lucky, she'll let you into her friendship circle" (P). This perceived aloofness could lead to its own problems for the autistic girls, as parents felt that "people think she doesn't want friends, so they leave her alone" when in fact "she'd like friends, she just doesn't know how to start a friendship" (P). In their interviews, however, the autistic girls did not seem to be aware that they might present a challenge to other people who would want to be friends with them.

These negative experiences, potential isolation, and difficulties managing their own responses when things went wrong were talked about by parents as contributing to relatively high levels of *mental health issues* amongst the autistic girls in the study. As discussed above (and in Chapter Two), several girls had a history of self-harm, depression and anxiety. Parents

were naturally worried about these behaviours and conditions, but reported struggling to find support: “it takes so long to get through CAMHS that we just don’t know what to do” (P). Very few girls discussed this issue, beyond the ones discussed above who recognised that they had difficulties with anxiety, and one girl who was very open about her depression and the effect that it had on her friendships: “it makes it even harder because I don’t want to get out of bed and it feels like they wouldn’t want to see me anyway” (AG). This negative feedback cycle appeared to intensify the difficulties that parents see their daughters having with their peers, which then feeds into their low mood and social anxiety.

Parents also discussed their *concerns for the future* for their daughters. These concerns fell into two key sub-themes: “*wanting her to have a normal life*” and the *risk of exploitation*. Many parents talked about wanting their autistic daughter to “be able to go to uni, have a job, live on her own” and not knowing “if that will ever be possible” (P). This worry about future independence was not discussed by their daughters at all in their interviews, who were instead generally being fairly upbeat about finding a career: “I want to be a writer, and I’m already sending stories to people”; “I’m taking A-levels to go to university and be a doctor” – and their future relationships – “dating is for when you’re a grown up, I’ll find someone to marry when I’m older” (AG). Their parents, in contrast, were worried about how the girls would cope with the practicalities of moving away, such as one mother who said, “she wouldn’t eat if she didn’t have someone reminding her, she wouldn’t always shower or brush her teeth... I wouldn’t want her living on her own” (P). Several parents talked about hoping that their daughters would find what they considered to be more ‘typical’ friendships, for example saying, “maybe I have to accept that this is how she does it, but it would be nice if she could find a group of friends like her sister” (P), because they thought that those relationships would be more fulfilling than the ones they currently saw their daughters having. Others, though, were very accepting of how their daughter socialised, even if they would not want those relationships themselves: “you

look at her and her friends, and they'll all be talking about their own thing and none of them listening, or they'll all sit and read their books in silence. I wouldn't think that's friendship, but they're happy with it, which is fine" (P).

Parents' other major concern lay around the girls' potential *risk of exploitation* as they grow up, something which was raised by both parents and adult women, as can be seen in Figure 3, indicated by a dashed line. They were worried both socially and romantically for their daughters, either that someone might try to take advantage of the girls' trusting nature – “she thinks the best of people, so she would trust what they said” (P) – or of their desire to be liked – “if someone said ‘Do this and I'll be your friend’, she'd do it, and that gets dangerous” (P). One mother said that she was worried about her daughter in future interactions with men, because “they might say ‘I've given you a drink, have sex with me’, and she might do it”. Several also worried about their daughters ending up in exploitative, abusive, or controlling relationships – “all her friendships have had a power dynamic, and I think it would be the same with boys”; “I'd be worried about her staying with someone who was bad for her because in her head, someone is better than no-one”.

This area of concern linked to the next theme identified from the interview data, that of *parental attitudes to romantic relationships*. Parents were generally unconcerned about their daughters' sexuality – “we've said to her, we don't mind if it's girls or boys”, “she has a girlfriend now, which is really sweet”, “she's declared herself asexual, which I think is one less thing to worry about”. Several girls had boyfriends at the time of the interviews, which they were mostly open about with their parents: “she talks to me about things, so I know who she likes and when they started dating” (P). Yet, those who were interested in dating or actively dating were still seen by their parents as uninterested in the physical aspect of these relationships: “I don't think she'd want someone touching her”; “I think she'd just like a romance story”. This attitude persisted even when parents knew that the girls were becoming

sexually active, such as one mother who said “I got a bit of a surprise when I found out that they’d kissed”, and then shortly after also said “I don’t think she’s interested in kissing and things”. Similarly, another parent said, “I think she likes the sensory aspect of people, stroking and touching... she likes that her girlfriend is squishable! I know they’re cuddling on sleepovers and things” and followed this up with “I don’t think she’s interested in a physical relationship”.

These apparent contradictions in parents’ own reports were also unsupported by the girls themselves, who instead spoke about being significantly more interested in romantic relationships than their parents thought they were: “it’s a bit of an obsession for me and my friends”, “I’d love to have a boyfriend as soon as I can”. For some girls, their partner was the most important relationship they felt they had – “he’s my best friend and my boyfriend” (AG). This importance in their lives meant that autistic girls could be very vulnerable to distress if the relationship were to end, which could place them at risk of self-harming behaviours, as with friendship difficulties, or trying to keep the relationship despite the cost.

Despite the many and varied difficulties and concerns which parents discussed having about their daughters’ friendships and relationships, there was a strong theme that there had been a marked *improvement with age*. Parents reported that the worst instances of bullying and peer aggression had happened when their daughters were in primary school and in the first couple of years of secondary school: “in Year 5 some of the girls just stopped talking to her and started leaving her out of everything” (P). There were undeniably still some on-going difficulties with peers for many of the girls: “they’ll do things like test her friendship, and say I’m not walking to school with you anymore, and if she doesn’t protest then they tell the others that she doesn’t really want to be their friend and they should leave her alone” (P). Nevertheless, these difficulties had abated over time: “it’s better now because she’s got her couple of friends, and everyone else is more mature and let them get on with it” (P); “people

seem to care less about being cool and just accept that their group is the odd, geeky group and that's fine" (P). Autistic girls also talked about this in their interviews: "I've got better friends now than when I was little" (AG) and that their friends "let me be myself" (AG) rather than "caring about who has these shoes or bag or is the coolest" (AG).

### **5.3.2 Themes common to parents and daughters.**

I identified three themes of clear agreement between parents and their daughters, around the ideas that '*shared interests are key for friendships*', '*girls have small numbers of friends*', and that '*girls struggle to manage conflict with friends*'.

The first of these themes, that *shared interests are key for friendships*, came up repeatedly amongst the parents of autistic girls and amongst girls themselves. Parents described girls as "bonding over shared interests" (P) and that this was "the easiest way to get talking to someone" (P). One mother described how her daughter had been at a concert with her friend and had started talking to a stranger who had overheard her conversation about an anime show and told her how cool she thought it was, in contrast to her daughter usually being very shy and withdrawing from strangers. Similarly, girls themselves talked about how their friends are "people like me" (AG) and how "we like the same things and talk about the same things" (AG). Parents felt that these shared interests made it simpler for their daughters to make and maintain friendships with other young people because it gave a focus to their interactions: "they do arts and crafts and things so they can talk about that and there is an excuse not to make eye contact" (P). Having friends who were into the same things also meant that autistic girls had the opportunity to talk about their interests, which parents felt played to their strengths: "they can talk for hours about books and she gets to be the one who knows the most or is 'best' at it, which she usually isn't" (P). It should be noted, however, that many young people find friends who are interested in the same things as them, simply because that is who they want to socialise with, and so this may not be unique to autistic girls.

It was apparent from the interviews with autistic girls in Chapter Two that they tended to have *one or two close friends*, rather than being part of large friendship groups. Parent interviews reinforced this pattern, referring to how their daughters have “a couple of girls [they are] close to” (P) or “one special friend” (P). Similar to the girls’ interviews, where they spoke about having “one friend at a time, otherwise it’s too much hard work” (AG), parents talked about how their daughters would “have one friend, and then have a new best friend, but one after the other, not both at the same time” (P). The girls themselves identified that this was because they often found it required a lot of work to maintain their friendships, which would be overwhelming if they had to try to manage more than one. Their parents corroborated their views: “she finds it hard to follow what everyone is saying or thinking in a group, she’s better one-on-one” (P).

Interestingly, parents commented that their daughters often found friends who were also autistic or who had some other form of special educational need: “she tends to have friends who are vulnerable...[her friends have] learning difficulties” (P); “her best friend, the school have just assessed and say she has high levels of autistic traits, which is kind of funny to me because we’ve known for ages” (P); “she has two best friends, and they both have different things – one has severe anxiety and the other has difficulties at home” (P). The difficulties their friends may have were only discussed by a few of the girls in their own interviews, with one talking about a friend with “a split personality” (AG). Some of the older girls did talk about having friends who “are anxious like me” (AG), but they did not see this as something that was significant in their friendships in the way that parents did.

That autistic girls *struggle to manage conflict with their friends* was also a common theme, although the girls and their parents described these difficulties in different ways. Some girls stated that they “don’t really fall out with [their] friends” (AG), but then described a range of conflict incidents such as “she wanted me to stop talking to this other girl or she would stop

talking to me” (AG). When faced with these difficult situations, autistic girls often either withdrew – “I’ll stop talking to them until we get over it” (AG) – or they took the blame entirely for what had happened – “obviously, I would very quickly apologise to her and say, I’m really sorry about this” (AG). In contrast, parents described their daughters as frequently becoming distraught over conflicts with their friends: “she’ll go up to her room and cry and cry” (P). For some girls, their distress over these incidents could reach a level of unhappiness that it caused them to react by self-harming: “I have to watch for her wearing long sleeves, especially if she stops talking about a friend” (P). This extreme reaction was mentioned by several parents, suggesting that self-harm, particularly in relation to social situations, may be worryingly common amongst autistic teenage girls.

Some parents also spoke about the fact that their daughters would end friendships that had become difficult for them, which was similar to the way autistic girls described reacting to friendship conflict. For example, parents said things like “she’ll just stop talking about someone, and when I ask about them say ‘we’re not friends any more’” (P), and “it’s a shame, but she just acts like that girl never existed now” (P). That people were totally cut out of the girls’ lives once they considered the friendship to have ended was also something the girls themselves talked about, with one saying “I have lists of people who *were* my friends” (AG: participant emphasis). Parents, however, recognised that their daughters had sometimes ended friendships over minor things because they had misunderstood or had very “black and white thinking about people – once you’ve upset her, that’s it, she’s done, no matter if you say sorry” (P). For example, one mother talked about how her daughter had “rang me to say people were bullying her outside school, but all I could hear in the background was people saying ‘hi!’, and obviously you’re not there but there was no laughing or anything. I think she was just wanting to be quiet and, because they weren’t being quiet, she thought it was bullying” (P).

### 5.3.3 Similarities between autistic girls, their parents, and autistic women.

In different ways, there are links between all these themes and the interviews carried out with autistic women and described in Chapter Four, which are visualised in Figure 5.1 (see page 162).

Autistic adult women said that *shared interests* were still key to who they chose to socialise with, although these shared interests and experiences were often now around their children or work: “you get to know the other mums of kids with special needs, and you spend time with them and you support each other” (AW); “me and my friends spend a lot of time talking about the books and things we enjoy, that’s always good” (AW). That some of their interests – such as books and creative writing – were the same as those they had in adolescence was also important to them, as they felt it gave continuity to their friendships – “there are some people I’ve known since high school and we can still talk about the new Terry Pratchett or Doctor Who” (AW) – along with providing a concrete topic as a conversation starter, which they felt made it easier to socialise.

The preference for *small numbers of close friends* rather than larger groups was equally strong in autistic women as in the adolescent autistic girls, just as parents discussed – indicated by the bold line in Figure 3. They found these relationships easier to manage (“I don’t need to be with lots of people, that’s hard work”: AW), just as autistic girls described (“it’s hard to follow what lots of people are saying at once”: AG), supporting parents’ interpretation of what they thought was happening with their daughters’ friendships. That this pattern appears to be relatively stable into adulthood, and that autistic adult women actively sought to be more selective with friendships as they aged and matured, suggests that supporting autistic girls in their smaller friendship groups of two or three will help prepare them for their later adult relationships too.



The intensity of the friendships described by adult women, and some autistic girls, was something not identified in parents' interviews. For example, one adult woman said, "I want to talk to my friend all the time, every day" (AW), and autistic girls talked about wanting "the kind of friendship where you're basically absorbed into another family, you can just turn up all the time" (AG). In contrast, parents sometimes felt that even if friendships were important to their daughter, they "want to have plenty of [their] own space, it's like being a whole friend is too much so they're half a friend each to her [when discussing a girl who was friends with both her son and daughter]" (P). These perceptions may stem from parents' desire to see their daughters having friendships which they felt were more 'normal', whereas in fact most autistic girls were very satisfied with the current state of their friendships.

Another theme where there was agreement between the three sets of interviews (see bold line in Figure 3) was on the topic of *conflict within friendships*. Autistic girls and their parents both talked about conflict and difficulties with their friends and peers, and autistic women also remembered having many difficulties during their adolescence: "it was really bad in high school, I had almost no friends and I was bullied a lot" (AW). Autistic women still had difficulties interacting with peers that led to conflict in their adult lives – "the mums at the school gate will drop you like a hot potato if you say the wrong thing" (AW) – but felt more confident handling these than they had when they were younger – "I'm happy to walk away and say 'I don't need your neurotypical drama'" (AW).

The impact of conflict within the relationships of autistic girls was clearest when discussing mental health, and the behaviours that these issues could lead to. It was clear from the adults' interviews in Chapter Four that there were many serious and on-going mental health issues amongst adult autistic women, most commonly anxiety and depression. Some women in the adult study talked about having self-harmed or having attempted to commit suicide,

particularly in their early 20's as they faced the transition to adulthood and independence: "it was a shock going to university, I had no idea what to do and no-one to talk to about it" (AW).

Despite the potential for on-going mental health issues represented in the adult participants, some of the parents' other anxieties, such as about whether their daughter would have a '*normal life*', were less borne out amongst the adult participants. Most autistic women were in education or employment, lived independently, and many were either dating, married, or married with children. These are all considered to be 'traditional' markers of independent adulthood, and suggest that most autistic adolescent girls can also look forward to enjoying a fairly 'typical' life in many ways, something which some parents were worried about. Although it was clear in interviews with autistic women that they sometimes had not reached these points by following a 'standard' path – "I dropped out of university twice"; "I had to make my own job really, be self-employed, because I didn't do well in a big office" (AW) – the autistic women in this study were generally satisfied with their current life circumstances, although significantly less so than their neurotypical counterparts (see Chapter Four).

The *risk of exploitation* that autistic girls may face as they mature was also a common theme across many adult interviews, as indicated by the bold line in Figure 3. Parents expressed some worries about how their daughters would navigate dating and romantic relationships as they grew up, particularly their vulnerability to people who might wish to take advantage of them. This vulnerability was reported by adult autistic women, to an alarming extent, who described being subject to domestic abuse, sexual assault, and many other forms of exploitation. Adult women themselves attributed some of these experiences to their trust in people – "I always think that other people will stick to 'the rules' of how you're meant to behave, no matter how many times I see that they don't" (AW) – something that parents of autistic girls were worried about – "she always thinks the best of people" (P).

While parents were concerned about how their daughters might interact with (particularly) men in the future – “I’m worried she would do almost anything to make her boyfriend happy, if he told her that it was what everyone else was doing” (P) – they did not always link these future concerns to their daughter’s current relationships. Some parents remarked, “sex ed[ucation] and all that is up to school, I know she knows about the biology of it all from there” (P), and suggested that because schools are responsible for Personal, Social, Health and Economic (PSHE) education<sup>4</sup>, they did not need to discuss relationships with their daughters as much. Parents who are embarrassed about these conversations, or who think they are unlikely to be relevant to their child – “I just can’t see it being an issue, from where we are right now” (P) – were in the minority in this sample, but a significant one. Indeed, this idea was challenged by the interview data of the adult autistic women, who spoke of how they “wish[ed] someone had sat me down and said ‘this is not normal’, that would have helped” (AW). One autistic woman was open about the fact that “I still can’t see why my mum thought he was bad for me, but she thought he was very controlling, she says all my other boyfriends were domineering” (AW), despite having now been happily married for 16 years. She could not reframe how she saw earlier relationships, and thought that being given an explanation for why these behaviours were unhealthy might have helped her to avoid some unpleasant situations.

Several women also talked about how they “got to university and suddenly boys were interested in me and I didn’t know what to do about it” (AW), because romantic and sexual relationships had never been explicitly discussed with them. This lack of knowledge left them vulnerable, as they were attempting to navigate these situations in a very naïve way, with partners who were often more experienced than they were. Many autistic girls were similarly

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<sup>4</sup> PSHE is a subject in which students are taught about topics which are not part of any traditional subject, under three themes: (1) health and well-being; (2) relationships; and (3) living in the wider world).

naïve to what might be expected in a romantic relationship, saying things such as “a boyfriend is just a boy friend who you spend time with and has to be nice to you” (AG), or “when you’re dating someone you get to talk to them all the time” (AG). Although the autistic girls who were currently dating were aware of the fact that these relationships would possibly, and even likely, end, this was their only worry in terms of dating and romantic relationships. None of the autistic girls displayed any awareness of, or worry about, someone trying to take advantage of them in a sexual way, even if they knew that, for example a bad friend is someone who “tries to make you do things you don’t like” (AG) or who “is mean to you and upsets you” (AG).

It is also worth highlighting that many parents reporting making efforts to discuss healthy relationships with their daughters, both in terms of friendships – “we read a lot of books about friends and talk about what good and bad friends are” (P) – and romantic relationships – “mum has talked to me about how you don’t have to do something just because your boyfriend wants to” (AG). These parents tended to have fewer concerns about their child being taken advantage of or being vulnerable in that way, even if they were still worried about her future independence: “I’m very proud of her because she told him ‘no, I don’t have to’ and she walked away” (P). These parents, and autistic girls, were the most confident about the future and about their relationship, saying that they were “pretty open with each other” (P) and that “I know I can go to her if I don’t understand something someone has said” (AG). Similarly, autistic women who had family and friends with whom to discuss their situation and relationships appeared to be the happiest and most satisfied: “it’s always useful to go over it with [someone], to check ‘have I read this right?’ and so you just check in that you’ve understood, because I don’t always” (AW).

This *increasing satisfaction and confidence with age* was apparent even across the 11 – 18 age range of the autistic girls, and was strikingly clear amongst the adult autistic women. While adult autistic women still reported having some issues in their relationships, particularly

their more casual relationships such as with colleagues and acquaintances – “I never know what to say to people at the office” (AW) or “the dinner lady from school suddenly said I was harassing her, when I’d only messaged her on Facebook” (AW) – these were less frequent than they remembered them being in adolescence. They were also much more secure and happy in their more significant relationships, which had a crucial and positive impact on their lives overall, including on their mental health: “knowing he’ll be there at the end of the day gets me through some of the tricky times at work” (AW). Several of the adult women put this increased satisfaction down to their own increasing self-confidence, often linking it to receiving their diagnosis – “getting the diagnosis helped me to understand myself so much better and suddenly it was like ‘oh, I’m not an idiot who messes everything up! It’s autism!’ and I had an explanation for things” (AW).

#### **5.4 Discussion**

This study used semi-structured interviews to compare directly the experiences of autistic females at different stages of their lives – adolescence and emerging adulthood – and also to gain the perspectives of the adolescent girls’ parents. These comparisons showed that, in general, the story of relationships, satisfaction, and self-assurance improves as autistic girls and women grow up – an unexpected and hopeful finding. Nevertheless, all groups involved in this study – autistic girls, their parents, and autistic women – discussed difficulties with their own or their daughters’ friendships and romantic relationships. Parents and autistic women were also similarly concerned about the vulnerability of females on the autism spectrum, but autistic girls were almost universally unaware of these, a key finding which highlights the need for specific support and teaching around these topics.

There was a high degree of agreement as to the key themes around friendships, romantic relationships, and social experiences for females on the autism spectrum. Previous research which has looked at how mothers and daughters experience autism has focused on their school

experiences and similarly found that they agreed on what was important and what was difficult for them (Cridland, Jones, Caputi, & Magee, 2014). In that study, however, mothers and daughters were interviewed together, and so this degree of consensus might be expected. That the parents and daughters described in the current study continued to agree on some of the key topics when interviewed separately suggests that these are clear and significant themes in their social lives. It also suggests that autistic girls and their parents (especially mothers) are talking to each other about what is going on in their lives, how to respond to it, and what is worrying them. Research with neurotypical adolescents has shown that those who have strong, open and supportive relationships with their parents are less likely to engage in risky behaviour (Wight, Williamson, & Henderson, 2006), have better resilience (Olsson, Bond, Burns, Vella-Brodrick, & Sawyer, 2003), have fewer mental health issues (Armsden & Greenberg, 1987), and have better academic outcomes (Jeynes, 2007). This suggests that autistic girls are likely also to be benefitting from these types of relationships with their parents. This is further supported by the adult interviews, as autistic women who felt that they were less prepared for adult relationships by their parents tended to describe having gone through severe difficulties during their early adult lives.

A key theme identified in both parent and adult women interviews was that of mental health difficulties amongst females on the autism spectrum. Parent interviews revealed that conditions such as depression and anxiety begin early in life for autistic girls, and adult interviews showed that these are often also present in adulthood. This finding is in line with existing research, which has shown that autistic adolescents are significantly more likely to be anxious and depressed than their neurotypical peers (Ghaziuddin, Ghaziuddin, & Greden, 2002; Kim et al., 2000; White et al., 2009). Baldwin and Costley (2015) showed that mental health issues are prevalent amongst autistic women in Australia, and this was also the case in the adult women described Chapter Four. Baldwin and Costley did not attempt to examine the

onset of these issues in their study, however, and the findings from the current study, retrospective though they may be, suggest that mental health issues may develop in late childhood and early adolescence. It is worth noting, though, that most adult participants had received a late diagnosis, and so had not been able to take advantage of any support during adolescence, instead only accessing services through adult crises. It may therefore be the case that, with adequate and timely mental health support, the autistic girls in this study will not face the same extreme difficulties as the adult sample, as they and the people around them are aware of their diagnosis much earlier in life. Although some parents felt that the existing provision was slow and unwieldy, research which provides evidence for the need for specialised support for autistic girls may help to improve this process. The current findings suggest that autistic girls may benefit from mental health and social support from the beginning of the transition to secondary school, a time which is widely recognised in autism research as challenging for young autistic people (Ashburner, Ziviani, & Rodger, 2009; Sproston, Sedgewick, & Crane, 2017). This transition may be particularly difficult for autistic girls, however, as they face a significant jump in what is expected of them socially in adolescence alongside managing the practicalities of high school which are described by autistic boys in the existing literature (Humphrey & Lewis, 2008). While I cannot make claims as to the similarities and differences in the school transition experiences of autistic girls and boys, as I did not carry out direct comparisons on this topic, it would make an interesting focus for future research.

One clear and challenging theme of this study was that of autistic girls and women's potential vulnerability to being exploited. This is not the first study to highlight that autistic women frequently have extremely negative experiences with people, especially men, who may want to take advantage of them (Bargiela et al., 2016). That study found, similarly to the results described in my PhD, that autistic women often believed the best of people, leading them to trust someone who turned out to have bad intentions towards them. Parents in this study also

felt that their daughters tended to be trusting and might struggle to ‘see’ potentially exploitative behaviours within a relationship that was valuable to them, either a friendship or a romantic relationship. These perceptions were confirmed in the interviews with autistic girls, both in that they did not talk about how romantic relationships could have negative elements or outcomes, and in that they often reported handling conflict incidents by assuming that they were in the wrong. This could potentially leave girls vulnerable to manipulation, as victim-blaming and ‘gas-lighting’ (where someone insists that the victim has misinterpreted or imagined an abusive situation) are common tactics in abusive relationships (Engel, 2002). Autistic girls, who even in adolescence talk about “knowing that [they] get things wrong” in how they act and interpret social situations, may be especially affected by these tactics which play on that existing insecurity, particularly from someone who tells them that they love them. The tendency for autistic girls to end friendships over small incidents, and their struggle to understand that something may have been an innocent mistake, is another way in which autistic girls’ difficulties with theory of mind and social understanding can impact on their friendship experiences, and which can leave them feel bullied or isolated, and this isolation can play into an abusive power dynamic within a relationship.

This was something about which parents were especially worried, with several talking about how their daughters were “desperate” to have friends and boyfriends like their peers or siblings. The finding of this study highlight the importance of having open and frank discussions, both at home and in schools, around consent and healthy relationships to help protect autistic girls. While it is reassuring that none of the girls had not yet encountered any negative experiences in terms of romantic relationships, the interview data presented here showed that there is a risk that they are unaware of the possibility of someone intending them harm. Parents were also at times reticent in discussing these issues with their daughters, which may leave autistic girls vulnerable as they are therefore unprepared for how to safely handle



such a situation if it does arise. The views of autistic women on this topic emphasised how useful they would have found conversations about the potential risks of romantic situations and relationships, suggesting that it is especially important for parents to talk about these issues with their autistic daughters.

Despite these significant challenges in adulthood, all of the groups described how their friendships and relationships changed for the better with age. Adult women talked about being more satisfied with their relationships now than they had been in adolescence, older autistic girls were happier with their friendships than younger girls, and parents talked about a general reduction in bullying as their daughters grew up and their peers matured. These changes echo patterns in neurotypical friendship research, which has shown that older adolescents tend to have fewer friends than younger children, but that these relationships are emotionally closer (Buhrmester, 1990; Johnson, 2004). Research on bullying has also shown that most types tend to reduce as young people mature (Scheithauer, Hayer, Petermann, & Jugert, 2006), although cyber bullying does not always do so (Ortega, Elipe, Mora-Merchán, Calamaestra, & Vega, 2015), often because of the phenomenon of ‘trolling’ on social media. This progression should be reassuring to both autistic girls themselves and their parents, who expressed concern about the impact conflict with friends was at times having on their daughters.

These improvements were also linked to receiving a diagnosis for many of the autistic women, who described a sense of relief and greater self-understanding following the process. This relief is a common response described in the existing literature on women who receive a late diagnosis (Bargiela et al., 2016). It suggests, however, that autistic girls who are diagnosed earlier in life than the women in this study may have the opportunity to develop these more positive relationships concomitantly earlier than the adult women were able to, as they may have that understanding of themselves and their needs from a younger age. This did seem to be the case for some of the autistic girls and their parents, who talked about having friendships

which worked for them; even if they did not look like ‘typical’ friendships in every way, the girls themselves were happy. For the autistic girls in this study who have had their diagnoses much earlier in life, that greater self-knowledge may help them to develop that self-assurance and positive relationships earlier too, which would support their mental health and help them to avoid some of the difficulties the adult women had gone through.

### **5.5 Limitations**

This study is not without its limitations. First, it is worth highlighting that these were different cohorts of girls and women. The presence or absence of a diagnosis in childhood and adolescence is likely to have led to different experiences, just as there are likely to be significant differences between the experience of being an adolescent now versus in the 1980’s and 1990’s, as the adult women were (for example, social media did not exist for the adult women in their teenage years, but play a significant role in current adolescent’s social lives). It is still useful to combine the data from the adolescent and adult interviews, and to compare the themes which emerge from them, however, because the friendships and relationships which people form are similar regardless of time period. The fact that similar themes emerged from the interviews of the autistic girls and women showed that combining these data was worthwhile. Future longitudinal research will be able to address these developmental issues more directly, but in the absence of this data, the current results suggest notable similarities between the experiences of autistic females regardless of the decade in which they are diagnosed.

Second, the parents of neurotypical girls were not interviewed, so it is not possible to compare the findings directly to their and their daughters’ experiences, or to include the findings from the interviews with neurotypical women. The addition of a neurotypical comparison group would have given further insight into whether how friendships and relationships develop amongst autistic girls and women is comparable to their development in neurotypical girls and women. Yet, as Chapter Two showed that autistic girls are experiencing

far more conflict and peer difficulties, it was decided to focus on the development into autistic womanhood and any potential changes or improvements that might be in their futures.

Third, not all the parents of the autistic girls in the adolescent study took part in the follow-up interview, meaning that these responses may miss some of the range of experience amongst autistic girls. Notwithstanding, there were no differences on intellectual functioning or levels of autistic symptomatology between the girls whose parents did and did not take part (all  $ps > .52$ ), suggesting that the findings are likely to be representative of the sample.

Finally, it is worth noting that as the autistic girls and women in this study were all verbal and considered to be cognitively able, the themes of their interviews and those of their parents may not be representative of the experiences of girls and women on the spectrum who do not fall into these categories. The findings, however, are similar to those of studies which have used participants with mild to moderate learning disabilities, such as Sedgewick et al., (2016), which suggests that the social experiences of girls and women on the spectrum are relatively similar regardless of intellectual ability level.

## **5.6 Conclusion**

This study clearly showed that the friendships and relationships of autistic girls develop significantly into adulthood, particularly in the realm of romantic relationships. The findings suggest that parents and professionals should not assume that because autism is traditionally associated with lower levels of social motivation in males (Chevallier et al., 2012), who also have lower rates of involvement in sexual and romantic relationships (Howlin, 2000), that this will also be true for autistic girls and women. In fact, many autistic girls and women described these relationships as central to their social lives and happiness. It is therefore imperative to develop tools to help them recognise and maintain healthy relationships – and ones that are satisfying to them.

This study utilised semi-structured interviews to develop a multi-informant understanding of the friendships and relationships of autistic girls, and how these progress into adulthood. The research showed that there are themes of improving relationships and increasing satisfaction and self-assurance, alongside some points of real concern around the potential vulnerability of autistic girls – from both their parents and from autistic women looking back on their own childhood. No previous research has examined the developmental story of autistic females’ friendships and relationships in this way. While the findings are novel, they are in line with research amongst neurotypical girls and women discussed above, and suggest that autistic girls and women appear to be facing similar social challenges and may have similar changes in their social relationships over time, as they move from adolescence to adulthood.

## **Chapter Six: General Discussion**

### **6.1 Introduction**

The studies presented in this thesis aimed to examine the social experiences, friendships, relationships, and interpersonal conflicts of autistic women and girls. It utilised a participant group – females on the autism spectrum – who have previously been relatively neglected in the literature. The studies in this thesis had relatively large numbers of participants, in contrast to much existing work which has used small numbers of girls and women (Banach et al., 2009). The study presented in Chapters Two and Three also included a comparison group of male participants. The mixed-methods approach used within this thesis – with both questionnaires and semi-structured interviews – has not been widely used previously, with much work focussing on one approach only. While some papers have used mixed-methods with autistic adolescents, including girls, these have generally had smaller sample sizes or have been limited to special education settings (e.g., Sedgewick et al., 2015).

In this final Chapter, I will first present a summary of the findings of the studies described in each empirical Chapter. Second, I will explain how these results develop our understanding of autism in women and girls, and how this can contribute to the wider literature on gender differences in autism research. Third, I will consider the implications of my findings for research and practice. Finally, I will suggest some directions for future research to build on the findings of this PhD.

### **6.2 Summary of Main Findings**

The key findings from this PhD research were that autistic girls appear to have qualitatively different friendships to those of autistic boys, but that their friendships and

relationships are in many ways like those of neurotypical girls – a pattern that appears to extend into adulthood, at least in female participants.

### **6.2.1. The nature of autistic girls' friendships in comparison to autistic boys.**

The nature of friendships amongst autistic girls has rarely been investigated previously, with only one study previously doing so (Sedgewick et al., 2016). The study outlined in Chapters Two and Three highlighted several differences between the friendships of autistic girls and autistic boys. First, the friendships of autistic girls were more similar to the friendships of neurotypical girls than autistic boys, although there were still notable differences between the autistic and neurotypical girls in terms of the number and intensity of their friendships, with autistic girls having fewer and more intense friendships than their neurotypical peers. Second, the friendships of autistic girls in adolescence were shown to be stronger than those of autistic boys. This reflects the pattern of gender differences in friendship strength seen in neurotypical adolescents (Caldwell & Peplau, 1982; Johnson, 2004). Third, the friendships of autistic girls were based on talking to friends more than those of autistic boys, a pattern also seen in the neurotypical comparison groups and established as the gendered norm in previous research (Aukett, Ritchie, & Mill, 1988).

While making and maintaining friendships was “hard work” for autistic girls, interviews revealed that they reported caring more about having and keeping friends than their male peers. This finding contrasted, however, with their scores on the parent-rated SRS-2, which were significantly higher than those of the autistic boys (suggesting a high level of autistic symptomatology and low levels of social motivation). This apparent discrepancy may reflect the difference between parents rating a Likert scale and adolescents being given the opportunity to talk about their own experiences. It is also the case that the SRS-2 does not ask any questions about how an individual behaves within an established friendship – only about whether they struggle to form them. The girls themselves talked about how they found it

difficult to make friends, as they struggled to know whether another person really liked them or not, but within a friendship they worked hard to maintain a relationship they valued. Parents often compared their daughter's behaviour to other girls (or their other daughters) in the interviews in Chapter Five, suggesting that parent may be rating against a mental model of what they would 'expect' from a girl, as much as reporting objective frequencies of behaviours.

### **6.2.2. The nature of autistic girls' conflict experiences**

The second key focus of this PhD was the conflict experiences of autistic girls and women in comparison to those of autistic boys and neurotypical girls and boys. Here, again, there were significant differences between the conflict experiences of autistic boys and girls, mirroring the well-established gender differences observed in neurotypical adolescents. That autistic girls are exposed to relational conflict (rather than overt conflict) is consistent with the pattern seen in neurotypical girls (Crick & Grotpeter, 1995). It also makes intuitive sense. Given that autism is a 'hidden disability' (Broach, 2003), people tend to assume that an autistic person is neurotypical until informed otherwise; subjecting them to the same social behaviours and expectations that they would have of a neurotypical individual. Autistic girls are therefore exposed to, and are expected to keep up with, similar social behaviours as their neurotypical peers, and this naturally includes the type of conflict they experience.

This current research has shown, however, that autistic girls find relational conflict much harder to understand, manage, and respond to effectively than neurotypical girls. Autistic girls not only reported significantly higher levels of victimisation than all other groups, driven by relational victimisation, but (in interviews) talked about needing help from friends, and often their mothers, to understand the aggression directed towards them and how to respond. Autistic girls spoke of friends being "hard work", as discussed above, but felt that the subtle social tactics of people around them were difficult, too. Autistic girls reported asked friends "what people mean" when they said things that could be taken in multiple ways, especially to help

them recognise sarcasm – a finding consistent with autistic girls (and boys) being less accurate at identifying sarcasm on the TASIT. Interpreting sarcastic comments literally is a known feature of autism (Persicke, Tarbox, Ranick, & St. Clair, 2013), and these literal interpretations often appeared to cause the girls to get into arguments, even with friends.

Autistic girls found these arguments difficult to resolve. While neurotypical girls described waiting for tempers to calm, then talking to their friends to find a resolution, autistic girls took an ‘all-or-nothing’ approach: either assuming all the blame (and responsibility for resolution) or walking away from what they saw as an insurmountable problem. These strategies are not necessarily positive ones, and could leave autistic girls vulnerable. If a girl is friends with a manipulative individual, as some parents said their daughters were, they may take advantage of her desire to ‘make up’ with them to convince her to do things she would not otherwise have done. Although in adolescence, and with same-sex friends, these are likely to be less harmful than the issues described by adult autistic women in this study and others (Bargiela et al., 2016), this still establishes a pattern that leaves autistic girls in a difficult position. Equally, the decision to abandon a friendship on the assumption that it is irreparable can leave autistic girls vulnerable to social isolation. As research has shown that autistic adolescents are less involved in their classroom networks, and are more likely to feel lonely than their neurotypical counterparts (Bauminger et al., 2003; Locke et al., 2010), further social isolation may add to the social difficulties that autistic girls are already facing.

Interestingly, boys found conflict much easier to manage in their everyday lives than girls, regardless of their diagnostic status. Both autistic and neurotypical boys described resolving issues relatively easily, often by simply apologising and then continuing whatever they had been doing. Their arguments seemed to have less impact on them than on both groups of girls, in line with previous research (MacEvoy & Asher, 2012; Rose, 2002), and this is possibly linked to the type of conflict that the boys were experiencing. While both autistic and



neurotypical boys did experience small amounts of relational conflict, most of their peer problems were based around a concrete event, such as breaking the rules of a game (opposed to girls' arguments, which focussed on social interactions). Once each incident had been resolved, there were no longer-term impacts on the friendship. In contrast, girls fell out with their friends over things such as gossip and social jealousy, as reported in previous research (Parker, Low, Walker, & Gamm, 2005), which may have lasting impacts on reputations and group dynamics. It is, therefore, understandable that this relational conflict would be more distressing to girls than overt conflict is for boys. It also seems to create its own feedback loop for autistic girls, as it has been shown that the more upset someone is, the more difficult they find it to come up with a solution to a problem (Elliott, Sherwin, Harkins, & Marmarosh, 1995; Nezu, 1985). As girls are likely to be more upset by arguing with friends, they will find it harder to find a productive way to resolve the issue, playing into the potential issues of manipulation and isolation discussed above.

### **6.2.3. Factors contributing to friendship and conflict experiences in boys and girls**

During this PhD, I investigated which factors contribute to friendship strength and victimisation experiences in adolescence. From the existing theoretical and empirical literature, I hypothesised that social awareness, self-regulation, and anxiety would all play a role in both the friendships and the peer difficulties of autistic adolescents, in line with existing work with neurotypical young people (e.g., see Crawford & Manassis, 2011; Gottman et al., 1975; La Greca & Lopez, 1998; Lepannen & Hietanen, 2001). Following the results of Chapter Two, which showed significant differences between the social experiences of boys and girls (independent of diagnosis), the individual differences data were analysed separately by gender, given that it was plausible that they would be influenced by different factors. This hypothesis was borne out, as the models for victimisation were notably different for boys and girls. Importantly for autistic girls, social awareness (as measured by total TASIT scores) was a

significant predictor of the level of victimisation girls experienced, along with self-reported anxiety. As autistic girls are naturally more likely to struggle with social awareness, this seems to play into them being bullied more than their neurotypical female peers. It is also natural that anxiety plays a role – it is known that autistic people are likely to have high anxiety (Kim et al., 2000; White et al., 2009), and that anxious young people are more likely to be bullied (Storch & Masia-Warner, 2004).

The direction of influence is less clear than that suggested for social awareness, however. While it is well-established that autistic people have higher anxiety than their neurotypical counterparts (Kim et al., 2000; White et al., 2009), anxiety may not necessarily be a direct consequence of their autism. Rather, many young autistic people have described feeling anxious because of how other people react to them and because of the sensory challenges of the environments in which they find themselves (Crane et al., 2017; Steward, 2013). This theme also emerged during interviews with autistic girls in the research presented in this thesis, with the girls describing worrying about “getting it wrong” socially; reports that were corroborated by their high scores on the SCAS anxiety questionnaire. It is, arguably, natural for autistic girls to have developed anxiety, as by adolescence they have years of experience of making social faux pas, which resulted in them being teased or rejected by their peers. This is on top of the wider sensory and behavioural challenges that can come with being on the autism spectrum (APA, 2013). Therefore, while this study cannot conclusively pin down the direction of the relationships between autism, anxiety, and bullying for autistic girls, it nevertheless reveals that social competence and social anxiety are key areas for further research and for the development of support.

#### **6.2.4. The nature of autistic women's relationships compared to neurotypical women**

The second study of this PhD examined similar topics to those of the adolescent studies, but in autistic and neurotypical adult women. This group were included to investigate the development of relationships into adulthood for girls on the autism spectrum, which has not previously been considered in academic research. This yielded several important insights.

First, there were many similarities observed between autistic and neurotypical adult women, just as there were similarities between autistic and neurotypical adolescent girls. For example, both groups of women had friends and romantic relationships, similar numbers were employed or in education (although more autistic women were currently unemployed), all women continued to face relational conflict, and all women said that they were more self-assured and had become more satisfied with their relationships as they matured. That romantic relationships become most important in adulthood for autistic women echoes what is known of neurotypical social development, as romantic partners become the key source of support for neurotypical women (and men) in early adulthood (Barry et al., 2009). This was perhaps unsurprising, as there was no reason to assume that this would be any different for autistic women; for example, other research has shown that autistic women value romantic relationships, even if they become abusive (Bargiela et al., 2016; Steward, 2013). This importance, and the similar quality of women's relationships regardless of diagnostic status, is emphasised in the findings from the relationship closeness measure, where it was shown that autistic and neurotypical women who were rating friends and partners, rated those relationships as similarly close.

There were, however, differences between the results of the autistic and neurotypical adult women, both in terms of the quantitative and qualitative results. This was evident in terms of social awareness, as would be expected given the diagnostic criteria for autism, which

emphasises difficulties with social interaction (APA, 2013). There were also significant differences between the groups regarding mental health conditions, with autistic women being more likely to be anxious and depressed; echoing research that has been carried out with autistic adults in general (Kim, 2000). Interestingly, autistic and neurotypical women did not significantly differ in terms of screening for eating disorders, which potentially contrasts with recent research that has suggested links between autism and anorexia (Mandy & Tchanturia, 2015; Westwood et al., 2016). Yet, these studies have examined autistic traits in clinical anorexic populations, rather than looking at eating disorder traits in an autistic population. This asymmetry in the research thus far may explain why, in this PhD, eating disorder rates were similar in autistic and neurotypical women, whereas autistic traits are found at higher rates in anorexic patients. Furthermore, the measure used in this study was a brief screening questionnaire (the SCOFF), and it may be that more nuanced differences between the groups would emerge if using a more detailed set of questions that addressed a broader range of attitudes and behaviours.

The final, and most concerning, difference between the autistic and neurotypical women was their reported level of vulnerability. While both groups described having been subject to sexual assaults and domestic violence, the reports of autistic women were several times more common, and many autistic women had experienced multiple incidents. The high rates of victimisation of autistic women have also been seen in other research (Bargiela et al., 2016). Some self-advocates have written about this vulnerability; what might lead to it, and how to try to avoid it (Hearst, 2015; Steward, 2013). The accounts given in these writings mirror those of the autistic women in this study, who noted difficulties with interpreting the motives of other people towards them, a lack of a wide range of peers to ‘compare notes’ with to assess whether a partner’s behaviours are ‘normal’, and a desire to have a partner that overrides the knowledge that this is a bad relationship (i.e., “it’s better to have someone than

no-one”). These patterns can render autistic women open to manipulation and victimisation, although the present research suggests that this had often lessened over time as they entered positive and stable relationships (most assaults were reported to happen in early adulthood). Some autistic women discussed how they had never been told what was/was not safe or ‘normal’ in romantic relationships. This echoes research showing that autistic adolescents often receive less sex education than neurotypical peers (Sullican & Caterino, 2008). This suggests that girls growing up on the autism spectrum today would benefit from being taught explicitly about relationships (alongside traditional biological sex education), focusing specifically on how to recognise, avoid, and leave situations that could be dangerous.

#### **6.2.5. Comparisons between autistic girls and women**

During this PhD, I also interviewed the parents of autistic girls, and used these data alongside the findings from the interviews with autistic girls and women. The aim of this study was to examine directly how relationships are different at different points (adolescence, early-to-mid adulthood) in their lives, gain parental views on their adolescent daughters’ friendships, and determine whether they have any concerns for their daughters.

One illuminating finding when comparing the results from the interviews of autistic women and girls was that the nature of their relationships was reported to be similar in adolescent and in adulthood. For example, both adult autistic women and autistic girls preferred small numbers of very close friends, rather than having a wider social group (as neurotypical women and girls did); a pattern that is consistent with another study with autistic women (Kanfizer et al., 2017). Autistic women and girls also spoke of having one or two intense friendships. In adulthood, this often included a romantic partner, who became the central relationship, and this meant that relationship breakdown was correspondingly intense. This was one of several challenges to social relationships that common among the autistic women and girls, along with continuing challenges with identifying and managing relational conflict, and

difficulties with social anxiety, which were even more pronounced in autistic women. The ways in which autistic women and girls attempted to manage these conflicts were also similar, although women were more likely to walk away from a relationship they felt had become too difficult, and generally felt as though they were doing so for positive reasons (rather than ‘giving up’, as autistic girls did). This increased self-assurance in ending more casual friendships was a clear qualitative difference between autistic girls and women, and was based on the knowledge that the autistic women had secure relationships on which they could fall back. Autistic girls had not yet developed these secure friendships in the same way, and so did not have this same social self-assurance. For example, autistic women discussed having had friends since high school on whom they knew they could always rely, whereas autistic girls were in the process of forming those secondary-school friendships and may have felt less secure, and had less experience, in managing them.

Another theme identified from comparing the themes from both autistic girls and women was that of camouflaging. Camouflaging is defined in the literature as the use of strategies to attempt to mask autistic behaviours in a bid to appear neurotypical, and therefore to appear more ‘normal’ and socially accepted (Hull et al., 2017). While this is generally seen more strongly in autistic women, and therefore potentially autistic girls (Dean et al., 2017), some autistic adolescent boys have also described wanting someone to “make [them] normal” (Hull et al., 2017). Camouflaging is, however, usually associated with autistic women; both in research (Dean et al., 2017; Lai et al., 2011; Lai et al., 2017) and in autobiographical accounts (Steward, 2013; Hendrickx, 2015). In the current PhD, girls described how they try to watch their peers to see how they should behave to fit in, and older girls reported being aware of the fact that they feel as if they often appear different to the other girls around them. Amongst autistic women, there was a greater degree of self-reflection on these camouflaging behaviours; women spoke about how they had done this more when they were younger, but that the process

of getting a diagnosis had been a relief and had allowed them to act in ways that came more naturally to them (which has also been reported in other research, e.g., Bargiela et al., 2016; Webster & Garvis, 2016). Both autistic girls and women also talked about how their ‘true friends’ were the people they could “be [themselves] with”, further suggesting that they are conscious of having to control how they appear in front of people they know more casually.

Another notable difference between the results of autistic girls and women was their scores on the TASIT, a measure of social awareness. While there were no significant group differences between adolescents in terms of their social awareness scores (Chapter Three), with all adolescents scoring similarly, autistic women scored significantly lower than neurotypical women (Chapter Four). Autistic women and girls, however, scored similarly – with average scores of 41.49 for autistic girls and 45.26 for autistic women (out of a maximum of 64),  $t(44)=2.07$ ,  $p=.05$ ,  $d=.04$  which is important as there were no significant differences in intellectual ability between the two groups,  $t(44)=1.43$ ,  $p=.16$ ,  $d=.07$ . This comparison suggests that autistic girls could reach a ‘ceiling effect’ in adolescence and continue to interpret the social cues of people around them in a similar way into adulthood, while neurotypical girls may continue to develop their social awareness and inference skills in a significant way. This possibility might help to explain why autistic women’s friendships and conflict resolution strategies were in some ways similar to those of autistic girls, although there were also differences in how the women responded to conflict in their relationships. It is also possible, however, that this finding is the result of a cohort effect, and future longitudinal research should attempt to disentangle these two possibilities through directly measuring changes in social awareness and conflict experiences over time.

### **6.3 Contributions to the Field**

The studies presented in this thesis have made several contributions to the field, as the findings outlined above show. My PhD has involved working with participant groups, namely

autistic girls and women, who have previously been underserved in research and whose experiences are not well understood. While autistic females' lived experience needs much more thorough and extensive research to address the current gender imbalance in autism research, the research in this PhD sought to address this knowledge gap with a particular focus on relationships and conflict experiences. There is only one study which has previously carried out mixed-methods research into these topics (Sedgewick et al., 2016), although there have been narrative investigations (Bargiela et al., 2016; Kanfizer et al., 2017) and some earlier quantitative investigations of gender and friendship in autistic adults (Baron-Cohen & Wheelwright, 2003).

The findings of the studies presented in this PhD revealed a wide range of topics and concerns which have not been investigated in the existing literature. They have shown that the social experiences of autistic girls and women are quantitatively and qualitatively different to those of autistic boys and, although this is not addressed here, it is also possible that they might well be different to those of autistic men in many ways, too. That the friendships, relationships, and conflict experiences of autistic women and girls are like those of neurotypical women and girls in many ways is perhaps unsurprising considering that they are often facing similar gendered expectations (Aukett, Ritchie, & Mill, 1988), which are different to those of men, regardless of their diagnostic status.

Whether the impact of these gendered expectations upon autistic women and girls is different to their effects on neurotypical women and girls has not previously been examined. The difficulties with understanding and managing subtle social cues and relational conflicts that were seen in the autistic women and girls are to be expected from the traditional behavioural hallmarks of autism (APA, 2013). However, the ways in which they respond to these difficulties and attempt to ameliorate them, either through asking friends for help and explanations in adolescence, or relying on steady romantic partners as a 'safe base' for



managing other relationships, suggest that autistic women and girls are aware of their difficulties they have and seek to redress them.

The portion of this PhD that sought to elucidate the factors that might contribute to friendship strength and conflict experiences in adolescents further emphasised the gender differences in autism. While no significant predictors were found for friendship strength, the models for victimisation differed notably by gender, which emphasises the importance of study conflict specifically, not just friendships overall, in my PhD. The model for girls emphasised the importance of social awareness and anxiety as well as being autistic in the extent to which girls' reported falling prey to bullies, while the model for boys showed that it was the interaction between autism and anxiety that predicted the level of bullying that they were subjected to.

One of the key contributions to the field of my PhD research is that it combines statistical results with the voice of the participants; giving them the opportunity to explain what those numbers mean to them in their everyday lives. Not only does this PhD illustrate the numerical differences between the participant groups and assess the statistical significance of such differences, but it also offers insight into how people feel about their relationships and the things they experience. In this way, my PhD not only includes the autistic voice which is emphasised by Pellicano, Dinsmore, and Charman (2014), along with autistic scholars such as Damian Milton (Milton et al., 2012), but also addresses community priorities through focussing on questions of gender and suggesting areas for the development of future interventions.

#### **6.4 Theoretical Perspectives**

There are two key theoretical approaches that have been discussed throughout this PhD – that of the Extreme Male Brain theory of Baron-Cohen et al. (2002; 2010), and the social motivation theory of Chevallier et al. (2012). The Extreme Male Brain (EMB) theory is an

explicitly gendered theoretical account of autism which posits that autistic people have ‘masculinised’ brains and behaviours (Auyeung et al., 2009), including in terms of their friendship characteristics (Baron-Cohen & Wheelwright, 2003). The studies presented in this PhD, however, suggest that this is not the case, at least in adolescence: while there were some commonalities between boys and girls on the autism spectrum, there were far more similarities between autistic and neurotypical girls. This finding was especially apparent in the interview data, where girls had the opportunity to talk about their friendships and conflict experiences, and where the clearest overlap in experiences and themes was evident. Although autistic and neurotypical girls reported having different friendships in some ways, and responded to conflict differently, these differences did not mean that autistic girls reacted similarly to autistic boys, as would be expected if autism was an inherently male condition.

This suggests that the EMB theory is not necessarily a useful explanatory model for autism, particularly in terms of adolescent relationships. While it was beyond the scope of this PhD to conduct similar gender comparisons among autistic adults, the similarities between autistic and neurotypical women’s accounts of their social experiences suggest that autism, again, does not automatically mean that someone will have a more ‘masculine’ social profile. A further limitation to the EMB theory is that it is based upon a binary conceptualisation of gender, which seems particularly limited in light of work showing that autistic people are more likely to identify as LGBTQ (lesbian, gay, bisexual, transgender, and queer), as seen in the autistic women in this study (DeWinter, De Graaf, & Begeer, 2017). Interestingly, several parents also reported that their autistic daughters identified as LGBTQ, and often felt that this might protect them from some of the risks of romantic relationships. As I did not have a comparison group of parents of neurotypical girls, it may be that this would also be reported by those parents, although the different prevalence of being LGBTQ in autistic and neurotypical adults suggests that it would not be as common, if mentioned at all. These

individuals do not necessarily fit into a binary model of gender, and yet still have brains that should supposedly be either feminine or masculine (empathising or systematising, respectively), without regard to the reality of the broad spectrums of gender and autistic behaviours upon which people can be positioned. Instead, the findings of this PhD consistently suggest that gender can, at times, ‘override’ autism, not just in qualitative experience but also in behavioural outcomes.

The findings from this PhD also have implications for another prominent theoretical account, the social motivation theory of autism (Chevallier et al., 2012). This theory argues that one of the underlying mechanisms resulting in autistic behaviours is lower levels of social motivation in autistic individuals. The theory posits a cycle of behaviours, starting with low social motivation leading to lower levels of interest in social stimuli and less practice at social interaction, which results in more social faux pas being made, reinforcing that social interactions are difficult and not inherently rewarding. To challenge this account, however, the results reported in my PhD showed that this does not apply fully to autistic girls and women. Both adolescents and adult women talked candidly about their desire for friendships and relationships, and how they were highly motivated to make and maintain these relationships. This desire was reported to the extent that it could lead autistic women to stay in relationships that had become toxic to them, rather than risk becoming socially isolated if they left an abusive partner. While both autistic girls and women had high scores on the SRS-2, suggesting low levels of social motivation on the Social Motivation subscale of the measure, their reports of their lived experiences almost entirely oppose the questionnaire-based results. This may be because the SRS-2 asks more general questions about social behaviours, such as “How often do you feel more comfortable on your own than in a social situation?”, whereas the interviews asked autistic women and girls about their established friendships. While they may place less importance on casual social interactions than their neurotypical counterparts, when it came to

their friendships and relationships, autistic women and girls valued them just as much, if not more, because of the conscious effort they had put into those relationships.

### **6.5 Implications for Research**

One of the most important implications of this PhD for research is the further evidence it provides for behavioural and experiential gender differences in autism. Although anecdotal accounts have long suggested that autistic women are different to autistic men (Hearst, 2015; Hendrickx, 2015), this is the first piece of research to directly address questions about friendships, relationships, and especially, the conflict within those relationships. As these connections with the people around us play such a central role in our development as individuals (Schaffer, 1994) and in our ongoing health and happiness (Antonucci & Akiyama, 1987), accounting for these gender differences in future autism research and practice is critical. Knowing that girls and boys on the autism spectrum have quantitatively and qualitatively different friendships and conflict experiences suggests that future research on social relationships in autism should perhaps be split by gender, as collapsing the two groups is likely to give a false impression of the case for all autistic people. This confusion serves neither autistic boys/men nor autistic girls/women, as both groups will be imperfectly represented, and therefore any supports or interventions developed based on that evidence is unlikely to be as effective as they could otherwise be. Although there is growing evidence that more autistic than neurotypical individuals identify as LGBTQ, as discussed above, and this may confound gender definitions in research, the majority of autistic people still identify with the sex they were assigned at birth, meaning that splitting participants by gender may still be a useful exercise.

The finding that sex/gender can matter more than diagnostic status is central to this PhD research, and I would suggest that this finding arises from the different social expectations that girls are subject to from their early years – just as neurotypical girls are subject to different

expectations and learn different socially acceptable behaviours to neurotypical boys (Eagly et al., 2000). While participants in the adolescent studies did not discuss gendered settings to any great degree (beyond describing taking part in traditionally gendered activities with their friends, such as shopping for girls and football for boys), autistic women did discuss how expectations of motherhood and then interacting with other parents on the school playground impacted on their social lives. Questions such as why and how gender comes to be the more important feature in a situation, and when this happens, are beyond the scope of this PhD, as it would require longitudinal data on social and communication behaviours in a wide range of contexts. It is worth considering, though, whether these differences are present even in early childhood for autistic individuals, where social interactions are more concrete and play-based even for girls (Dunn, 1993), although there is some evidence that these differences are present in pre-school (Hiller, Young, & Weber, 2016). It is also worth considering whether these difficulties then intensify later in response to the more complex social demands of adolescence, and whether they then stabilise or continue to develop into adulthood.

Following from that point, my research has significant implications for practice, suggesting that autistic girls need different social supports to autistic boys, and that autistic women may need additional social supports to neurotypical women. While there are many similarities by gender, to the point where it can be claimed that in some specific areas gender is more important than diagnostic status, there were also a range of vulnerabilities of females on the autism spectrum that warrant targeted support. The revelation of the frequency and severity of autistic women's victimization shows that explicit teaching about these issues is desperately needed to protect the next generation of autistic girls and young women. Likewise, teaching should concentrate on how to recognise and respond to relational aggression; to more effectively manage it and to prevent the breakdown of friendships, as arguments can flare up in the most secure of relationships. The tendency of autistic girls to walk away from a

friendship without attempting to resolve the issue may leave them vulnerable to the social isolation that autistic women were so anxious to avoid; developing these skills in adolescence may also build confidence into adulthood. Interventions that target the development of skills to manage relational conflict are essential, as these strategies will help autistic girls to make and maintain friendships, not just during secondary school, but throughout their lives. Indeed, the adult data presented in Chapter Four highlights how the same issues are still affecting adult autistic women into their thirties.

It is notable that, in the adolescent study of this PhD (Chapter Two), although autistic girls scored lower on the ADOS-2 (lesser autism severity), their parents rated them more highly on the SRS-2 (greater autism severity). This apparent discrepancy has been discussed earlier in this Chapter, but it is worth raising here as a point on the use of the ADOS-2 with cognitively-able girls who are being assessed for an autism diagnosis. While the ADOS is considered to be a ‘gold-standard’ diagnostic tool, it was developed with an 87% male sample (Lord et al., 2012), and therefore could be seen as having an implicit bias against detecting girls and women. If researchers exclude clinically-diagnosed autistic girls from their studies on the basis of scoring below cut-off on the ADOS, they are likely to be excluding individuals with ‘atypical’ presentations (which may represent typical female presentations), potentially further entrenching stereotypical views of what the autism spectrum is and what being autistic can mean. It may be that, in the future, a gender-informed version of the ADOS should be developed, to account for the growing body of research that shows that there are behavioural differences between autistic boys and girls, but that these are not currently captured by diagnostic tools in a reliable manner. Based on my findings, I would suggest that starting with the responses to the Friends, Relationships and Marriage activity could be useful, as this is an area where autistic girls are good at saying ‘the right thing’, but often display difficulties with deeper understanding or putting this into practice when pushed.

As a personal reflection, I frequently noticed that autistic girls, once they knew that they were being filmed for the ADOS, ‘performed’ for the camera, acting as neurotypical as they could. Once we finished the ADOS and I told them that the camera was off, repetitive behaviours such as hair twisting would return, or they would start to tell me about special interests, which they had carefully avoided mentioning for the past hour. That cognitively able and verbally fluent autistic girls, all of whom had clinical diagnoses, can score as low as two on the ADOS suggests that it is not especially sensitive to their presentation, and that this needs redressing in some way. It is also the case that while parents rated their autistic daughters as having more autistic behaviours than autistic boys on the SRS-2 (see Chapter Two), this may be because they were themselves judging them against gendered expectations. These expectations mean that girls who do not conform to traditional ideas of femininity stand out more than boys who display the same behaviours, and so are judged more harshly for the behaviours which they do display. Adapting diagnostic and screening tools to account for gender differences would not only benefit research in terms of making participant groups and results more representative, but would also, and most significantly, mean a more straightforward diagnostic process for future generations of autistic girls.

Another key implication for research arising from this PhD was that mental health issues, particularly anxiety and depression, were more common in autistic (relative to neurotypical) women, and anxiety was much higher in autistic girls than all other groups. This research extends a wealth of research showing that anxiety is heightened in autistic individuals (Kim, 2000; White et al., 2009) and suggests that it may be particularly apparent in cognitively able autistic girls and women. Future research into social relationships should take this into account, by measuring and controlling for social anxiety, which was reported to be high in the autistic women in this study, and has known negative effects on relationships (Crawford & Manassis, 2011; Vernberg et al., 1992). Beyond the realm of social research, accounting for

anxiety should be good practice, as this can be linked to sensory sensitivities (Neil et al., 2016), and these may affect how an autistic participant is able to engage with an experimenter. The effect of anxiety on engagement with research may have a disproportionate effect on autistic girls – for example, several autistic girls refused to be filmed (and two refused even audio recording) for the ADOS in this study, while no autistic boys expressed any concerns. If someone is anxious because of the testing environment, they can struggle to concentrate and perform to the best of their ability, meaning that researchers may end up with an incomplete understanding of the concepts they are investigating. While this is not specific to autistic girls and women, as sensory sensitivities are thought to be common in both genders (although no research has tested whether there are gender differences in their prevalence), the generally higher level of anxiety for girls and women may mean that they are more affected under these conditions.

### **6.6 Strengths and limitations of research**

This PhD had several strengths. It focused on an underserved population (autistic girls and women), utilised multiple informants (adolescents, adult women, and parents), carried out direct gender- and age-based comparisons and has made significant contributions to the research, as discussed above. For example, it has shown that the relationships of autistic girls are qualitatively different to those of autistic boys, that there are similarities to the social experiences of neurotypical girls, that these similarities can also be seen in adult autistic and neurotypical women, where they continue to have a significant impact on the lived experience of autistic women, and that parents have concerns about their autistic daughter's futures which echo some of the difficulties adult autistic women reported experiencing.

Nevertheless, there were also some limitations to the studies presented in this PhD, some of which have already been highlighted in each Chapter. First, it is unclear whether the findings of this research would generalise to less cognitively able individuals, who represent



another under-represented population in autism research (Banach et al., 2009). The decision was taken to focus this PhD on verbally fluent and cognitively able individuals, as these are the girls and women who are most likely to struggle getting a diagnosis, and who are most likely to struggle with the high social expectations of their peers who assume that they are neurotypical. Sedgewick et al. (2016) carried out similar, but less extensive, investigations with girls who had mild to moderate intellectual difficulties, and the results of that study were in many ways similar to those of this PhD, suggesting that the findings are generalizable beyond the precise group of adolescents who took part.

Second, it is worth noting that the TASIT social awareness measure was not particularly sensitive with the adolescent sample, as although there was a pattern to the results (with autistic boys scoring lowest, then autistic girls, then neurotypical boys, then neurotypical girls scoring highest), these differences did not reach statistical significance. That the TASIT was highly effective at distinguishing between autistic and neurotypical women, however, suggests that social awareness skill may reach a ceiling in adolescence in autistic individuals, and then not progress much further into adulthood, whereas the further years of social experience result in higher scores in adult neurotypical women. It may be that these potentially subtle differences only become apparent in early adulthood in cognitively able individuals, hence they were not identified by the TASIT in the adolescent sample. There is the possibility that other measures could have revealed more about the different social awareness skills of girls and boys, but many existing measures are static ToM tasks such as the 'Reading the Mind in the Eyes' (Baron-Cohen, et al., 1997) test, or tests which rely on high levels of reading and verbal ability such as 'Strange Stories' (Happé, 1994). The TASIT was chosen as a more naturalistic and ecologically valid social awareness measure than these, as it uses videos of multiple people interacting, which is more like real-world social interactions than pictures of eyes or written stories. It is challenging to choose a measure to assess ToM in adolescence and adulthood, as

it is difficult to recreate real-life situations which can then be reliably scored and there are also few ToM tasks which have validated norms against which to compare the results of autistic participants.

Third, the inclusion of individuals with co-occurring diagnoses (rather than just those with so-called ‘pure’ autism) may have had an impact on the findings of this PhD, as amongst autistic adolescents ADHD was more common than in neurotypical adolescents, and anxiety and depression were more prevalent in autistic than neurotypical women. As discussed in Chapter One, these conditions can have an impact on an individual’s relationships and behaviours (Frankel & Feinberg, 2002; Crawford & Manassis, 2011), and so it may be that they have in some way confounded the results. The fact that these conditions are often co-occurring, however, means that participants with multiple diagnoses should be included in the sample. There are significant individual differences amongst autistic people in terms of the extent to which they are affected by anxiety, attention difficulties, and sensory sensitivities. It is also the case that the nature of individual’s ‘autism’ is likely to at least in part be a consequence of their developmental histories and social and environmental context – as the interviews with adult women have clearly shown – rather than necessarily being fundamental and biologically-driven problems with aspects such as anxiety or attention. As the range of co-occurring diagnoses reflects the natural variation in the experiences of people on the autism spectrum, the inclusion of these participants means that the sample, and results, are more representative of the population as a whole.

## **6.7 Future Directions**

The results of this PhD have highlighted several avenues for future research. First, and most importantly, research to develop targeted support for autistic women and girls is desperately needed to help them to keep themselves safe. While this is true particularly in terms of sexual violence and exploitation, the results of my PhD have also highlighted the need for

specialised support for mental health amongst autistic women and girls. Parental and adult interviews revealed that mental health issues begin in adolescence for autistic girls, but many were unable to receive support until they had reached crisis point. Considering that a degree of 'black-and-white' thinking was evident from how autistic girls responded to conflict with their friends, and what is known about elevated rates of suicide in autistic people (Mayes, Gorman, Hillwig-Garcia, & Syed, 2013), the development of timely and autism-specific mental health supports seems crucial, and would also be invaluable for autistic boys, who also display higher anxiety than their neurotypical counterparts.

A second area for future research is the intersection between autistic and gender/sexuality identities for autistic people. While this was a topic that was discussed by the autistic women in this study, and there was not a male group with which to compare results, the prevalence of non-heteronormative identities and relationships was important to participants, and helped to shape their understanding of the world and of themselves. Current research into autism and gender/sexuality has focussed on prevalence rates (DeWinter et al., 2017) rather than on understanding the impact of these identities, and the relationships that go with them, on autistic people and their everyday lives. To continue to prioritise and respect the autistic voice in research, it will be important to recognise the role that these elements play and to investigate how they relate to each other in either making autistic people stronger and more self-assured, or possibly more open to victimisation.

As mentioned above, I was not able to include an adult male sample for comparison in Chapter Four. This was due to practicalities of recruitment and timekeeping, but would have added a valuable aspect to the overall study. Future work would benefit from making these direct comparisons, as I did with adolescents in Chapter Two, rather than relating findings from women back to previous work on men. This PhD has suggested that it is likely that there are

significant differences in the social experiences of autistic men and women, and this topic is worthy of investigation.

## **6.8 Conclusion**

In conclusion, this PhD sought to examine the friendships, peer relationships, and conflict experiences of autistic girls and women primarily, and to compare these experiences to those of autistic boys and neurotypical girls and women. I adopted an in-depth mixed-methods approach, not prioritising either the quantitative or qualitative portions but instead administering and presenting them alongside each other, as the results from each provide explanatory power for the other in understanding what happens in autistic individuals' everyday social lives. The studies presented here show that autistic girls and women have relationships marked by qualitative differences relative to all other groups at key points across the lifespan – adolescence and early-to-mid adulthood. One particularly significant and novel finding was that there were more similarities between autistic and neurotypical girls and women than there were between autistic boys and girls, a pattern that is worthy of future investigation in an adult sample. This is consistent with emerging work on autism in females (Bargiela et al., 2016; Lai et al., 2016; Sedgewick et al., 2015), which suggests that there are distinct experiences associated with being female and autistic that warrant specific support. Such support would allow autistic women and girls to engage fully with the social world around them, without having to camouflage their needs and difficulties, and without fear of victimisation.

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