Young offenders and Restorative Justice: Language abilities, rates of recidivism and severity of crime.

A thesis submitted to the University of Manchester for the degree of Doctor of Philosophy in the Faculty of Biology, Medicine and Health

2018

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<th>Description</th>
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<tbody>
<tr>
<td>ACE</td>
<td>Adverse Childhood Experience</td>
</tr>
<tr>
<td>ADHD</td>
<td>Attention Deficit Hyperactivity Disorder</td>
</tr>
<tr>
<td>AMP</td>
<td>Age Matched Peer</td>
</tr>
<tr>
<td>ASD</td>
<td>Autistic Spectrum Disorder</td>
</tr>
<tr>
<td>ASR</td>
<td>Achenbach Adult Self-Report</td>
</tr>
<tr>
<td>ATM</td>
<td>Asked to move on by the Police</td>
</tr>
<tr>
<td>BHPS</td>
<td>British Household Panel Survey</td>
</tr>
<tr>
<td>BPI</td>
<td>Behaviour Problem Index</td>
</tr>
<tr>
<td>BVPS-II</td>
<td>British Picture Vocabulary Scale – 2nd Edition</td>
</tr>
<tr>
<td>CELF-4</td>
<td>Clinical Evaluation of Language Fundamentals, 4th Edition</td>
</tr>
<tr>
<td>CHAT</td>
<td>Comprehensive Health Assessment Tool</td>
</tr>
<tr>
<td>CD</td>
<td>Conduct Disorder</td>
</tr>
<tr>
<td>CDA</td>
<td>Crime and Disorder Act</td>
</tr>
<tr>
<td>CJS</td>
<td>Criminal Justice Service</td>
</tr>
<tr>
<td>CNLSY</td>
<td>Children of the National Longitudinal Survey of Youth</td>
</tr>
<tr>
<td>CU</td>
<td>Callous Unemotional</td>
</tr>
<tr>
<td>DLD</td>
<td>Developmental Language Disorder</td>
</tr>
<tr>
<td>FS</td>
<td>Formulated Sentences</td>
</tr>
<tr>
<td>FTE</td>
<td>First Time Entrants</td>
</tr>
<tr>
<td>HS</td>
<td>Head Start</td>
</tr>
<tr>
<td>HSIS</td>
<td>Head Start Impact Study</td>
</tr>
<tr>
<td>IQ</td>
<td>Intelligence Quotient</td>
</tr>
<tr>
<td>ICU</td>
<td>Inventory of Callous-Unemotional Traits</td>
</tr>
<tr>
<td>IMD</td>
<td>Index of Multiple Deprivation</td>
</tr>
<tr>
<td>ISSP</td>
<td>Intensive Supervision and Surveillance Programme</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<td>--------------</td>
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<tr>
<td>LI</td>
<td>Language Impairment</td>
</tr>
<tr>
<td>MLS</td>
<td>Manchester Language Study</td>
</tr>
<tr>
<td>OCJS</td>
<td>Offending Crime and Justice Survey</td>
</tr>
<tr>
<td>ODD</td>
<td>Oppositional Defiance Disorder</td>
</tr>
<tr>
<td>PIQ</td>
<td>Performance Intelligence Quotient</td>
</tr>
<tr>
<td>PPVT</td>
<td>Peabody Picture Vocabulary Test</td>
</tr>
<tr>
<td>QCF</td>
<td>Qualifications and Credit Framework</td>
</tr>
<tr>
<td>RJ</td>
<td>Restorative Justice</td>
</tr>
<tr>
<td>RJC</td>
<td>Restorative Justice Conference</td>
</tr>
<tr>
<td>RNR</td>
<td>Risk Need Responsivity</td>
</tr>
<tr>
<td>RO</td>
<td>Referral Order</td>
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<tr>
<td>ROP</td>
<td>Referral Order Panel</td>
</tr>
<tr>
<td>RS</td>
<td>Raw Score</td>
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<tr>
<td>RST</td>
<td>Reintegrative Shaming Theory</td>
</tr>
<tr>
<td>SAS</td>
<td>Stopped and Searched by the Police</td>
</tr>
<tr>
<td>SD</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>SDQ</td>
<td>Strength and Difficulties Questionnaire</td>
</tr>
<tr>
<td>SEBD</td>
<td>Social Emotional and Behavioural Difficulties</td>
</tr>
<tr>
<td>SES</td>
<td>Socio-economic Status</td>
</tr>
<tr>
<td>SLCN</td>
<td>Speech Language and Communication Needs</td>
</tr>
<tr>
<td>SLI</td>
<td>Specific Language Impairment</td>
</tr>
<tr>
<td>SNS</td>
<td>Stopped but not Searched by the Police</td>
</tr>
<tr>
<td>SS</td>
<td>Standard Score</td>
</tr>
<tr>
<td>SUD</td>
<td>Substance Use Disorder</td>
</tr>
<tr>
<td>TD</td>
<td>Typically developing</td>
</tr>
<tr>
<td>TEDS</td>
<td>Twins Early Developmental Study</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
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<tr>
<td>-------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>TLC</td>
<td>Test of Language Competence</td>
</tr>
<tr>
<td>TOAL</td>
<td>Test of Adolescent and Adult Language</td>
</tr>
<tr>
<td>TOWRE</td>
<td>Test of Word Reading Efficiency</td>
</tr>
<tr>
<td>TOWK</td>
<td>Test of Word Knowledge</td>
</tr>
<tr>
<td>TROG</td>
<td>Test for Reception of Grammar</td>
</tr>
<tr>
<td>TWP</td>
<td>Trouble with the Police</td>
</tr>
<tr>
<td>USP</td>
<td>Understanding Spoken Paragraphs</td>
</tr>
<tr>
<td>WASI</td>
<td>The Wechsler Abbreviated Scale of Intelligence</td>
</tr>
<tr>
<td>WCR</td>
<td>Word Classes Receptive</td>
</tr>
<tr>
<td>WISC-IV</td>
<td>Wechsler Intelligence Scale for Children, Fourth UK Edition</td>
</tr>
<tr>
<td>WORD</td>
<td>Wechsler Objective Reading Dimensions</td>
</tr>
<tr>
<td>WRAT-3</td>
<td>Wide Range Achievement Task – Third Edition</td>
</tr>
<tr>
<td>YJB</td>
<td>Youth Justice Board</td>
</tr>
<tr>
<td>YJCEA</td>
<td>Youth Justice and Criminal Evidence Act</td>
</tr>
<tr>
<td>YJS</td>
<td>Youth Justice Service</td>
</tr>
<tr>
<td>YOP</td>
<td>Youth Offender Panel</td>
</tr>
<tr>
<td>YOT</td>
<td>Youth Offending Team</td>
</tr>
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</table>
Abstract

A PhD thesis submitted to the University of Manchester for the Faculty of Biology, Medicine and Health by Maxine Winstanley, September 2018.

There is much consistency in the research suggesting a disproportionately high prevalence of Developmental Language Disorder (DLD) amongst young offenders. First time entrants to the Youth Justice Service (YJS), however, have yet to be considered. In recent years there has been a shift towards the use of restorative justice (RJ) in response to low level youth crime. Although there is speculation pertaining to the impact of DLD on RJ processes, the subject has yet to be empirically tested. Despite the prevalence rate of unidentified DLD in the YJS, there is a paucity of research considering the crime outcomes of young adults with identified DLD.

A range of methods have been used in the studies included in this thesis, including secondary analysis on a longitudinal clinical cohort and survival analysis on novel data. The first two studies contained in this thesis relate to the longitudinal outcomes of young adults with DLD. They suggest that young adults with identified DLD, who have received early targeted intervention, have less adversarial contact with their local police and youth offending service than age matched peers. The participants also reported receiving increased levels of support from others, namely their parents, with tasks in early adulthood.

The following two studies comprise of novel data collected to profile the psycholinguistic and socioemotional characteristics of young offenders, with and without, DLD and detail gender differences. Additionally, this thesis contains the first study to examine the predictive utility of DLD for reoffending and links with crime severity. Survival analysis indicated that the absolute risk of reoffending within a year of the young person’s court order was significantly higher for the youths with unidentified DLD compared to the youths without DLD. Cox proportional hazards regression confirmed this risk persisted even when covariates, delineated by the research as being influential, were added to the model.

The findings of this PhD provide support for the early identification and intervention for children with DLD. They also provide an important contribution to the risk assessment processes and methods of rehabilitation in the youth justice service. Directions for future research and potential improvements to RJ processes are discussed.
Declaration

This thesis is my own work and no portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.
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Acknowledgements

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About this thesis: Focus and Form

This thesis focuses on issues related to youth, language abilities and social adjustment, in particular offending behaviours. The body of work involves both secondary analyses of an existing cohort and first-time original data collection and analyses. Secondary analyses involved data from the Manchester Language Study (Conti-Ramsden & Botting, 1999; Conti-Ramsden, Crutchley, & Botting, 1997), a well-documented cohort of individuals with identified developmental language disorders (DLD) who received intensive intervention in language units in childhood. Two specific areas were examined: a) police-initiated contact and substance use outcomes and b) financial capability and functional financial literacy in these young adults with a history of identified developmental language disorders. In contrast, the new data collected and analysed focused on youth offenders. There is now substantial literature demonstrating that a disproportionate number of young people who come into contact with youth justice services evidence unidentified language difficulties. These young people, therefore, have received little or no professional support for their language and communication needs. Two studies were undertaken with first time youth offenders: a) examining if unidentified DLD was associated with higher rates of recidivism and crime severity and b) detailing associations among language abilities, literacy, alexithymia, internalising, and externalising disorders in young offenders. Additionally, the prevalence of unidentified DLD in young female offenders was considered.

The thesis comprises 6 chapters. The first chapter is a broad introduction to the research area and background to the studies. This chapter is organised into six sections. First, research pertaining to the language abilities of young offenders is summarised including current knowledge regarding gender, associations with offending severity, associations with literacy, and the ability of youth justice staff to recognise language difficulties in young offenders. Second, current knowledge
pertaining to crime-related long-term outcomes for young people with identified developmental language disorder is evaluated. Third, the relationship between language and behavioural-emotional functioning is investigated with considerations given to callous and unemotional traits and alexithymia. This is followed by a fourth section examining risk and protective factors related to offending and a further section pertaining to current methods of dealing with young offenders. This considers the methods, as well as the political context and theory which underpins the strategies currently in use to deal with youth offending in England and Wales. The introduction concludes with a summary of the observations regarding the current gaps in research which provide the rationale for the studies undertaken.

The introduction chapter is followed by four chapters, each involving a self-contained study written in journal format. The first two chapters comprise two papers that have been published, chapter three includes a paper that has been submitted and is currently under review, and chapter four contains a paper that is being prepared for journal submission. The presentation and reference style of the published manuscripts have been altered in the interest of consistency with other chapters in the thesis. The significance of the research and its implications are discussed in the concluding chapter, chapter six. All references including those from published work, are located in their entirety in one reference section. The Appendices include detail pertaining to the dissemination of the work presented in this thesis as well as work undertaken in the partner agencies.
Chapter 1: Introduction

1.1 Language abilities of young offenders

The primary focus of this thesis is young people who have difficulties with language. Children and young people can experience problems with language for many reasons, they can be secondary to other neurobiological disorders such as autism, hearing impairment or learning difficulties, or they can be the child’s primary need. Developmental Language Disorder (DLD) is a term that refers to individuals whose significant language impairments are not accounted for by any physical, cognitive or neurological cause (Bishop et al., 2016; Durkin & Conti-Ramsden, 2010). Although these difficulties are first discernible in childhood, longitudinal studies have highlighted that they remain into adolescence and adulthood (Clegg, Hollis, Mawhood, & Rutter, 2005; Conti-Ramsden, St Clair, Pickles & Durkin, 2012; Johnson et al., 1999; St Clair, Pickles, Durkin, & Conti-Ramsden, 2011).

Historically, and more recently, different diagnostic terminology has been used to describe these children including, specific language impairment (SLI), language impairment (LI), speech, language and communication needs (SLCN) and DLD. In line with current recommendations, following a Delphi consensus study focusing on characteristics, diagnosis and terminology in this area (Bishop et al., 2016; 2017) this thesis will use the term DLD throughout and retain it when reviewing background literature. The current estimated prevalence of DLD, in the UK, is 7% to 10% (Norbury et al., 2016; Tomblin, Records, & Zhang, 1996). Not all children, however, are identified by professionals and therefore do not receive the services deemed necessary to aid amelioration of their difficulties. The language weaknesses for some children, who have been able to manage in a supportive primary school setting, may only become evident when they are confronted with the more complex linguistic demands of a secondary school (Nippold, 2004). Thus, Nippold (2004) estimated that 10% of adolescents’ evidence language difficulties that impact upon their abilities.
Aside from severe cases, adolescents with DLD are less easy to identify, often relying on facilitative strategies to mask their difficulties (Durkin & Conti-Ramsden, 2010). These strategies include a reliance on script knowledge (Snow & Powell, 2008) and maintaining topics of interest (Nippold, 2007). Thus, adolescents with DLD, despite precarious language skills, are able to manage functional, familiar everyday interactions without detection of their difficulties (Durkin & Conti-Ramsden, 2010).

Young people can experience a number of difficulties which may affect their propensity to become involved in crime. The aforementioned ability to ‘get by’ in familiar environments can be lost, for example, when additional pressure is added. Contact with the criminal justice system (CJS) could be considered a pressurised environment. Verbal communication is highly valued in forensic settings as it is the mechanism by which interaction with the justice personnel is conducted. Young people who find themselves in contact with the youth justice system (YJS), whether as a victim or an offender, are faced with challenging linguistic tasks such as keeping up with new terminology, providing a coherent, credible account of events (Snow & Powell, 2005) and involvement in investigative and evidentiary interviewing (Snow, Powell, & Sanger, 2012).

There is now substantial recent literature, originating in the United Kingdom (UK) (Bryan, 2004; Bryan, Freer & Furlong, 2007; Hopkins, Clegg, & Stackhourse, 2018), Australia (Snow & Powell, 2008), New Zealand (Lount, Purdy, & Hand, 2017) and the USA (Sanger, Moore-Brown, Magunson, & Svoboda, 2001) demonstrating an association between language and offending behaviour. Cumulatively this evidence suggests that a disproportionate number of young people who come into contact with the YJS have DLD (Bryan, 2004; Games, Curran, & Porter, 2012). Methodological issues complicate direct comparisons, however even the studies employing conservative measures (Snow & Powell, 2011) report high rates.
Research in the UK has considered a variety of samples including incarcerated individuals (Bryan et al., 2007; Bryan, Garvani, Gregory, & Kilner, 2015), those on intensive surveillance community court orders (Gregory & Bryan, 2011) and young people on community court orders (Hopkins et al., 2018). When considering the language and communication skills of 58 young people chosen at random in a UK young offender’s institution, Bryan and colleagues (2007) reported scores on standardised tests were indicative of language deficits (Bryan et al., 2007). The mean age of the group was 17 years, yet the mean score achieved on the British Picture Vocabulary Scale (BPVS-II) (Dunn, Dunn, Whetton, & Burley, 1997), a test of receptive vocabulary, was 11.5 years. No participant gained a score indicative of their chronological age. The authors reported that 46% - 67% scored within the poor or very poor range (that is in the bottom 9% of children) in the four subtests of listening vocabulary and grammar and speaking vocabulary and grammar on the Test of Adolescent and Adult Language (TOAL) (Hammil, Brown, Larson, & Wiederholt, 1994). This suggests a high number of participants would meet the definition of DLD. When the authors considered the extent to which the cohort were performing below average on the TOAL it was found that the figures increased to 66% - 90%. Similar results were found in a sample of young male offenders from justice residences in New Zealand (Lount et al., 2017). The authors reported that 58% of the young offenders, compared to 8% of the control group, scored 1.5 Standard Deviations (SD) below the population and therefore could be described as having a moderate-to-severe DLD. Once again, when the authors considered below average scores they found 87% of the young offenders performed below average on standardised language assessments. This led the authors to propose that the normal language curve for this population is shifted downward (Lount et al., 2017), while Bryan and colleagues postulated that such low levels of language are perceived as the norm by youth justice staff (Bryan et al., 2007). Additional research conducted in the UK by Bryan and colleagues (2015) consisted of a larger sample (n = 118) and employed
sub-scales of the Clinical Evaluation of Language Fundamentals, 4th edition (CELF-4) (Semel, Wiig, & Secord, 2006) (Bryan et al., 2015). They found receptive language more severely affected than expressive language, with 42.4% scoring 1.5 standard deviations (SD) below the mean on a measure of receptive language and 21.2% recording similar scores on measures of expressive language. Just over a third of participants scored 1.5 SD below the mean when the BVPS-II was the measurement of choice (Bryan et al., 2015). Receptive language difficulties are invisible and much more difficult to recognise in everyday interactions. These studies consisted of young people incarcerated or in the secure estate. Since 2009, there has been a steady decline in the number of young people in custody and in March 2017, there was just under 870 children and young people in custody (Ministry of Justice, 2018) at any one time. This represents a reduction of almost 70% from 10 years ago, when there was an average of around 2,900 children and young people in custody (Ministry of Justice, 2018). Therefore, one can assume that this concentration of young people will represent the most prolific and serious offenders.

Studies undertaken in the UK focussing on children serving court orders rather than incarceration continue to report high levels of language difficulties (Games et al., 2012; Gregory & Bryan, 2011; Hopkins et al., 2018). Gregory and Bryan (2011) screened 72 young people serving Intensive Supervision and Surveillance Programmes (ISSP) and found 49 warranted the services of a speech and language therapist by way of communication plans and specialist intervention. This is the most rigorous non-custodial sentence available and usually reserved for prolific offenders who have historically received other community sentences and have usually committed in excess of 10 crimes within a 12-month period (Gregory & Bryan, 2011). These youths are established in their offending trajectory and it is unknown if the high prevalence of DLD is due to a reduced efficacy of earlier interventions.
In a similar vein, a further UK study, focussing on children serving court orders rather than incarceration, reported around 90% of children displayed language difficulties (Games et al., 2012). The studies reviewed here did not include category A prisoners, or a control group, nor did they employ measures pertaining to social skills or participants Intelligence Quotient (IQ). Games and colleagues did, however, report some Wechsler Intelligence Scale for Children – fourth UK edition (WISC-IV) (Wechsler, 2003) information for a small proportion of their participants. This showed a trend for CELF-4 scale score to be at least one standard deviation lower than their Verbal Comprehension Index (Games et al., 2012). Thus, these small preliminary findings indicated that the poor results on language tests could not be explained by IQ.

When addressing these confounds Snow and Powell (2008) reported that Australian young offenders, on community court orders, performed significantly worse than a demographically matched control group on all language and social skill measures, but not on measures of non-verbal IQ. They identified that over 50% of the group presented with clinically significant DLD, which could not be accounted for by non-verbal IQ and they were surpassed by a control group that was a year younger (Snow & Powell, 2008). Furthermore, the authors ruled out socio-economic status (SES) as a mediating factor by utilising a similar SES comparison group. All the participants in the control group in this study, however, reported that they were still in full time education compared to only 18% of the offending group. School is likely to provide an enabling environment for language skills and is a protective factor which will militate against becoming embroiled in crime. This must be considered when interpreting results.

This limitation was addressed by Hopkins and colleagues (2018) who controlled for years of education by matching a sample of young offenders with non-offenders on years of education, social disadvantage and non-verbal IQ. Additionally, this cross-
sectional investigation, of young people on community court orders, considered the complexity of later language development by including a measure of expository discourse. Utilised in academic settings, expository discourse refers to the use of language to convey information (Bliss, 2002) and has been found to elicit greater syntactic complexity than narrative (Berman & Verhoeven, 2002) and conversational (Nippold, Hesketh, Duthie, & Mansfield, 2005) discourse. Binary logistical regression analysis demonstrated that performance on the language measures significantly predicted group status, with log odd ratios ranging from 1.5 to 4.8. The authors reported for every unit increase (indicative of greater ability) in a standardised receptive measure the odds of being placed in the non-offender group increased by 1.5 times. This figure increased to 4.8 times more likely with every unit increase on a measure considering subordination use. The inclusion of a higher language measure yielded a greater prevalence of DLD, with 95% of the young offenders scoring 2 SDs below the population mean on the expository discourse task from the Systematic Analysis of Language Transcripts (SALT; Miller & Chapman, 1985). This is reflective of a group of young people who lack the dexterity to convey complex thoughts efficiently.

A further key linguistic skill acquired in childhood and refined throughout the school years is the ability to form a narrative. Personal narratives comprise approximately 80% of our everyday language (Botting, 2010) and are described as the canary in the coalmine when assessing language abilities (Snow & Powell, 2008) as they simultaneously place numerous demands on a speaker requiring diverse competencies (Wetherell, Botting, & Conti-Ramsden, 2007). Forming a coherent narrative mirrors what is expected of a young offender in a forensic setting as it is the means by which they tell their story to criminal justice personal (Snow et al., 2012) and unfamiliar listeners make sense of what has happened. Proficiency in this area relies, not only, on robust language skills so as to orientate a naïve listener to character’s locations, motives and actions, but also on the integration of different
types of knowledge. Examination of this skill, therefore, is central to assessing the capabilities required in the YJS. Generating a coherent narrative is a complex task requiring linguistic, cognitive and psychosocial skills. It is regarded as more complex than conversation (Nippold, 2007) because less discourse support is on offer (MacLachlan & Chapman, 1988) and there is often an absence of shared knowledge. Therefore, there is pressure on the speaker to provide well-structured semantically and, often complex, syntactically appropriate utterances. This must be done in real-time while taking into account the listener’s perspective, all this information must be integrated into a context relative, comprehensible discourse (Bishop & McDonald, 2009; Nippold 2007). The ability to tell a story requires more than a chronological recitation of facts but the lexical diversity to describe events, feelings and emotions and also the correct use of past or present tense, indication of possession and the use of pronouns, all in a relevant timeline (Worsfold, Mahon, Yuen & Kennedy, 2010).

Furthermore, narration poses organisational challenges to the speaker, as a clear well-developed narrative follows a conventional structure which is guided by a set of seven story grammar elements, appearing in a logical order (Stein & Glenn, 1979). These story grammar elements firstly consist of a setting, which details the time and location and introduces the main characters and an initiating event, consisting of an incident involving a problem or an event. Following this the main characters have an internal response to the event which prompts a plan of action followed by the action to resolve the problem, resulting in the direct consequences of this action and lastly the protagonists’ reactions (Snow & Powell, 2005). Inclusion of all these elements in a story does not guarantee success as even narratives containing them can be difficult to parse if the essential story grammar elements are disordered and ambiguous (Kynan & Westcott, 2004).

Few studies have focussed on narrative abilities, but those that have report no quantitative differences, but significant qualitative differences in the narratives produced between young offenders and controls (Snow & Powell, 2005; 2008). This is
consistent with the literature comparing narrative construction in language impaired populations to typical language developers. Children and adolescents with DLD have been found to produce a narrative comparable in length to that of their peers (Van der Lely, 1997; Wetherell et al., 2007), but lacking in cohesion, disordered in sequence and with important information omitted (Miranda, McCabe, & Bliss, 1998). Authors have suggested that children with DLD, by utilising an increased amount of nonthematic discourse develop a compensation strategy, therefore by ‘saying more’ their difficulties could be masked to the lay person (Miranda et al., 1998; Wetherell et al., 2007).

In a sample of young male offenders completing community-based orders compared with demographically matched non-offending youths, Snow and Powell (2005) measured narrative discourse by asking the youths to “tell the story of what happened” in their own words after being shown a six-frame cartoon stimulus, known as The Flowerpot Story. The authors considered not only the quantity and the quality of the output but also the structural adequacy. Furthermore, the picture stimulus remained in view during the assessment thereby accounting for memory as a confounding factor. The young offenders were found to respond to each picture in turn rather than formulate important extrapolations between characters’ internal feelings and their following actions. Employing such a strategy is likely to result in relational incoherence as ideas are not connected, thus creating difficulties for the listener to determine any conceptual relationships. Findings indicated that the significant qualitative difference related to three main areas of Stein and Glenn’s (1979) framework, the plan, direct consequences and the resolution. Thus, the young offenders’ performance on the narrative tasks yielded results suggestive of an inability to explain thoughts, interpret motives and identify elements serving as precursors to the resolution of the story. Such inadequate narrative skills may lead the young person to give one-word stunted replies, thus providing an insufficient story leaving the listener little option but to fill the gaps themselves potentially leading to erroneous
assumptions. This indeed appears to be the case in studies examining policies to deal with young offenders, such as Restorative Justice Conferences (Bolitho, 2012; Van Camp & Wemmers, 2013).

Wainryb, Komolova and Florsheim, (2010) provided further support that young male offenders provide incoherent narratives, presented in such a way, that they are difficult to parse. The authors utilised Bruner’s (1986), landscape of action (facts of what happened) and landscape of consciousness (thoughts and feelings of those involved) template, to examine the organizational patterns of the narratives provided by a group of young violent male offenders compared with controls. Findings indicated that the offenders produced less reflective narratives and the authors encountered a dearth of landscape of consciousness references in the offenders’ narratives. In contrast to controls the young offenders, when describing to a naive listener a time when they had caused harm to another person, included significantly less references to the victim’s emotions (Wainryb et al., 2010). The inclusion of evaluative comments allows for the mental experiences of the protagonists to be embedded in the story therefore the listener can comprehend the motives of others.

Despite sample variation and distinct measures and cut off points employed to delineate DLD one striking similarity among the studies reviewed in this section is that these difficulties have previously gone undetected (Games et al., 2012). This implies that, as a group, young people at the receiving end of youth justice are not generally regarded as being vulnerable to language and communication difficulties by youth justice personnel. Research thus far in the UK has involved either relatively small numbers or few potentially confounding variables. The research in this thesis aims to address this gap. Specifically, the point prevalence of DLD is examined in a sample of first-time young offenders attending community youth offending services in the North West of England (Study 3).
1.1.1 Female young offenders

There is a dearth of research on language and offending in young female offenders. It is known that female adolescents with conduct disorder are more vulnerable to a range of negative outcomes including teenage pregnancy and long term physical and mental health problems (Odgers et al., 2008). Studies involving female participants, language and offending have been few in number thus research has yet to fully determine the prevalence of DLD in female offenders in the UK. Reasons for this include, but are not limited to, the over representation of males both in the DLD prevalence data (Bishop, 1997) and offending data (Ministry of Justice, 2018). Additionally, male adolescents are more likely than female adolescents to meet diagnostic criteria for conduct disorder or commit violent crime (Moffitt & Caspi, 2001). Language delays have also been documented to be a better predictor of later criminal involvement for males rather than females (Stattin & Klackenberg-Larsson, 1993). This is reflected in the current body of research pertaining to the language skills of young offenders, which consists mainly of male participants. Notable exceptions to this include studies from Sanger and colleagues (2000; 2001 & 2003) in the US and Snow and colleagues in Australia (Snow, Woodward, Mathis & Powell, 2016). When conducting a cross sectional study of the language, emotion recognition and mental health of young offenders, Snow and colleagues considered 15 females and found that 27% met the author’s definition of DLD. This meant the females had to score two standard deviations below the mean on the CELF-4 (Semel, Wiig, & Secord, 2006) core language and two subscales of the Test of Language Competence – Expanded (TLC-E; Wiig & Secord, 1989). These results reinforce evidence from studies conducted by Sanger and colleagues who found 22% of a sample of incarcerated females, with a mean age of 16 years, scored at least 1.3 standard deviations below the mean on the Clinical Evaluation of Language Fundamentals, 3rd Edition (CELF-3; Semel & Secord, 2000). Such scores, the authors claim, would qualify the participants for attention from professionals such as speech and language therapists (Sanger,
Creswell, Dworak, & Schultz, 2000). When considering a more comprehensive battery the same authors found that 13 participants (19%) in the sample performed at least 1.3 standard deviations below the mean on both the CELF-3 and the adolescent word test (WORD Test; Zachman, Huisingh, Barrett, Orman, & Blagden 1989). Results indicated that the girls were unable to provide synonyms for words such as penalty and justify and could not adequately define terms such as priority, competent, caution and flammable (Sanger et al., 2001). Semi-structured interviews with the sample revealed poor school experiences and negative self-impressions (Sanger, Moore-Brown, Montgomery, Rezac, & Keller, 2003). However, the evidence is by no means consistent with regard to language abilities, gender and offending. It is important to note that other studies that have included a subset of females have found no gender differences in mean language scores (Blanton & Dagenais, 2007). In general, the number of females included in studies has been small and the findings have been flagged as preliminary or they have been so small that the data on females has been put together with the data from males (Gregory & Bryan, 2011; Hopkins et al., 2018). The research in this thesis includes, to the best of my knowledge, the largest sample of female first-time offenders in order to provide evidence of the point incidence of DLD in females in forensic contexts (Study 3).

1.1.2 Literacy abilities of young offenders

A significant amount of research has supported the link between early oral language skills and later reading ability (Oakhill & Cain, 2012), with many studies reporting overlaps of oral language and literacy difficulties (Gooch, Hulme, Nash, & Snowling, 2014). Difficulties with reading have been linked with behavioural problems in childhood in both the conduct and hyperactivity domains (Maughan, Pickles, Hagell, Rutter & Yule, 1996; St Clair et al, 2011; Tomblin, Zhang, Buckwalter, & Catts, 2000). It is therefore, surprising that in comparison to the growing literature pertaining to the language abilities of young offenders, relatively few studies have addressed the
prevalence of literacy difficulties in this population. This is important as studies have
indicated that literacy difficulties mediate the association of language difficulties and
behaviour problems (Tomblin et al, 2000). Snowling and colleagues considered the
literacy skills of 91 UK incarcerated young offenders with a mean age of 16. The
authors considered word recognition and non-word reading and found the young
offenders performed at a mean age of 11.3 which was significantly below their
chronological age and significantly below the score of a control group recruited from
local schools. A composite literacy score, derived from combining the spelling and
literacy scores, was utilised as an outcome variable in regression analysis.
Vocabulary scores, as measured by the BPVS, significantly predicted literacy scores
and findings indicated that 43% of the offender group displayed specific reading
difficulties, compared to 8% of the control group. The authors were cautious when
interpreting these results as the prevalence rate in the offender group also fell to 8%
when they considered cognitive abilities outside of the average range (Snowling,
Adams, Bowyer-Crane, & Tobin, 2000). Unfortunately, due to time constraints the
authors were unable to gain a full IQ and only the Block Design and Vocabulary
subtest of the Wechsler Intelligence Scale for Children (WISC-III; Wechsler, 1992)
was conducted.

Pertinent to the research presented in this thesis, Davies and colleagues (2004) found
a discrepancy between the literacy levels of offenders and the demands of the
programmes they were required to attend. When assessing the literacy levels of 473
adult offenders in the probation service the authors found that 57% (270) of the
participants evidenced scores below that of the Level 1 National Standard, which
equates to the competencies on the national curriculum, of an 11-year-old (DfES,
2003). Within this group 17% (80) displayed skills below that of entry level 2, which is
expected of the average 7-year-old. Additionally, following observations and offender
interviews, the authors reported that tutors were not always successful at
differentiating the programme content to match the literacy skills of the offenders they
were trying to engage (Davies, Lewis, Byatt, Purvis, & Cole, 2004). It is possible, therefore, that not all offenders benefited equally from the rehabilitation on offer.

The research pertaining to literacy skills in the offending population needs to be tempered by the fact that young offenders, typically, as a group evidence poor, or irregular school attendance (Hopkins et al., 2018; Snow & Powell, 2008,) and reading experience in the parental home is often impoverished (Rice, Howes, & Connell, 1998). Interviews with 31 young offenders revealed that, other than reading magazines and using emails and texts, 74% only encountered literacy activities at school (Hopkins, Clegg & Stackhouse, 2016). Encouragingly over half of the young people reported that they would like to improve their literacy skills. In this thesis, I include measures of literacy for young offenders in order to provide a more detailed profile of their skills (Study 3).

1.1.3 DLD, offending severity and recidivism

Communication is integral in the initiation and continuation of human relationships (Rubin, Begle, & McDonald, 2012) and adolescence marks a developmental period whereby peer relationships become increasingly influential, over that of the family. One can assume that any interruption with the ability to express your emotions, intentions or opinions and/or understand what others say may impact upon peer relations. This picture is qualified by St Clair and colleagues who found nearly 40% of the adolescents with DLD, in their sample, appeared impaired in their interactions with peers (St Clair et al., 2011), as measured by the teacher reported Strengths and Difficulties Questionnaire (SDQ; Goodman, Meltzer & Bailey, 1998). DLD coupled with a history of interpersonal difficulties may lead to an increase in crime associated with violence due to poor abilities.

Little research exists pertaining to the severity of offending and association with DLD. The limited available research has come from the work of Snow and colleagues in Australia. When considering a sample of 50 young people on community court orders,
no significant association was found, and violent offending was equally distributed among the young offenders irrespective of their language abilities (Snow & Powell, 2008). This study utilised a binary measure of offending type, property versus violent and consisted of offenders who were on community orders and therefore this could have concealed any associations.

When examining language abilities as a function of offending severity with a sample that consisted of incarcerated young people, Snow and Powell (2011) reported that those with higher offending scores performed more poorly on the language measures employed (Snow & Powell, 2011). The group of young offenders who fell into the very high score range for violent offending, scoring above the 75th percentile on the Comier-Lang Crime Index (Quinsey, Harris, Rice, & Cromier, 1998), were likely to have DLD. The authors measured multiple domains of language in an effort to reflect the various range of everyday verbal skills needed for sufficient oral language abilities, including the structural aspect of language and the ability to understand figurative language. The former was measured by gaining a core language score utilising the CELF-4, (Semel et al., 2006), three sub-tests (Ambiguous Sentences, Listening Comprehension: Making Inferences & Figurative Language) of the TLC-E (Wiig & Secord, 1989) were utilised for the latter. Figurative language, a form of pragmatic language, refers to the ability to understand nonliteral meaning and linguistic ambiguity (Paul & Norbury, 2012) and includes areas such as metaphors and idioms. The use of figurative language increases in adolescence as it becomes a popular element of social exchanges between peers (Nippold, 2007) and difficulties in this area could possibly constrict a young person’s ability to engage with others. Furthermore, figurative language is a contributing factor of social cognition skills in adolescents referred for mental health services (Im-Bolter, Cohen & Farnia, 2013). Due to the wide range of language measures used, the authors adopted a conservative definition of DLD. Rather than the widely accepted definition of 1.25 SD below the mean (Tomblin et al., 1997) on standardised tests, the authors only
classified the young people as having DLD if they evidenced scores of 2 SD below the mean on the CELF-4 core language score and at least two of the three sub-tests of the TLC-E. Therefore, the young people had to demonstrate consistently low scores, above what would usually be expected, across multiple domains of language abilities.

Measuring offender risk is increasingly prominent in forensic research due to the implications in determining intervention for young offenders (Cording, Beggs, Christofferson, & Grace, 2015). When delineating risk factors that are found to be predictive of recidivism, two categories are considered: static and dynamic (Andrews & Bonta, 1994). Static factors refer to unalterable aspects, whereas dynamic factors are considered malleable and changeable through treatments (Hannah-Moffat, 2004). The association between gender, with males more likely to reoffend, and prior offending in the recidivism literature is persistent (Gendreau, Little, & Goggin, 1996; Langan & Levin, 2002). A further established variable is age at first offence and studies have demonstrated the younger the offender the less likely they will desist from crime (Gendreau et al., 1996; Stahler et al., 2013). These variables, gender, previous offending and age at first offence are cited as predictive of further reoffending and feature prominently in Risk-Need-Responsivity models (RNR) (Andrews & Bonta, 2010). In contrast, dynamic risk factors, such as lifestyle, substance use (Harrison, 2001; Stahler et al., 2013), and employment (Kruttschnitt, Uggen & Shelton, 2000), are fluid, can change over time and with targeted interventions (Hannah-Moffat, 2015). Also referred to as ‘criminogenic needs’ (Andrews & Bonta, 2010) they are defined as situational and personal traits that are associated with continued offending and are, theoretically, deemed alterable (Andrews & Bonta, 2010). Over recent years an empirical base has developed that delineates their predicative ability above and beyond that of the usual static factors (Hanson & Harris, 2000). A number of dynamic risk factors have been considered and prominent among these is callous-unemotional traits (Frick, Cornell, Barry, Bodin, & Dane, 2003). The literature delineates a distinct group of young people who display
chronic and aggressive conduct problems (Kimonis, Cross, Howard & Donoghue, 2013), characterised by a “lack of remorse and empathy, uncaring behaviours and an inability to express emotion” (Howard, Kimonis, Munoz & Frick, 2012:1237). Collectively these callous-unemotional (CU) traits specify a sub-group of delinquent youth for whom severe outcomes are predicted even after controlling for attention deficit and hyperactivity symptoms, Oppositional Defiance Disorder (ODD) and Conduct Disorder (CD) (Byrd, Loeber, & Pardini, 2011). Although early conduct problems are predictive of later negative outcomes (Frick, Ray, Thornton, & Khan, 2014) the risks increase for the estimated 12 – 50% of youths who additionally present with CU traits (Khan, Frick, Youngstrom, Findling, & Youngstrom, 2012).

Longitudinal evidence suggests that CU is a moderately (Lynam, Caspi, Moffitt, Loeber, & Stouthamer-Loeber, 2007) to highly stable (Mash & Dozois, 2003) construct. This sub-group of delinquent youth are particularly problematic and differ significantly from forensic populations with low CU traits in terms of age of onset of antisocial activity (Pechorro, Nunes, Jimenez, & Hidalgo, 2015) and severity of crime (McMahon et al., 2010).

Further dynamic factors considered include growing up with adversity (Basto-Pereira, Miranda, Ribeiro, & Maia, 2016), self-control (Vettenburg, Brondeel, Gavrey & Pauwels, 2013), substance use (Harrison, 2001; Stahler et al., 2013) and employment status (Kruttschnitt et al., 2000). Most recidivism studies, however, have focussed on adults or young people who have been incarcerated. There is a dearth of research considering young people early in their offending trajectory.

Reading comprehension has been shown to be predictive of recidivism. Following administration of the Wechsler Individual Achievement Test-II (WIAT-II; Wechsler, 2001) with incarcerated youths aged 16 – 19 years, the authors reported that poor reading comprehension was predictive of future offending (Rucklidge, McLean, & Bateup, 2013). When considering the composite scores, and their components, of the
WIAT-II, including reading, mathematics and oral language, only reading comprehension was found to be associated with the reoffending measure. Of the 51 participants in this study, however, all but 4 reoffended preventing the authors from reporting a true binary outcome measure. The authors instead delineated recidivism as seriousness of crime and number of court appearances. Additionally, the authors did not control for number of previous offences and age at first offence.

Much of the literature tries to explore the relationship between reoffending and childhood mental illness such as ODD, ADHD (Sibley et al., 2011) alcohol (Elbogen & Johnson, 2009) and substance use (Cuellar, Markowitz, & Libby, 2004). It has been demonstrated that youths exhibiting these traits reoffend more frequently (Spain, Douglas, Poythress, & Epstein, 2004). However, there lies a gap in the literature as thus far the effect of DLD in the context of adhering to youth custody orders and recidivism has been under-explored. Findings in relation to offense severity are also lacking. This is particularly so for those with limited or no forensic history, who are at the earliest point of contact with the YJS, such as the triage or caution stage. It is important to know to what extent DLD affects reoffending and to what extent they may be at risk of committing more severe offenses in the future. Study 4 in this thesis aims to address this and, to the best of my knowledge, provides the first empirical evidence considering unidentified DLD as a variable with respect to rates of recidivism and crime severity.

1.1.4 Are Youth Justice staff aware of DLD?

Irrespective of whether samples contain incarcerated offenders (Bryan & Gregory, 2013; Snow & Powell, 2011;) or those on community orders (Snow & Powell, 2008) approximately 50% of young people evidence scores on standardised tasks that are indicative of DLD. Such high levels of language limitations across linguistic domains have the potential to compromise the ability to access youth justice services. The Youth Justice Board (YJB), in recognition of this literature, has developed an
assessment in an effort to recognise language, learning or neurological difficulties young people may have as they enter youth justice services. This new screening process entitled ASSET plus, was implemented within the YJS in April 2016. Although a welcomed initiative, the effectiveness could be compromised by a lack of expertise in this area. When evaluating the impact of speech and language therapy intervention with young offenders, Gregory and Bryan (2011) reported that none of the youth justice workers they encountered had prior knowledge around language and communication difficulties. In a survey of youth offending staff (YOS), 89% claimed they were confident in their abilities to identify the language and communication needs of young offenders known to their service (Games et al., 2012). A mismatch of YOS self-perception and the young offenders’ abilities was revealed following clinical assessment of the young offenders’ language abilities. The authors reported nearly 90% of YOS staff underestimated the level of impairment and thus the level of difficulty encountered by the youths. These results are reinforced in a further UK study considering an incarcerated population. In England, young people who are admitted to secure facilities are routinely assessed using the Comprehensive Health Assessment Tool (CHAT; Offender Health Research Network, 2013): a semi-structured assessment designed to screen young people in areas including mental health and neurodisability. Hughes and colleagues (2017) utilised the Test of World Knowledge (TOWK; Wiig & Secord, 1989) to assess language difficulties in a group of 93 young people who had previously been administered the CHAT on admission to a youth offending institution. The authors reported despite 44% of the sample scoring significantly below average on the receptive language measure (a standard score of <84), the CHAT only identified two participants as having receptive difficulties. This is concerning considering 22 participants failed to achieve a standardised score of >77, which is the bottom 6% of the population and highlights the complication of using objective measures (Hughes et al, 2017). There is a danger that language limitations are so prevalent in this population that they become the ‘norm’ and therefore are
overlooked (Bryan et al., 2007). This is not surprising, DLD is often hidden and staff within the YJS have little or no training in this area, therefore the consequences of language limitations are underestimated. Findings such as these demonstrate the need for the routine use of formal tests to correctly identify DLD in a timely manner and are set against a backdrop of perceived benefit from youth justice staff on the inclusion of speech and language therapy services within their team (Gregory & Bryan, 2011; Snow, Bagley, & White, 2018).

Taken together the available research strongly suggests that young offenders, as a group perform poorly on standardised language measures and assessments. This body of knowledge is largely informed by cross sectional studies and has identified young offenders to be at risk for previously undiagnosed DLD. They have, therefore, received little or no attention from professionals who are skilled at intervening with such difficulties. Interestingly, evidence suggests that when children with identified DLD receive support in school their outcomes improve (Durkin, Simkin, Knox, & Conti-Ramsden, 2009). Is this also the case for crime related outcomes?

1.2 Crime related long term outcomes for children with identified DLD

Adolescence is a critical developmental period, peer relationships become consequential (Durkin, 1995; Brendgen et al, 2008), social identities are built (Harter, 2006) and long-term achievements are planned (Steinburg, 2005). Transitioning from childhood to adolescence can present particular challenges and place added demands on communicative abilities. Some individuals are particularly vulnerable to these extra challenges and this can be seen in the field of developmental disabilities. Language ability is a factor in the development of key academic achievements such as literacy and numeracy (Snowling, Adams, Bishop & Stothard, 2001) and for social peer relations (Vallance, Im-Bolter, & Cohen, 1999). It can be anticipated that the cumulative effects of DLD during childhood are likely to affect many other areas of development (Durkin & Conti-Ramsden, 2010). Numerous cross-sectional studies
have advanced our understanding of the needs and difficulties these young people encounter. Adolescents with a history of DLD are at greater risk, than their peers with typical language, of experiencing bullying (Conti-Ramsden & Botting, 2004), social stress (Wadman, Durkin, & Conti-Ramsden, 2011), increased loneliness (Bagwell et al., 2005), forming poor quality friendships (Whitehouse, Watt, Line, & Bishop, 2009) and displaying social, emotional and behavioural difficulties (Durkin & Conti-Ramsden, 2010; St Clair et al., 2011).

Although cross sectional studies provide valuable information, longitudinal data offer the best means of deciphering the relation between language difficulties and psychosocial long-term outcomes including those predictive of offending. A small body of evidence has accumulated focusing on the emerging adulthood period, defined as 18-25 years (Johnson, Beitchman & Brownlie, 2010), and beyond (Clegg et al., 2005), while others have concentrated on the adolescent years (Lindsay & Dockrell, 2012; St Clair et al., 2011). Despite heterogeneity within DLD, a common finding is that the presenting difficulties are not limited to childhood but continue through adolescence and into adulthood. (Beitchman et al., 1996; Durkin & Conti-Ramdsen, 2007; Whitehouse et al., 2009), and impact upon areas one would not directly associate with communication skills.

Despite the documented prevalence of DLD in young people who receive youth justice services, few studies have considered DLD as a potential precursor to predictors of offending. In a longitudinal community sample of youths with and without early childhood speech and language difficulties, the authors reported the rates of substance use disorder (SUD) and/or alcohol consumption did not differ by group status (Beitchman et al., 1999). Within group differences illustrated that a significantly higher number of the substance disordered DLD cohort also met criteria for affective disorder and anti-social personality disorder, suggestive of co-morbidity.
An explanation offered by Beitchman and colleagues, for language abilities being unrelated to the frequency of SUD, was the possible protective factor that DLD offers against anti-social behaviour that usually occurs in groups. Children with language difficulties are often rejected by peers at school (Gertner, Rice, & Hadley, 1994). If adolescents with DLD report higher levels of social isolation this lessens the amount of peer influence that can be exerted upon them. Although plausible, children that are unable to create and negotiate a peer network due to compromised social interaction skills are more likely to associate with people already involved in crime (Quinton, Pickles, Maughan, & Rutter, 1993). Instances of peer rejection, even at moderate levels, continuing for 1–2 years, predict adolescent anti-social involvement (Laird, Jordan, Dodge, Pettit, & Bates, 2001). Young people who cannot rely on language skills for positive socialisation may turn to delinquent behaviour instead to gain social status when language demands exceed their abilities. This coupled with the likelihood that children with DLD may well, by means of being educated in similar environments, form friendships with likeminded peers, one could postulate that they are at increased risk of peer influence that lacks prosocial behaviour (Durkin & Conti-Ramsden, 2010).

Brownlie and colleagues (2004) examined whether children with early speech and language disorder evidenced higher levels of delinquency or aggression at age 19 compared with controls. Self-reported delinquency and aggression symptoms were not related to language impairment. Parent reported scores, however, were higher in the DLD group and this remained even when verbal IQ, demographic and family variables were accounted for (Brownlie et al., 2004). A mismatch in the self-rating, for males, was revealed when the data pertaining to arrests and convictions were considered as they were more prevalent in the DLD than the control group. It is, however, important to consider that this may be due to an inability to evade capture for anti-social behaviour rather than an increased prevalence (Brownlie et al., 2004). This is especially pertinent in this study as, although, the crimes are not detailed they are described as ‘milder forms of antisocial behaviour’. Furthermore, this study
considered parental report of delinquency and aggression in a community sample. Little is known, therefore, of the services received aimed at ameliorating the language difficulties.

Attrition is inherent in longitudinal studies and in these studies, it was significantly more likely to be from the single parent, speech and language disordered group. This has the potential to distort results which could perhaps underestimate the severity of the long-term outcomes reported (Johnson et al., 2010). In longitudinal studies attrition and missed data is usually highest for the more challenged individuals (Atkinson et al., 2015).

Conti-Ramsden and Durkin (2008) reported similar results from a clinical cohort of 120 adolescents with a history of DLD compared to typically developing (TD) controls at age 16 years. When considering if the young person had ever been in trouble, described as with school, with police or with organisations, parental report revealed 22.5% of the DLD group had compared to 15.3% of controls. This difference was not statistically significant. It is plausible that this could have been an under representation as adolescents could have been in trouble but not informed their parents.

The Danish longitudinal study of Mouridsen and Hauschild (2009) included a community cohort of 469 individuals with LI and concurrent data on 2345 controls from the general population matched for gender and age. Individuals, at a mean age of 37.5 years were compared on a range of crime outcome measures. Consistent with other studies males from both groups had significantly more convictions than females. Males from the DLD group had a 3.3% lower conviction rate than control males, although, this difference was not statistically significant (Mouridsen & Hauschild, 2009). There was also no difference in the male groups for age at first conviction, which is a predictor of involvement in crime (see later). This study did not include
details pertaining to the language skills of the comparison group therefore it could have included some individuals with a history of DLD within it.

Of the studies that exist methodology has been varied with regards to design (prospective or retrospective) and sample characteristics. Some studies have focused on identified or clinical cohorts (Clegg et al., 2005; Conti-Ramsden & Durkin, 2008) while others have favoured community samples (Johnson et al., 2010). Furthermore, some authors include only those with receptive language difficulties (Clegg et al., 2005) whereas others include children who exhibit phonological speech disorders. It is extremely rare to find receptive abilities occurring in isolation and they almost always occur with expressive difficulties (Conti-Ramsden & Botting, 1999). In contrast individuals can possess expressive difficulties whilst their comprehension skills remain age appropriate. Therefore, it is the former mix of both difficulties that appear to evidence the least favourable long-term outcomes (Durkin & Conti-Ramsden, 2010) and predict the children most at risk. To the untrained eye these difficulties are difficult to identify and therefore can often be overlooked.

When considering the psychosocial outcomes of males found to have severe receptive DLD in childhood, Clegg and colleagues (2005) found a greater risk of psychiatric impairment, relating to depression and social anxiety, a less favourable employment status, a higher prevalence of bullying (which continued into adulthood) and significantly fewer meaningful relationships than controls or siblings. This study provides credible evidence regarding outcomes. However, it was a small study that adopted a retrospective design in which the comparison group was identified in adulthood rather than followed from childhood, leaving the study vulnerable to cohort effects. Prospective longitudinal studies, of community samples both with, and without, language impairment and periodically assessed over time are best placed to investigate outcomes (Law, Boyle, Harris, Harkness, & Nye, 2000). Evidence from studies that include data from such a prospective control group is important for
determining the strength of associations between DLD and later outcomes. Furthermore, these studies allow for careful consideration of mediators and moderators (Yew & O’Kearney, 2013).

In a meta-analysis Yew and O’Kearney (2013) concluded that for the majority of children living with DLD the raised risk of developing psychological problems is within parameters whereby prevention and early intervention strategies are likely to have substantial benefits. This, however, can only occur if difficulties are identified and children receive the necessary services aimed at ameliorating them. Targeted intervention throughout the child’s life could possibly mediate against the negative effects of DLD diverting the individual away from involvement in crime. Further research is needed to examine offending-related outcomes of individuals whose language difficulties have been identified, and who have received services. Do a disproportionate amount of young people with identified DLD have contact with the police and/or are involved in crime? In this thesis, this issue is addressed via a secondary analysis of the Manchester Language Study cohort, involving young people with a documented history of identified DLD and support (Study 1).

1.3 The relationship between language and behavioural-emotional functioning

Involvement with YJS is often foreshadowed by behavioural and emotional difficulties in childhood and early adolescence. For example, the comorbidity between DLD and behavioural difficulties is now well documented (Cohen, Davine, Horodezky, Lipsett & Isaacson, 1993; Conti-Ramsden & Botting, 2004; Conway et al, 2017; Lindsay, Dockrell, & Strand, 2007). When examining the prevalence of DLD in children exhibiting conduct problems authors have reported similar results to the youth offending literature, with concerns being raised regarding the referral of children to services that target the visible externalising behaviour problems with little
consideration given to language abilities (Cohen et al., 1998) and other aspects of functioning.

It is now well established that children with DLD are at increased risk of experiencing social, emotional and behavioural difficulties (SEBD) (Beitchman et al., 1996; Durkin & Conti-Ramsden, 2010). Longitudinal data, due to its temporal nature, allows for predictive relationships with language to be explored. In a longitudinal study by Beitchman and colleagues (1996), lower scores on expressive and receptive language measures identified the children with the highest probability of internalising and externalising disorders. A recent meta-analysis reported that children with a history of DLD were almost twice as likely to meet the criteria for internalising problem and over twice as likely to meet criteria for an externalising problem than their typically developing peers (Yew & O’Kearney, 2013).

The term SEBD clusters together a complex series of constructs, each investigating distinct areas of functioning (St. Clair et al., 2011). Research has highlighted differing developmental trajectories between areas (St Clair et al., 2011; Lindsay & Dockrell, 2012), and, therefore, there is a need to disentangle the construct so as to disaggregate results. Few studies have considered this longitudinally but of the data that exists a variable temporal pattern is emerging consisting of a decrease in behavioural and emotional problems, from childhood to adolescence, and an increase in social difficulties (St Clair et al., 2011). Lindsay and Dockrell (2012) followed 65 students (8 – 17 years) with DLD and utilised teacher reported SDQ (Goodman, 1994) scores at differing time points. Children scored above the normative sample mean at each time point and, in each category, but fluctuations in each domain both with respect to main effects of time and deviations from the norm were noted. Hyperactivity showed a significant reduction over time levelling at age 16 close to the norm with 4% falling in the clinical range, compared to 46% at 8 years. This decline has been noted in further research (St. Clair et al., 2011). One could infer from such data that
language difficulties may be more closely related to behaviour in the early childhood rather than adolescence, but this data assumes the absence of a criminogenic environment (Snow, Sanger, Caire, Eadie, & Dinslage, 2015). Lindsay and Dockrell, (2012) reported at age 16, 54% of participants evidenced scores in the clinical range in the peer problem sub scale of the SDQ. This is a fivefold increase of that of a normative sample. Parallel work has also concluded with similar results regarding an increase in peer problems (St Clair et al., 2011).

Although there is agreement regarding hyperactivity and peer relations there is less consistency in the findings when conduct problems are the outcome measure. Lindsay and Dockrell (2012) reported that conduct problems rose from age 12 to 16 when 18% of the group evidenced scores in the clinical range, which is double what would be expected in a normative sample. St Clair and colleagues (2011), when considering the trajectory of 234 children who had a history of DLD from 8 to 16 years of age, reported a decline with age for conduct difficulties. Differences in samples and their baseline scores may account for these disparities with a higher baseline reported by Lindsay and Dockrell (2012). Although both studies utilised teacher report, St Clair and colleagues collected self-report and teacher data. Furthermore, in recognition that teacher student relationships can be distal at secondary level it was requested that the teacher with the best knowledge of the pupil complete the questionnaire as compared to the special educational needs co-ordinator which was the case in the Lindsay and Dockrell study. The sample in the St Clair study consisted entirely of children attending language units and therefore receiving targeted intervention consisting of regular speech and language therapy input and specialist teachers (Botting & Conti-Ramsden, 2008), whereas Lindsay and Dockrell delineated only 53% of their sample had a statement of special educational needs. It could be speculated that this may have affected the amount of intervention the children received throughout their schooling, leading to more favourable conduct outcomes in the St Clair study.
The association of reading accuracy appears, thus far, to be confined to measures of hyperactivity and conduct whereas oral language has a complicated relationship with SEBD (St Clair et al., 2011). Evidence highlights pragmatic skills being associated, to varying degrees with the whole construct (Helland & Helland, 2017), especially peer related problems (St Clair et al., 2011), but also behavioural problems (Ketelaars, Cuperus, Jansonius, & Verhoeven, 2010). Pragmatic language has been implicated as a mediator between early social disadvantage and problem behaviour at age 13 (Law, Rush, Clegg, Peters, & Roulstone, 2015). In contrast, the association of early expressive language abilities appears to be more specific to behavioural problems (St Clair et al., 2011). Although further research is needed it is interesting to note that, hyperactivity declines during adolescence for young people who have had their specific needs identified with mixed results reported for conduct.

Joffe and Black (2012) did not focus on a clinical cohort but rather considered the social and emotional functioning of children entering secondary school, who were described by teachers as having low language skills. The findings in this study confirm previous reports that although not all students displayed SEBD the participants displayed greater SEBD than a normative sample. Recall that in the youth offending literature when the results were extended to low levels of language 90% of participants fell into this category on receptive measures (Bryan et al., 2007). Furthermore, consistent with other findings (Botting & Conti-Ramsden, 2000) the authors found little or no association between SEBD and non-verbal IQ (Joffe & Black, 2012).

These longitudinal studies demonstrate that, for children who are identified with DLD in early childhood, difficulties do not abate over time and can be realised as a range of outcomes. DLD is highly heterogeneous, and, therefore groups can present with differing strengths and weaknesses. It may be that some young people with DLD, despite facing language challenges, also possess skills which could be classed as
enablers to offset any negative sequela. Furthermore, the children in these studies differ in relation to the amount and level of intervention they have received to ameliorate these difficulties. It could be speculated that it is not only severity or type of DLD that effects long term results but the support received both educationally and socially that potentially may act as a protective factor against negative outcomes (Durkin & Conti-Ramsden, 2007, Palikara, Lindsay, & Dockrell, 2009).

Ripley and Yuill (2005) found the verbal skills of school-excluded boys (aged 8–16), but not measures of non-verbal IQ, to be significantly impaired in comparison to the skills of a non-excluded control group of the same age. In line with previous research none of the excluded boys had previously been identified as language impaired. Similar results have been found in secondary school children at risk of permanent exclusion (Clegg, Stackhouse, Finch, Murphy, & Nicholls, 2009). Researchers (Cohen et al., 1993) have reported that approximately 50% of young people can have undetected DLD. This was within the context of data collected from young people receiving services for adjustment disorders, including behaviour disturbances. The authors concluded that the psychopathy was possibly secondary to the DLD, but adults had referred on the basis of overt behaviours. This would suggest that children with language difficulties are often under-identified by referring adults (Antoniazzi, Snow, & Dickson-Swift, 2010), and boys who display disruptive behaviour in the classroom are typically defined by teachers as having behaviour problems and their subsequent management plan reflects this (Beitchman et al., 1996). This is concerning as recall that youth offending staff are expected to recognise language difficulties in the young people coming into their service and then refer on to necessary agencies. Typically, children are referred on to services on account of their overt behaviours and the hidden nature of language difficulties is often missed by the untrained eye.
An array of theoretical frameworks have been put forth to explain this aggregate relationship and three main hypotheses have been offered as explanations for the co-occurrence of language difficulties and behavioural-emotional problems. First, the difficulties associated with poor language, such as a failure to understand others or embarrassment at the inability to express oneself, leave those individuals vulnerable to behavioural difficulties. Children may become frustrated and revert to less productive ways of communicating, such as aggression or withdrawal (Brownlie et al., 2004; Cole, Armstrong, & Pemberton, 2010). The expectation, for this hypothesis, is that language difficulties will precede behavioural and emotional difficulties. A key challenge here is that DLD is a “hidden” disorder, therefore there is a possibility that the child who is reluctant to engage with peers, or in class, could be labelled as shy or anxious. Similarly, the child who fails to complete work or follow instructions is at danger of being labelled as having behavioural difficulties, with little consideration given to underlying language difficulties. This has been found in the work of Cohen and colleagues (1993), who found young people are referred to services mainly on the basis of overt presentations. In a similar vein, Sanger and colleagues interviewed incarcerated offenders, the young people divulged that their lack of understanding of verbal and written instructions in the classroom resulted in work avoidance (Sanger et al., 2003). This finding is supported in a recent study conducted in the UK, following semi-structured interviews with young offenders serving court orders, the participants reported their comprehension limitations and perceived lack of help in the classroom meant they often shouted out in class and are likely to feel frustrated (Hopkins et al., 2016). This suggests that multiple episodes of academic failure may result in undesirable behaviour-emotional functioning in the classroom. Conversely, behavioural-emotional difficulties may limit exposure to social interactions and thereby impact upon the opportunities for language development (Carpenter & Drabick, 2011). Third, language and behavioural-emotional difficulties may co-occur due to shared aetiologies or environmental risks (Conway et al., 2017). In all likelihood there will be
a number of contributing factors and moderating variables at the individual, familial and societal level contributing to this complex relationship.

As discussed above, language abilities are known to impact on not only behavioural functioning but also emotional functioning. Further evidence for the latter comes from research on the development of social cognitive reasoning in pre-school and school aged children (Miller, 2009). Social cognition is an umbrella term and refers to the ability to accurately recognise and understand the perceptions and emotions of others from verbal and non-verbal cues (Sharp, Fonagy, & Goodyer, 2008). Often these meanings may have to be discerned by way of inference from others unspoken meaning (Snow & Sanger, 2011). Furthermore, it includes the ability to negotiate (Marton, Abramoff, & Rosenzweig, 2005) and reach mutually favourable resolutions to conflict (Sharp et al., 2008). Research has indicated that children with developmental language disorders demonstrate deficits in social skills (Brinton & Fujiki, 1999, Wadman et al., 2011) and display poor social perspective taking skills (Gillott, Furniss, & Walter, 2004). Research-based studies have illustrated that DLD populations often leave issues unresolved by withdrawing from situations which require conflict to be solved. When examining the negotiation and conflict resolution skills of a group of young children with a diagnosis of DLD, Marton and colleagues (2005) found that these children displayed little competence in this area. When the children found themselves in a situation which required conflict they either withdrew or looked to a third party for help. Similar findings have been reported in studies considering older children. Cohen and colleagues (1998) found children aged 7-14 with DLD who had been referred for psychological services displayed impoverished skills with respect to solving conflict, compared to referred children with typical language (Cohen et al., 1998). Consistent findings have been reported for a slightly older cohort aged 12 to 17, consisting of referred children and demographically matched non-referred children (Im-Bolter et al., 2013). Utilising Selman and colleagues integrated model of social problem solving (Selman, Beardslee, Schultz, Krupa, & Podorefsky, 1986), the
authors found the clinic group performed significantly worse in the areas of identifying and knowing how to overcome potential obstacles and knowing when an interpersonal problem was resolved (Im-Bolter et al., 2013). Furthermore, the authors reported that figurative language was only predictive of social cognitive skills in the clinic group and not the control group, even when structural language, working memory and age were accounted for. The hidden difficulties these children have with higher order language skills may prove to be an added source of difficulty associated with behavioural-emotional problems in this population, which in turn may put these young people at a greater risk of antisocial and offending behaviour. Language abilities and behavioural-emotional functioning appear to be associated in important ways in childhood and young adulthood. Profiling socioemotional abilities of young people who are new to the YJS can be useful for informing and prioritising interventions. Much of the research in this area has concentrated on incarcerated samples. In this thesis study 3 provides novel data on young people who have their first formal contact with youth justice.

1.3.1 Alexithymia and DLD

There is now a small but growing evidence base of an increased prevalence of alexithymia (Sifneos, 1973) among adolescents who display CD. Alexithymia refers to a diminished ability to recognise and interpret emotions, reduced imagination (Manninen et al, 2011) and an externally orientated cognitive style (Nemiah, Freyberger, & Sifneos, 1976). Manninen and colleagues reported a significantly higher prevalence of alexithymia among reform school adolescents when compared to controls. This study consisted of a small sample size and controls were only matched on birth year (Manninen et al., 2011). When considering a specific forensic population, Zimmermann, (2006), compared juvenile offenders with demographically matched non-offenders when investigating the associations of alexithymia and delinquency in male adolescents. Regression analysis revealed that alexithymia alone, as measured
by a self-report questionnaire, was a significant predictor of group membership
(Zimmermann, 2006). Despite further personality and anxiety measures being added
to the model, these did not reach significance. The author reported the best
goodness-of-fit statistic, with an overall correct classification result of 72%, included
only alexithymia and family functioning. This study did not consider the language
abilities of the participants. It is plausible that limitations in vocabulary and a difficulty
putting thoughts into words, both hallmark characteristics of DLD, could account for
the findings. This is especially relevant given the population was juvenile offenders,
who are now known to be vulnerable to high levels of unidentified DLD.

There is evidence to support this conjecture; authors have reported lower verbal
intelligence scores in alexithymic participants (Lamberty & Holt, 1995) and a
significant difficulty in verbally describing emotions (Pandey & Mandal, 1997). Further,
more recent, evidence in support of this is the finding that although emotion
recognition differed between participants with low and high alexithymia scores, this
difference was no longer significant once verbal IQ was considered (Montebarocci,
Surcinelli, Rossi, & Baldaro, 2011). Although these studies provide some evidence for
the possible mediating effects of language in individuals with high alexithymia scores,
they were conducted on typically developed adult populations. There is a possibility
that although scores on alexithymia questionnaires may suggest similarities at the
behavioural level, there could be different root causes within complex populations
such as young offenders.

Despite detailing a presence of alexithymia in 59% of a sample of incarcerated young
offenders, Snow and colleagues found alexithymia was, associated with poor mental
health, but not correlated with language difficulties (Snow et al, 2016). This led the
authors to conclude that alexithymia and DLD are comorbidities rather than correlates
(Snow et al, 2016). This sample, however, included females which could have diluted
the results as they performed better on the language measures.
There is a dearth of empirical research that considers the association between language abilities and alexithymia in a UK context. Study 3 in this thesis provides a profile of socioemotional difficulties of young offenders with and without DLD.

1.4 Risk and protective factors associated with offending

Numerous theories have been offered for the causation of crime. In this section, I will briefly examine key risk and protective factors for involvement in crime. Risk factors can be described as factors that are associated with an increase in the probability of involvement in criminal behaviour. Conversely protective factors decreased the probability of criminal behaviour and offset the adverse effects of risk factors thus providing a buffering effect (Losel & Bender, 2003).

Importantly, the literature details a number of factors that have been recognised as important correlates of offending behaviour, histories that include substance use (Biederman et al., 2008), alcohol misuse (Richardson & Budd, 2003), childhood maltreatment (Caspi et al., 2002), exposure to violence (Darker, Ward, & Caulfield, 2008; Widom & Maxfield, 2001), chronic victimisation (McCart et al., 2005) and low SES (Darker et al., 2008) are common in young offenders. Alcohol and exposure to violence are typically associated with violent crime (Dalteg & Lavender, 1998; Murdoch, Pihl, & Ross, 1990), whereas illicit drug use, especially heroin addiction, is more related to acquisitive crime (Hall, 1996; Sigurdsson & Gudjonsson, 1996; Van Der Zanden, Dijkgraaf, Blanken, Van Ree, & Van Den Brink, 2007).

Many within-child factors are also associated with offending behaviour including problems with self-regulation (Farrington, 1996), attention-deficit hyperactivity disorder (ADHD) (Young et al., 2011) and delayed psychosocial maturity (Baskin-Sommers & Newman, 2014). It has been hypothesised that low self-esteem is associated with criminal behaviour (Donnellan, Trzesniewski, Robins, Moffitt, & Capsi, 2005) in so much as it guides social networks and thus the influences they have on life experiences (Kaplan & Johnson, 2001). Young people who experience many negative
or self-devaluing experiences will withdraw from such experiences and seek out new friendships which serve to restore self-enhancing experiences. These new networks are likely to engage in deviant behaviour (Eitle, Taylor, & Pih, 2010) thus the young person will engage in similar behaviours so as to be rewarded by the peer group and be accepted thus alleviating the earlier negative self-esteem.

Cohort studies report that the probability of youth crime increases after each offence (Farrington, 1996). Research in this area, however, is fairly consistent in reporting an ‘age-crime curve’ (Johnson, Simons & Conger, 2004; Moffitt, 1993; Piquero, Farrington & Blumstein, 2003) whereby crime rates rise in the early teenage years, peak at around 16 -18 years and then begin to decline with age. Psychosocial maturity is considered an enabler for desistence with Monahan, Steinberg and Cauffman (2009) reporting an inverse relationship, as psychosocial maturity increases, offending declines.

The age of initiation of anti-social behaviour has been considered a critical predictor of criminal involvement. Those whose transgressions begin early, operationalised as before 11 – 12 years (Parker & Morton, 2009) are known as the early-starter, and, although they only represent about 5% of all offenders, they are responsible for over half of all crimes (Farrington, Ohlin, & Wilson 1986; Moffitt, 1993). Thus, it can be hypothesised that these early first-time offences can be viewed as transitioning events that can inaugurate a trajectory of crime.

Fewer studies have considered protective factors (Jain, Buka, Subramanian, & Molnar, 2012) despite the suggestion that they are better predictors of positive development than risks are to negative outcomes (Rutter, 1987). Family-level factors have been the focus of many studies with parental support (Kuther & Fisher, 1998), family cohesion (Gorman-Smith & Tolan, 2003) and parental attachment (Lynch & Cicchetti, 1998) shown as important factors to protect against adverse outcomes. Family support has been shown to have a strong effect on young people who suffered
exposure to violence or have been a victim of physical abuse (Jain et al., 2012; Lansford et al., 2006). These factors, however, may not be as prevalent in the adolescent’s life as they spend less time with their parents and more time with peers.

School engagement is a protective factor against offending (Snow & Powell, 2011) and increases the access to pro-social models. Academic achievement has been linked to lower levels of delinquent behaviour (Crossnoe, Erickson, & Dornbusch, 2002). An inverse relationship has also been found between scores on academic tests and violent behaviour (Blum, Ireland, & Blum, 2003) demonstrating young people who succeed in school are less likely to be involved in violent acts.

Extra-curricular activities and meaningful participation have been associated with good mental health outcomes (Bell & Suggs, 1998) as well as having positive friendships in the adolescent years (Crosnoe, 2000). Meaningful activities are a protective factor insomuch as they provide opportunities for exposure to prosocial behaviours. Regression analysis has demonstrated that having positive peers and participating in positive activities acts as a protective factor when predicting group membership among looked after children who don’t offend compared to those that do (Schofield, Biggart, Ward, & Larsson, 2015). Extra-curricular activities and parental responsiveness have been shown as significant predictors for distinguishing offenders from non-offenders (Hart, 2007). Additionally, a caring adult at school was also found to be a significant predictor for the female group (Hart, 2007). Nurturing receptivity and the availability of support may therefore be an important factor in reducing the risk of offending behaviour.

Engagement in offending behaviour is a complex phenomenon influenced by many factors. These include internal factors, such as impulsivity (Farrington, 1996), external factors, such as economic disadvantage (Farnworth, Thornberry, Krohn, & Lizotte, 1994) and environmental factors, such as anti-social peers (Osgood, Wilson, O’Malley, Bachman, & Johnston, 1996). Poverty has been argued as a primary driver
of criminal behaviour (Brown & Males, 2011). Indeed, financial difficulties are associated with stressful life experiences (Evans & English, 2002) and the reverse is also true. Anti-social behaviour is often concentrated in areas of high disadvantage (Sampson, Raudenbush, & Earls, 1997) and it is widely reported that young people from low socio-economic backgrounds are over represented in the youth justice service (Snow & Powell, 2011). Whether this association is direct or indirect, through individual processes, such as an increased exposure to antisocial peers (Cleveland, 2003), or reduced levels of informal social control (Sampson et al., 1997) remains unclear.

Low socio-economic status has also been the focus of studies pertaining to language development (Hart & Risley, 1995; Locke, Ginsburg & Peers, 2002). When considering pre-school children, Locke and colleagues, reported children reared in poverty performed below age expectations on language measures (Locke et al., 2002). Earlier seminal work from Hart and Risley (1995) found children of professional families heard on average 2153 words per hour, considerably more than the 616 that children of parents on welfare benefits heard. This quantitative difference provides, not only a vocabulary advantage, but also increased exposure to syntactic complexity and more broadly increased parent child interaction (Snow & Sanger, 2011). This disadvantage is not limited to the early years, children aged 13 years, from areas of social disadvantage have also been found to lag behind their peers from socially advantaged areas on language measures (Spencer, Clegg, & Stackhouse, 2012).

Managing financially is a prominent issue in the offending literature and a longitudinal study found that as family income increased, externalising problems of children in the household decreased (Dearing, McCartney, & Taylor, 2006). Over the last decade the concept of financial capability has developed and refers to an individual’s ability to take control of, manage and plan their own finances (Taylor, Jenkins, & Saker, 2011).
Although no standard operationalisation of financial capability exists (Remund, 2010; Taylor et al., 2011) it is seen as distinct from material well-being and therefore, low income is not synonymous with low financial capability. Knowledge of taxes, interest rates, sourcing financial services, debt management and budgeting are fundamental for economic decision making. Different terminology has been used in the literature to delineate this skill set including, financial literacy skills, financial management skills, financial competency, financial capability and money management skills (Engel, Bar, Beaton, Green, & Dawson, 2015). Although financial literacy was previously favoured, it has been argued that it is one aspect of a broader construct known as financial capability (Xiao, Chen, & Chen., 2014). Financial literacy refers to an individual’s knowledge of financial concepts (Allmark & Machaczek, 2015), whereas the term financial capability refers to an individual’s ability to manage their own monetary affairs (Atkinson, McKay, Kempson & Collard, 2006). Despite some in the literature using the two terms interchangeably (Engel et al., 2015) others argue the two are distinct but inextricably linked (Atkinson at al., 2006; Lusardi & Mitchell, 2011; Xaio, Chen, & Sun, 2015). Financial capability therefore entails the ability to manage living on the resources available to you and to make appropriate financial decisions (HM Treasury, 2007), it delineates a narrow set of skills that have been found to be a strong predictor of experiencing adverse financial outcomes (Von Stumm, O’Creevy, & Furnham, 2013).

Young adults encounter various financial decisions in life including, the maintenance of a bank account, investing and saving, managing a mobile phone contract and purchasing goods and services (Bernheim, Forni, Gokhale, & Kotlikoff, 2000; Johnson & Sherraden, 2007). Over the last 10 years the financial sector has been subject to little regulation resulting in a variety of financial products offered to consumers (Lusardi & Mitchell, 2014). Young adults are exposed to complex financial products and numerous borrowing facilities exist in modern society, requiring a high degree of
financial responsibility. In addition to traditional bank loans, financial services such as pawn shops and payday loans are now ubiquitous in society (Lursardi & Mitchell, 2011). At the same time following the recession many households have seen real income fall while the cost of living rises (Taylor et al., 2011). Sound financial capability not only allows for improved financial decision making but one could argue it also protects against unscrupulous lenders. Increasing the level of financial capability, particularly amongst the most vulnerable in society has become a target for the UK government (Allmark & Machaczek, 2015). Added benefits include psychological wellbeing (Melhuish, Belsky, & Malin, 2008; Taylor et al., 2011) improved financial behaviour (Hilgert, Hogarth, & Beverly, 2003; Lusardi & Mitchell, 2007) and favourable economic outcomes (Lusardi & Mitchell, 2014).

What do we know about management of finances in young adults with DLD? Evidence on financial capability and functional financial literacy in young adults with DLD is very limited. Conti-Ramsden and Durkin (2008) found that, for adolescents with DLD, parents reported that 74% could manage money, while 94% of parents of typically developing adolescents perceived their offspring as capable in this domain. Note that, at this age (16 years), money management is likely to be more elementary (e.g., dealing with pocket money, income from part-time work) than in early adulthood, a time when young people are dealing with a wider range of self-organisational matters and more factors external to the parental home. In study 2 I examine the financial capability and functional financial literacy of young adults with identified DLD through secondary analyses of the Manchester Language Study cohort. I tested the expectation that those with DLD would find financial management more challenging than would their peers. However, given that their language difficulties had been identified in childhood, I expected young adults with DLD in this cohort to have access to a potentially protective factor, that is, support from family and significant others who would facilitate their everyday financial management.
When considering, in study 4, undiagnosed DLD as a variable with respect to rates of recidivism, well known risk factors associated with offending are also examined and controlled for. Ten variables, based on the literature, are summed to comprise an “adversity score.” The derivation of binary variables allowed for a number of psychosocial adversities to be considered and in their entirety these are, a) current looked after child status, b) not in education, employment or training, c) a police file report that the young person had been reported missing at any time, d) any previous self-harm, e) any official recorded special needs, f) self-reported alcohol use, g) self-reported drug use, h) parents divorced i) no adult in the household in paid employment, and j) any influence in the young person’s life that could be deemed as promoting offending behaviour.

### 1.5 Current methods of dealing with young offenders

Over the years there has been a fluctuation in response to youth offending with dominant ideology of youth justice shifting from punitive measures to a focus on rehabilitation and treatment (Artello, Hayes, Muschert, & Spencer, 2015). This latter approach was lamented at the turn of the millennium with the then Labour government’s 1997 White Paper No More Excuses: A New Approach to Tackling Youth Crime in England and Wales: the 1998 Crime and Disorder Act (CDA) and the 1999 Youth Justice and Criminal Evidence Act. Collectively these acts embodied significant policy changes and the Home Office detailed that the three R’s ‘Restoration, Reintegration and Responsibility” (Home Office, 1997:31) must determine service delivery for youth crime in England and Wales. One of the main strategies by which these acts aimed to achieve the pursuit of responsibilisation was by the use of restorative justice (RJ) interventions.

Defining RJ is controversial (Daly, 2002) as it has ‘no clear-cut definition’ (Dunkel, Horsfield, & Parosanu, 2014:4). Attempts to operationalise RJ for research purposes have led to two schools of thought which can be viewed as practical or theoretical.
The practical definition describes a process that aims to achieve justice by enabling all those involved in an incident addressing the harm caused through communication (Restorative Justice Council, 2011) and collectively determining outcomes (Hoyle & Rosenblatt, 2016). The ‘purest’ definition of this (McCold, 2000: 401) is that provided by Marshall (1996) who describes RJ as “a process whereby all parties with a stake in a particular offence come together to resolve collectively how to deal with the aftermath of the offence and its implications for the future” (Marshall, 1996:37). In England, such dialogic processes are usually referred to as Restorative Justice Conferences (RJC) (Zinsstag, Teunkens, & Pali, 2011). They involve a face-to-face encounter and a facilitator guides a dialogue between an offender and the victim. In practice, however, RJ is often shaped to meet the institutional context, and pragmatically such direct contact between offender and victim is not always welcomed. This leads to an ‘expansionist’ (Clamp & Paterson, 2017) interpretation of RJ whereby practices do not meet the procedural criteria of a dialogic process but are implemented with the intention of reaching the same outcome, that of repairing the harm caused by crime (Bazemore, Walgrave & Wood, 2001). These processes are still labelled as restorative as they attempt to repair harm by other methods (Wigzell & Hough, 2015). They include direct and indirect reparation focussed on instilling in young offenders an awareness of the impact of their actions on the victim (McCold, 2000). The theoretical pathway views RJ as a type of justice (Daly, 2016) comprising of a set of guiding principles (Gavrielides, 2008) including stakeholder empowerment, voluntariness, reintegration and reconciliation (Braithwaite, 2002; Stahlkopf, 2009).

RJ draws on models of mediation and engagement, encompassing pro-social values which focus on collaboration (Snow & Sanger, 2011). In contrast to punitive measures RJ provides a holistic framework for criminal behaviour focussing on the victim as much as the offender and the crime. Described as a theoretically grounded concept (Angel et al., 2014), it responds to the ‘labelling theory of crime” (Schur, 1971) whereby it is postulated that punitive punishments based on segregation have the
likelihood to escalate further crime by increasing involvement with likeminded peers and reducing mainstream activities and with it exposure to pro-social behaviour (Johnson et al., 2004). Theoretical roots of RJ can be found in Braithwaite’s Reintegrative Shaming Theory (RST). He advocated pro-social strategies focussing on repair allowing individuals to make amends, thus rather than creating outcasts, individuals can follow a pathway to restoration (Braithwaite, 1989). This latent recognition that unnecessarily criminalising and incarcerating young people can be damaging has driven youth offending approaches. Diversionary approaches and early intervention are the favoured method of dealing with young people who commit crime in England and Wales. The responsibility for delivering these non-custodial interventions rests with youth offending teams (YOTs).

The concept of RJ has been a significant development in youth justice over the last 20 years, has established itself at a worldwide level and is embedded in youth justice at every level. Within recent years there has been a RJ revolution with significant resources invested in RJ procedures, as the Ministry of Justice release numerous action plans (2012, 2013, 2014) stating its attempt to make RJ available to all. Police forces now utilise ‘Level 1’, or more commonly known as ‘street RJ’ (Association of Chief Police Officers, 2011; Paterson & Clamp, 2012). This is defined as ‘an instant or on-street disposal where police officers or Police Community Support Officers use restorative skills to resolve conflict in the course of their duties’ (Association of Chief Police Officers, 2011:7). The Crime and Courts Act 2012 authorised the use of RJ at the pre-sentence stage and YOTs have been financed to deliver RJ training to all staff allowing for intervention and rehabilitation to be based on these strategies.

The 1998 CDA created YOTs and they remain the main vehicle by which the aims of the youth justice service are delivered (Stahlkopf, 2009). Young people are referred from local constabularies or the courts to their local YOT and can be subject to a number of orders including; An out of court disposal, a reparation order, youth referral
orders or a more intensive supervision and surveillance programme. Furthermore, 2008 saw the publication of the Youth Crime Action Plan (Home Office, 2008) which encouraged the development of youth justice triage for First Time Entrants (FTEs) into the YJS. The model involves young first-time offenders responsible for low level crime, delineated as gravity 1 or 2 offences, referred by the police in an attempt to divert low level offending away from formal youth justice (Bateman, 2012). At the same time, it still allows for young people to be identified and signposted to other services if a need is found. Typically, triage arrangements have a duration of 3-4 hours and involve a young person engaging in restorative interventions such as reparation activities or scripting letters of apology.

Out of court disposals typically involve the young person receiving a youth caution followed by a short voluntary rehabilitation programme. The 1999 Youth Justice and Criminal Evidence Act (YJCEA) signalled the beginning of a shift in youth justice towards the restorative approach and introduced the Youth Offender Panel (YOP). Young people are ordered to attend these panels, based on the family group conferencing model, that consist of YOT staff and trained volunteers. A hallmark of these panels is the involvement of both the young offenders, with their primary caregiver and victims. Despite the desire to involve victims in the process, thus far there appears a hiatus in their involvement. Crawford and Newburn (2003) followed up 1066 YOPs and found only 8% had some form of victim representation and in a recent study including 41 young offenders the authors reported victim presence at 12% of the YOPs. This figure reduced, however, when parent or guardian victims were removed from the data. (Newbury, 2011). All parties present at the panel draw up a contract, and once it is signed by the young person the order is activated, with a 3 – 12 months duration (Earle, Newburn & Crawford, 2002). The young offender is expected to engage by fulfilling the reparation specified (Crawford & Newburn, 2003). This can take many formats from writing a letter, engaging in some voluntary work for a charity of the victim’s choice or meeting the victim face to face for a Restorative
Justice Conference (RJC). Reparation is an important element of a youth referral order (Newbury, 2011) and young people are expected to consider the effects of their crime on victims and the wider community, as well as attending on going appointments with the local YOT for the length of the order.

The Intensive Supervision and Surveillance Programme (ISSP), was introduced by the YJB in 2001 and represents one of the most robust community sentences. It is typically reserved for persistent offenders and designed to tackle criminogenic factors and bring structure to offenders’ lifestyles (Home Office, 2002). First time offenders can be subject to an ISSP if they have committed a crime that would attract a custodial sentence of 14 years or more if they were an adult (Gray, 2013). A young person spends 6 - 12 months on a programme, with the first three months designated as the particularly ‘intensive’ period of supervision. During this period the young person should receive 25 hours of supervised activity or input. As well as core modules such as education and training an important element of any youth justice intervention includes RJ. To satisfy the surveillance element the young person is subject to electronic tagging or voice verification with a curfew attached.

In practice a wide range of interventions are utilised and subsumed under the RJ umbrella. There is a continuum whereby practices are ranked as either fully, mostly or partly restorative (Gray, 2005). This is determined by the extent to which they advocate restoration of relationships between the young offenders and their victims and whether this relationship is distal or involves a face to face encounter. In England, schemes have relied more heavily on the indirect model (Crawford & Newburn, 2003) with the mediator passing messages back and forth rather than the face to face RJC which is favoured in America and Australia (Umbriet & Roberts, 1996). Covering such a broad range of practices there is a danger that RJ becomes an elusive concept meaning “all things to all people” (McCold, 1996). There is general agreement that RJ covers a range of “informal justice practices designed to require offenders to take
responsibility for their wrongdoing and to meet the needs of affected victims and communities” (Strang, 2001:2).

Criminologists are advocating for the face-to-face encounter to be the default position for restoration (Sherman & Strang, 2012). The RJC facilitates direct interactive communication between victim and offender, thus allowing victims to pose specific personal questions to the young person. This differs from the formal characteristics of a court room where the offender is restricted to answering interrogation style questions from legal teams. Therefore, in contrast to a youth court where young offenders say very little, RJ processes are highly conversational (Artello et al., 2015). It is not only the amount of language used that differs but also the style of language. When faced with the victim of your crime emotive language is often utilised (Strang & Sherman, 2009) and RJ is described as “emotionally intense” (Angel et al., 2014). The expansion of RJ policies has occurred alongside a victims’ movement (Robinson & Shapland, 2008) and victims hold the presiding force as they make the ultimate decision as whether an RJC will occur.

The current body of research that has considered restorative justice and recidivism has concentrated on RJC (Daly, Bouhours, Broadhurst, & Loh; Hayes, 2005; Hayes & Daly, 2004; Shapland et al., 2008; Sherman, Strang, Mayo-Wilson, Woods & Ariel, 2015). A recent Campbell Systematic Review (Sherman et al, 2015) included 10 studies comparing reoffending following random assignment to an RJC (within the context of the voluntary nature of RJC). The authors chose an intention-to-treat (ITT) analysis so that, firstly, attrition would not bias the review and, secondly, the results would be reflective of any possible policy introduction. Of the 10 studies included, 9 authors reported less crime post RJC but only one of these was statistically significant. This study consisted of 782 youths and the authors concentrated on first time young offenders aged 14 years and under (McGarrell & Hipple, 2007). They restricted the offence type to relatively minor crimes consisting of, “criminal mischief,
disorderly conduct, theft, shoplifting or battery” (McGarrell & Hipple, 2007:229). Despite only this study showing significant findings the authors of the systematic review utilised a meta-analysis random effects model and reported significant findings with an average effect size of 0.155 standard deviations less repeat offending (Sherman et al, 2015). Additional support for the view that an RJC may be particularly beneficial with young first-time offenders was also demonstrated by Hayes & Daly (2004). In terms of methodological quality, however, a fundamental weakness is the self-selection bias associated with RJC.

In the UK, despite concerted efforts to include victims in an RJC many choose not to attend (Crawford & Burden, 2005). This has led YOTs to carry out distal mediation and adapt the process to fulfil the Government’s mandate that RJ principles should underpin all youth justice disposals (Ministry of Justice, 2012). Despite this continuum, for RJ to be successful, purposeful dialogue, communication and active participation is needed from all parties (Bolitho, 2012). Victims expect to hear a coherent narrative regarding the young person’s wrongdoing (Umbreit, Coates, & Kalani, 1994) and an acknowledgment of harm caused (Van Camp & Wemmers, 2013). Additionally, the young person is expected to take responsibility for their actions (Maxwell & Morris, 2006), understand the consequences of the crime and most importantly offer a sincere apology (Shapland et al., 2004; Sharpe, 2007). Young people have to possess sophisticated oral language competencies (Hayes & Snow, 2013) and sufficient social cognition to engage in perspective taking to satisfy this restorative nature. Young people are expected to create an appropriate, coherent narrative which is commensurate with their internal feelings (Snow & Sanger, 2011). This poses significant challenges to young people in light of the evidence that they demonstrate language skills across multiple domains that fall well below what would be expected from their age and IQ (Snow & Powell, 2011). Such deficits could potentially leave the young offender compromised in their ability to actively engage in restorative processes. Study 4 in this thesis aims to consider the language abilities of a cohort of
young offenders who have been subject to rehabilitative strategies based on restorative justice processes. This allows for the application of this knowledge when contemplating rehabilitation programmes.

1.6 Summary and way forward

This introduction has presented research suggesting that young offenders, as a group, perform poorly on standardised measures and assessments across all domains of language. This body of knowledge is largely informed by cross sectional studies and has identified young offenders to be at risk for previously undiagnosed DLD. The young people have, therefore, received little or no attention from professionals who are skilled at intervening with such difficulties, this is important as evidence suggests when children with identified DLD receive support in school their outcomes improve (Durkin, et al., 2009). Thus, it is important to examine offending-related outcomes of individuals whose language difficulties have been identified, and who have received targeted services. The first study, contained within this thesis, addresses this aim by conducting secondary analysis on data collected for the Manchester Language Study (MLS). The paper examines police-initiated contact, rule-breaking behaviour, aggression and substance use outcomes of young adults with a history of identified developmental language disorders (DLD) versus age matched peers (AMPs). The prediction delineated in this study is that early childhood identification/intervention for DLD reduces engagement with risky behaviour such as substance and alcohol use as well as offending-related behaviours in young adulthood.

Longitudinal evidence pertaining to the long-term outcomes of young adults with a history of identified DLD remains in its infancy. Such studies stand to highlight areas of vulnerability and individuals at increased risk of negative outcomes. One such area pertains to financial capability and functional financial literacy. Individuals who have good financial competence are more likely to display stable financial behaviour.
(Lusardi & Mitchell, 2007), which may in turn act as a protector against economic driven crime. Study 2 of this thesis aims to add to the body of knowledge pertaining to long-term outcomes of young adults with identified DLD. The study involves secondary analyses of the Manchester Language Study cohort in young adulthood. Specifically, the study examined numeracy, financial capability skills and functional financial literacy of young adults with DLD. I expected that young adults with identified DLD would be able to draw support from family and friends to successfully manage their finances.

A construct over represented, and often unrecognised, in youth offending populations is alexithymia. As of yet, studies conducted in the UK with young offenders have not considered the presence of alexithymia. Such findings would be interesting to the youth justice service as alexithymic features, particularly the inability to identify and describe feelings, has the potential to interfere with restorative justice principles. Research originating from Finland, concentrating on young people with behavioural issues, has found associations with alexithymia and self-reported attention problems which suggests that cognitive difficulties may underlie this association (Manninen et al., 2011). Although previous research has highlighted the importance of linguistic ability (Lamberty & Holt, 1995; Pandey & Mandal, 1997) a Japanese study found that participants with behavioural difficulties were significantly more likely to report alexithymia traits irrespective of linguistic ability, particularly in the identifying feelings domain (Nishimura et al., 2009). Further research in a UK cohort pertaining to the prevalence of alexithymia and possible associations with DLD would be of great interest when planning intervention for this vulnerable group. A further key skill deemed necessary to take account of when planning intervention is literacy. Research to date has mostly considered the abilities of people who are incarcerated (Davies et al, 2004; Snowling et al, 2000). However, Hopkins and colleagues (2016) considered the perspective, young offenders on court orders, possessed of their own literacy abilities. The young people reported dissatisfaction and a desire to improve skills. In
the third study reported in this thesis I aim to consider the literacy skills of a group of young offenders who are new to the YJS. Additionally, due to the lack of knowledge in a UK context regarding the prevalence of DLD in female young offenders, study three includes a sample of female offenders and considers their socioemotional needs.

Additionally, this introduction has suggested that implicit in many youth justice interventions is the requirement for good expressive and receptive language abilities. In order for restorative principles to be successful, purposeful dialogue, communication and active participation is needed from all parties (Bolitho, 2012). Victims expect to hear a coherent narrative regarding the young person’s wrongdoing (Umbreit et al., 1994) and an acknowledgment of harm caused (Van Camp & Wemmers, 2013). Additionally, the young person is expected to take responsibility for their actions (Maxwell & Morris, 2006), understand the consequences of the crime and most importantly offer a sincere apology (Shapland et al, 2004; Sharpe, 2007). Young people have to possess sophisticated oral language competencies (Hayes & Snow, 2013) and sufficient social cognition to engage in perspective taking to satisfy this restorative nature. Young people are expected to create an appropriate, coherent narrative which is commensurate with their internal feelings (Snow & Sanger, 2011). This poses significant challenges to young people in light of the evidence that they demonstrate language skills across multiple domains that fall well below what would be expected from their age and IQ (Snow & Powell, 2011). Such deficits could potentially leave the young offender compromised in their ability to actively engage in restorative processes. Current studies delineating undiagnosed DLD in the young offender population have been cross sectional and conducted with samples of young people who are entrenched in the system. Thus far, there is a dearth of research considering first time entrants to the YJS. Despite the potentially heightened relevance of adequate language skills with RJ processes the impact of DLD on reoffending has yet to be empirically considered. The fourth study in this thesis moves the field forward by considering the language abilities of a group of young offenders.
who have no, or little, previous offending. Furthermore, the associations between DLD and reoffending independent of characteristics known to be associated with recidivism are examined. Additionally, crime severity and the association with DLD is considered.
Chapter 2: More or less likely to offend? Young adults with a history of identified Developmental Language Disorders (Study 1).

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The presentation and reference style used for the manuscript has been altered in the interest of consistency with other chapters in this thesis.
2.1 Abstract

Background: There is now substantial literature demonstrating that a disproportionate number of young people who come into contact with youth justice services evidence unidentified language difficulties. These young people, therefore, have received little or no professional input in this area. Conversely, there is a dearth of research pertaining to criminality outcomes among those individuals with identified developmental language disorders who have received such interventions.

Aims: The paper examines police-initiated contact and substance use outcomes of young adults with a history of identified developmental language disorders (DLD) versus age matched peers (AMPs). Additionally, self-reported rule breaking behaviours and aggression are considered. We hypothesise that early identification/intervention reduces engagement with risky behaviour such as substance and alcohol use as well as offending-related behaviours.

Methods & Procedures: Adversarial police-initiated contacts were examined in 84 young adults with a history of DLD and 88 AMPs. Rule-breaking and aggression were evaluated using the Achenbach Adult Self-Report for ages 18-59.

Outcomes & Results: Adults with a history of DLD, who received targeted intervention during their school years, reported less contact with their local police service compared to AMPs at age 24. Comparable proportions of both groups reported current alcohol consumption but group differences were found relating to alcohol use. No group differences in rule breaking behaviours were found but the DLD group was found to have a statistically significant higher raw score on the aggressive behaviour scale.

Conclusions & Implications: There is a need for early identification of children with DLD. Early intervention aimed at ameliorating such difficulties could possibly have distal outcomes in relation to offending.
2.2 What this paper adds:

What is already known on this subject:

A high number of young offenders display language abilities across multiple domains that are well below that of the typical population. Furthermore, these language difficulties have previously gone unrecognised.

What this paper adds:

This study reports evidence that young adults with a history of developmental language disorders, who have received early targeted intervention aimed at ameliorating such difficulties, report less contact with their local police than their age matched peers. We argue that targeted early intervention could possibly mitigate against the negative effects of language difficulties, diverting these individuals away from involvement in crime.

Clinical implications of this study:

The findings of this study underline the importance of timely assessment, early identification, and subsequent targeted intervention for children with DLD.
2.3 Introduction

A substantial body of literature exists demonstrating that a disproportionate number of young people who come into contact with youth justice services (YJS) have developmental language disorders (Bryan et al., 2007, 2015; Lount et al., 2017; Snow & Powell 2005, 2008). Although direct comparisons are complicated by methodological issues, even in the most conservative estimates (Snow & Powell 2011) rates are markedly raised. Children and young people can experience problems with language for many reasons - they can be associated with other neurobiological disorders such as autism, hearing impairment or learning difficulties, or they can be the child’s main area of difficulty. Historically different diagnostic terminology has been used to describe the children in this latter category whose language difficulties are not accounted for by physical, cognitive and/or neurological causes (Durkin & Conti-Ramsden 2010), including language impairment (LI), developmental language disorders (DLD), and specific language impairment (SLI). Longitudinal studies in this area, for example the Manchester Language Study, have also reflected in their publications, the historical changes in terminology used with this population (Conti-Ramsden & Botting, 1999). In line with current recommendations, following a Delphi consensus study focussing on characteristics, diagnosis and terminology in this area (Bishop et al., 2016; Bishop et al., 2017) this paper will use the term DLD throughout and retain it when considering background literature. Although these difficulties are first discernible in childhood, longitudinal studies have highlighted that they persist into adolescence and adulthood (Beitchman et al., 2001, Clegg et al., 2005). The current prevalence of DLD is approximately 7% (Tomblin et al., 1997). However, not all young people are identified by professionals as having language needs and therefore many do not receive intervention or support for their difficulties.
2.3.1 Language abilities and young offenders

Despite sampling variation and distinct measures and cut off points employed to delineate DLD, one striking similarity is that the language difficulties of young people who come into contact with YJS have previously gone undetected (Bryan et al., 2007). This finding is consistent across western countries (Bryan et al., 2015; Sanger et al. 2003; Snow & Powell 2005). In the UK, Bryan and colleagues (2007) reported that scores on standardised tests obtained by 58 young people chosen at random in a UK young offenders’ institution, indicated language deficits. (Bryan et al., 2007). The mean age of the group was 17 years, yet the mean score achieved on the British Picture Vocabulary Scale (BPVS-II) (Dunn et al., 1997), a test of receptive vocabulary, was 11.5 years. No participant gained a score consistent with their chronological age. The authors reported that between 46% and 67% of participants scored within the ‘poor’ or ‘very poor’ range (that is in the lower 9% of the general population) in the four subtests used listening vocabulary, listening grammar, speaking vocabulary and speaking grammar on the Test of Adolescent and Adult Language, (TOAL; Hammil et al., 1994). This suggests a high number of the participants in the study would meet criterion for developmental language disorders. When the authors considered the degree to which the group was performing below average on the TOAL, it was found that the figures increased to between 66% and 90% of participants.

Bryan and colleagues (Bryan et al. 2015) administered sub-scales of the CELF-4 (Semel et al., 2006), to a sample of 118 young offenders. They found receptive language more severely affected than expressive language, with 42% scoring 1.5 standard deviations (SD) below the mean on a measure of receptive language and 21% recording similar low scores on measures of expressive language. Just over a third scored 1.5 SD below the mean when receptive vocabulary abilities were examined using the BPVS-II (Dunn et al., 1997). Receptive language difficulties are often hidden (Durkin & Conti-Ramsden, 2010) and much more difficult to recognise in
everyday interactions as individuals can use context to aid comprehension. Moreover, in a youth justice setting, these receptive difficulties may manifest as rudeness or uncooperativeness. Such behaviours may further disadvantage the young person (Snow et al., 2016).

When comparing the oral language skills and social skills of young offenders placed on community orders against a control sample from local schools, Snow and Powell (2008) reported that the offenders performed significantly worse than the control group on all language and social skill measures, but not on measures of non-verbal IQ. They identified that over 50% of the group presented with clinically significant DLD, which could not be accounted for by non-verbal IQ. Furthermore, the authors ruled out socio-economic status (SES) as a mediating factor by utilising a similar SES comparison group. The recognition that one in two young people displayed DLD was replicated when the authors conducted a cross-sectional study of 100 incarcerated young people (Snow & Powell, 2011).

The primary sentencing disposal for young people in England and Wales who plead guilty is a Referral Order (RO) (Edwards, 2011). This order requires the young person, and their guardian, to attend a Referral Order Panel (ROP) consisting of Youth Offending Team (YOT) staff, community panel members and the victim (should they chose to attend). It is, therefore, paramount that young offenders form a coherent narrative of an incident, with the desired amount of sincerity, so that others can make sense of the surrounding events. Provision of a clear well-constructed narrative is, therefore, a skill needed to aid successful passage through the youth justice system as it allows a young person’s story to be heard (Snow et al., 2012). In a sample of young male offenders completing community-based orders compared with demographically matched non-offending youths, Snow and Powell (2005) measured narrative discourse by asking the youths to “tell the story of what happened” in their own words after being shown a six-frame cartoon stimulus, known as The Flowerpot
Incident. The authors considered not only the quantity and the quality of the output but also structural adequacy in terms of story grammar. The picture stimulus remained in view during the assessment thereby accounting for memory as a confounding factor. The young offenders were found to respond to each picture in turn rather than formulate important extrapolations between characters’ internal feelings and their following actions. The use of such a piecemeal strategy is likely to result in relational incoherence as ideas are not connected, thereby creating difficulties for the listener to determine any conceptual relationships. Thus, the young offenders’ performance on the narrative tasks yielded results suggestive of considerable difficulties explaining thoughts, interpreting motives and identifying elements serving as precursors to the resolution of the story.

The studies detailed thus far have comprised exclusively of male participants. Although fewer authors have considered the language abilities of female offenders, those that have report a higher prevalence of DLD than in the general population (Sanger et al., 2001). In the USA, Sanger and colleagues assessed 67 incarcerated females aged 13-17 years. They reported that 19% of the sample scored 1.3 SDs below the mean on the CELF-3 (Semel & Secord, 2000), therefore meeting the clinical criteria for a diagnosis of DLD (Sanger et al., 2001). In a recent cross-sectional study, considering the language, emotion recognition and mental health of 100 incarcerated young people, the authors reported that DLD was present in 27% of the females in the study (Snow et al., 2016).

When interviewing incarcerated females with a history of DLD, participants revealed experiencing difficulties understanding curricular vocabulary and following directions at school (Sanger et al., 2003). In a similar vein, Hopkins and colleagues (2016) conducted qualitative semi-structured interviews with 31 young people on court orders. Unfortunately, this study did not include any language measures so it was unknown if the participants had DLD. The authors, however, reported that the young
offenders divulged difficulties listening at school, and some described an inability to comprehend large segments of information (Hopkins et al., 2016). It is likely such difficulties would have compromised engagement and motivation in the classroom (Sanger et al., 2000). Left unchecked this can lead to disengagement with education and alliance with similar disconnected peers (Gifford-Smith, Dodge, Dishion, & McCord, 2005). Such findings demonstrate the impact on behaviour that language limitations can exert. Following completion of standardised language tests, researchers have reported that a significant proportion of young people referred to child and adolescent mental health services, have previously undetected DLD (Cohen et al., 1993). The authors concluded that the psychopathology was possibly secondary to the DLD.

Taken together the available research strongly suggests that young offenders, as a group, are likely to have significant language problems that have not been previously diagnosed. They perform poorly on standardised language measures of vocabulary, grammar and narrative. It appears that a proportion of young offenders have unidentified language difficulties and have thus received no professional support for their language difficulties.

2.3.2 Early intervention and potential socioemotional distal beneficial impacts

Head Start (HS) is a public pre-school programme exclusively aimed at disadvantaged families in United States. Original aims were to reduce the educational gap between children reared in poverty and their more affluent peers (Garces, Thomas & Currie, 2002). The theory underpinning the programme lies in the compensatory hypothesis, which posits that the most marginalised, disadvantaged children will benefit the most from targeted early intervention (Sameroff & Chandler, 1975).

The short-term benefits for children participating in HS include improved standardised test results (Karoly et al., 1998), equal to an increase of 0.15 – 0.35 standard
deviations (Ludwig & Philips, 2008), in areas such as receptive vocabulary and phonemic awareness (Barnett & Hustedt, 2005). The Head Start Impact Study (HSIS) (Puma, Bell, Cook, & Heid, 2010) corroborated such findings reporting significant impacts on the cognitive and socioemotional development of participants. The largest impacts were found in language and literacy outcomes as measured by Peabody Picture Vocabulary Test (PPVT; Dunn & Dunn 1997) and the Woodcock-Johnson III letter word identification test (Woodcock, McGrew, & Mather, 2001). The HSIS, however, concluded that programme’s effect attenuated by age 7. It appeared that the results of HS investment were short-lived.

However, recent longitudinal studies (Carneiro & Ginja, 2014; Mckelvey et al., 2015) reported “unexpected” favourable longer-term, distal outcomes in those who had participated in HS in that they demonstrated fewer parent-child dysfunctional interactions (McKelvey et al., 2015), less depression, less obesity, less behavioural problems (Currie & Neidell, 2007) and less offending (Carneiro & Ginja, 2014). The developmental theoretical perspective is rooted in the notion that early childhood intervention can prevent later costly problems in adolescence and adulthood that appear unrelated to the content of the childhood intervention (Moffitt et al., 2011; Sprague & Walker, 2000).

A body of evidence is now accumulating pertaining to the long-term impact of the HS initiative. Garces and colleagues (2002) utilised a within-family methodology comparing children who did benefit from the scheme to their siblings who did not. They found that statistically significantly more HS children completed high school, were more likely to attend college and less likely to be involved in offending (Garces et al., 2002). Although the authors made use of within-family methodology, there remains the possibility that within-child factors may contribute to the findings.

Utilising data from the children of the national longitudinal survey of youth (CNLSY), Carneiro and Ginja (2014) investigated the impact of HS intervention across
adolescence and young adulthood at three time points: - ages 12-13, 16-17 and 20-21 years. At the earliest of these age ranges multiple variables were considered across three different domains: cognition, behaviour and health. For the other two age ranges behaviour was the main focus. The comparison group consisted of children also from low income families, but who either attended different preschool care or who were cared for in the home. Consistent with the childhood findings of HS any differences in cognitive measures had attenuated by time 1. However, significant health and behaviour benefits were associated with the HS group such as a reduction in obesity, the prevalence of chronic conditions and behaviour problems as measured by the Behaviour Problems Index (BPI; Centre for Human Resource Research 2000). At age 20-21 years there were significantly fewer arrests and convictions among males in the Head Start group. These findings have been replicated in the USA with other cohorts such as the Chicago Child-Parent Program (Reynolds, Temple, Robertson & Mann, 2001).

These distal effects have also been noted in other initiatives aimed at high-risk families. The Perry Preschool study began in 1962 and randomly assigned 123 African American children, born in poverty, to one of two groups (Schweinhart, Barnes & Weikart, 1993). The groups were matched on gender, SES and baseline IQ. One group received intensive, high quality education five mornings a week and the other group received no pre-school education. Data were collected at multiple waves, up to, and, including age 40. The age 27 data revealed a significantly higher level of schooling, employment rates, monthly earnings, and significantly fewer arrests for those young people who had received the early education intervention (Schweinhart et al., 1993).

A childhood intervention that targeted academic, social skills and self-control entitled Fast Track, involving a total of 891 children deemed as aggressive and high risk at the start of elementary school, also provides interesting results at follow-up in early
adulthood (Sorensen & Dodge, 2016). Children were divided into two groups: 445 of them received the intervention and 446 made up a control group. Findings at age 20 indicated that fast track participants were 39% and 34% less likely to have been arrested as a juvenile and as an adult, respectively (Conduct Problems Prevention Research Group, 2010). Analysis aimed at identifying the components of intervention responsible for this effect illustrated that improvements in social skills and self-control had the biggest impact. Sorenson and Dodge (2016) reported standard coefficient of 0.19 for interpersonal skills and a standard coefficient of 0.23 for intrapersonal skills. Mediation analysis of the Perry Preschool intervention found similar results (Heckman, Pinto & Savelyev, 2013). In the UK there have been few studies on distal, potentially beneficial outcomes of early interventions. Goodman and Sianesi (2005) found positive educational and employment outcomes in adulthood for individuals who had received early pre-school education (but also see Apps, Mendolia, & Walker, 2013).

Finally, it should to be noted that potential benefits may be offset by the presence of other risk factors for offending. Young people known to youth justice services have often experienced lives marred by socio-economic disadvantage (Stephenson, 2007). The literature exploring low SES and DLD suggests that growing up in poverty may be a risk factor for language difficulties (Locke et al., 2002) by virtue of type and frequency of language exposure (Hart & Risley, 1995). Indeed, in areas of lower SES the prevalence of DLD has been reported to increase to 31% (Enderby & Pickstone 2005). This socio-economic disadvantage continues into adolescence (Spencer et al., 2012). SES typically depends on a combination of variables and researchers have used a variety of these to delineate the construct in samples including individual-level factors such as education, income and occupation, as well as ecological area-level measures assigned via residential postcode.

A number of factors have been recognised as contributors to offending behaviour. Strong associations have been found between offending and exposure to violence.
(Darker et al., 2008; Widom & Maxfield, 2001), substance use (Biederman et al., 2008) and alcohol misuse (Richardson & Budd, 2003). Furthermore, early substance use increases the risk for misuse and later dependence (Van Ryzin & Dishion, 2014). Tobacco use, in contrast, lacks this strong association with long-term offending or aggression. Associations between tobacco use and delinquent behaviour have been limited to adolescence (Ellickson, Tucker, & Klein, 2001) and have attenuated over time (Tucker, Martinez, Ellickson & Edelen, 2008). Any associations with crime that have been reported have arisen from unadjusted analysis which failed to take into account potential confounders that could account for the relationships found (Mathers, Toumbourou, Catalano, Williams, & Patton, 2006).

2.4 The present study

There is a dearth of longitudinal studies that have reported on offending in young people with identified DLD. This is particularly surprising given what we know of the high prevalence of unidentified language difficulties in the young offending population. As reviewed above, few studies conducted in the UK have examined potential beneficial long-term outcomes for individuals who have received specialist intervention in childhood. To our knowledge, this is the first investigation to examine offending and behaviours associated with offending, such as alcohol and substance use, in a group of young adults with a history of DLD who attended language units and received intensive early intervention in childhood (referred to henceforth as young adults with a history of identified DLD). Our main prediction was that early language intervention programmes, such as those provided by language units, have long term improved distal outcomes. These potential benefits could include less frequent engagement with risky behaviours such as substance and alcohol use as well as reductions in offending-related behaviours such as contact with the police, rule-breaking and aggression.
Specifically, this paper addresses two research questions:

1) Is substance use lower in young adults with a history of identified DLD compared to age-matched peers?
2) Are contact with the police, rule-breaking behaviours and aggression scores lower in young adults with a history of identified DLD compared to their age-matched peers?

This investigation utilised data from the Manchester Language Study, a study of individuals who attended language units in England in early childhood. The study we have reported on in this paper focused on young adults aged 24 years.

2.5 Method

2.5.1 Ethics

The study reported here received ethical approval from The University of Manchester. All participants provided their informed written consent.

2.5.2 Participants

Young adults with a history of identified DLD. Participants were originally part of the longitudinal Manchester Language Study, which consisted of an initial cohort of 242 children (77% male, 23% female) (Conti-Ramsden et al., 1997). These children represented a random sample of 50% of all 7-year olds attending 118 language units across England for at least half of the school week. Language units are specialised classes equipped to meet the needs of children who have been recognised as having developmental language disorders (DLD), that is, language is their main area of difficulty and their language difficulty is not associated with other neurobiological disorders such as autism. To be placed in a language unit, children generally have to fulfill a number of criteria. Most units in England require children to have, or be undergoing assessment for, a statement of special educational needs or, from 2014, an education, health and care plan. This document details their difficulties and the
professional input they require including intensive speech and language intervention. Language units have a high staff to pupil ratio and provide input from both speech and language therapists and specialised teachers. This level of support is reserved for children who would be unable to cope or would struggle to access the curriculum in a mainstream setting, even with the support of a teaching assistant.

Individuals were contacted again at ages 8 (n=232), 11 (n=200), 14 (n=113), 16 (n=139), and 24 (n=84). Funding constraints contributed to attrition at subsequent follow-up stages of the study. The current sample, 35% of the original cohort, consisted of 56 (67%) males and 28 (33%) females, ranging in age between 23.4 years and 25.9 years (M = 24.4; SD = 0.7 years). To examine potential attrition bias, we compared the receptive language, expressive language, nonverbal IQ and gender distribution of individuals with a history of DLD who continued to participate at 24 years and those who did not. There were no significant differences in receptive language ($t(240) = -1.13, p = .261$), expressive language ($t(229) = -0.45, p = .654$), and nonverbal IQ ($t(231) = -0.60, p = .547$) standard scores at age 7 between those who participated at age 24 and those who did not. At age 24 years, the gender distribution in the DLD group (67% male; 33% female) was not significantly different from the gender distribution of the comparison group (56% male; 44% female, see below), $\chi^2(1, N = 172) = 2.18, p = .140$.

Aged-matched peers (AMP). The comparison group consisted of 88 aged-matched peers, 49 (56% were males) and 39 (44%) were females, ranging in age between 22.3 years and 26.0 years ($M = 24.1; SD = 0.9$ years). The comparison group had no history of speech and language therapy provision or provision for special educational needs (as ascertained by teachers’ reports). Sixty-six of these young adults were recruited at age 16 years and 22 young adults were recruited for the final wave of the Manchester Language Study. The age 16 participants were recruited from the same schools as the participants with a history of DLD as well as additional targeted
mainstream schools. Specific demographic areas were selected to recruit comparison peers from broadly similar social backgrounds to the participants with a history of DLD. Care was taken so that the 22 young adults that participated in this study matched the original sample in terms of age and socioeconomic status as measured by personal income. All participants had remained in school until the end of compulsory education (in the UK, at 16 years on average). The DLD and the AMP groups did not differ on household income at age 16 years ($\chi^2(10, N = 145) = 9.32, p = .501$). In previous research with the Manchester Language Study it has been established that the participating families came from a broad range of social-economic backgrounds with percentages of both DLD and AMP participants in each income band category distributed similarly across the SES range (as measured by maternal education and household income; Wadman, Durkin & Conti-Ramsden, 2008). Participants also did not differ on personal income at age 24 years ($\chi^2(5, N = 131) = 7.38, p = .194$). In addition, comparisons were carried out between the DLD and AMP groups on additional key social factors at age 16 including maternal education, other languages spoken at home and whether parent was a home owner. We found no significant differences across those with and without DLD (see Table 1).

Table 1. Comparison of DLD and AMP groups on social factors at age 16

<table>
<thead>
<tr>
<th></th>
<th>DLD n (%)</th>
<th>AMP n (%)</th>
<th>Test Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother achieved at least GCSE qualification?</td>
<td>62 (47%)</td>
<td>57 (48%)</td>
<td>$\chi^2 (1, N=251)=0.07^{NS}$</td>
</tr>
<tr>
<td>Mother achieved at least A-Level Qualification?</td>
<td>56 (42%)</td>
<td>54 (46%)</td>
<td>$\chi^2 (1, N=251)=0.34^{NS}$</td>
</tr>
<tr>
<td>Mother achieved at least University Qualification?</td>
<td>19 (14%)</td>
<td>20 (17%)</td>
<td>$\chi^2 (1, N=251)=0.34^{NS}$</td>
</tr>
<tr>
<td>Other languages spoken at home?</td>
<td>10 (7%)</td>
<td>6 (5%)</td>
<td>$\chi^2 (1, N=254)=0.55^{NS}$</td>
</tr>
<tr>
<td>Parent home owner?</td>
<td>99 (75%)</td>
<td>95 (82%)</td>
<td>$\chi^2 (1, N=248)=1.72^{NS}$</td>
</tr>
</tbody>
</table>

NS not significant. Values represent number of participants answering yes with % in brackets.
2.5.3 Materials and Measures

Substance use

Alcohol consumption and drug use were included in this domain. Participants were asked a series of questions concerning their use of alcohol. Those who stated they consumed alcohol were then asked to give an estimate of the volume and frequency of their consumption. Participants were also asked about whom they drank alcohol with. Four choices were offered; alone, with family, with friends or with strangers. These questions were also used to establish any drug use among the sample and if so to assess the extent of this drug use (Appendix 1 lists the questions used in the study).

Contact with the police

Participants were asked a series of questions pertaining to adversarial police-initiated contacts. In line with the Offending Crime and Justice Survey (OCJS), which develops models of police-initiated contacts (Ariza, 2014), key variables were explored. Respondents were asked to declare if 1) they had ever been in trouble with the police (hereafter abbreviated to TWP), 2) they had ever been told off or asked to move on by the police (hereafter abbreviated to ATM), 3) stopped and searched by the police (hereafter abbreviated to SAS), 4) stopped but not searched (abbreviated to SNS), 5) if they had ever received a warning or caution and finally 6) if they had ever been arrested. Questions required a yes/no response.

Rule-breaking and aggression

Rule-breaking and aggression were evaluated using the Achenbach Adult Self-Report for ages 18-59 (ASR; Achenbach & Rescorla, 2003). This measure consists of normed sets of scales each containing multiple subscales. Participants were asked to rate their behaviour over the past six months on a three-point scale (0 = not true, 1 = somewhat or sometimes true, 2 = very true or often true). The rule-breaking behaviour
scale consisted of 15 items which were summed to create a raw score. Questions included 1) I break rules at work or elsewhere and 2) I lie or cheat. The aggressive behaviour scale also consisted of 15 items which were summed to create a raw score, questions included 1) I get in many fights and 2) I threaten to hurt people. Higher scores correspond to a greater number of symptoms. Previous research has shown the ASR to be a valid measure of externalising difficulties in this age-group (Rescorla & Achenbach, 2004).

Smoking

Unlike substance use and alcohol misuse, tobacco use is not strongly associated with long-term offending or aggression. Thus, smoking can be considered as a control outcome measure in the design of this study. That is, childhood intervention would not be expected to have beneficial impact on tobacco use in young adulthood. Those participants that confirmed they smoked tobacco were then asked a series of questions. These questions established the onset age of smoking behaviour, frequency per week and amount smoked per day.

Assessment of language and nonverbal skills

To assess language ability, the Clinical Evaluation of Language Fundamentals (CELF-4UK) (Semel et al., 2006) was utilised. The CELF-4 is a standardised assessment and is normed up to age 21 years 11 months. Three sub-tests of the CELF-4 were utilised, these consisted of word classes receptive (WCR) which requires the participant to listen to a list of four words and decide which two are related. Formulating sentences (FS) requires the participant to formulate a sentence, including a given word, based on a picture shown. This measures the ability to articulate in a coherent logical order illustrating both vocabulary use and sentence structure. A further receptive measure was used, understanding spoken paragraphs (USP). Where the WCR relies on the ability to comprehend associations among words, and is concerned with the structural aspect of language, USP focusses on an individual's ability to process, comprehend
and formulate a response to verbally presented information. This entails answering questions that test not only factual information but also inferential understanding. For the age range 17;0-21;11 years, the reliability of the WCR subtest was .88, FS subtest was .82, and, of the USP subtest was .75. Clinical validation studies of the CELF-4 reported in the manual indicate that the test is sensitive to developmental language disorders in children, adolescents and young adults. None of the participants in this study reached ceiling in the CELF-4 tasks.

The Wechsler Abbreviated Scale of Intelligence (WASI, Wechsler 1999) Performance subscale was administered as a measure of nonverbal IQ and standard scores were calculated. This test has norms for individuals aged 6 to 89 years. The reliability of the Performance IQ scale for the age range 20-24 years is .94. Validity studies of the WASI reported in the manual provide evidence that the test is a valid quick screening measure of intellectual functioning.

2.6 Data handling and statistical analysis

The data were analysed using SPSS Version 20. Comparisons between groups were based on the two-sample t-test for continuously scaled data or non-parametric Mann-Whitney U-test where data were not normally distributed. Pearson's Chi-square was utilised for dichotomous and ordered categorical variables. Although we posit directional hypotheses for long-term impact of early intervention, we are mindful of the dearth of studies specifically looking at individuals with a history of DLD. We thus have adopted the more rigorous (non-directional) two-tailed approach as we are not able to rule out that the results could in fact go in the other direction than the one posited. The threshold for statistical significance was set at \( p < 0.05 \) value. For subgroups where risk of police contact was indicated by chi-squared tests to be statistically different between the DLD and AMP groups, we estimated risk ratios from log-binomial regression models, with 95% CIs obtained using a normal approximation and the standard error of the log (risk ratio), as described in Altman (1999).
2.7 Results

Psycholinguistic profiles of the participant groups

Comparisons of mean standard scores pertaining to language and nonverbal IQ for DLD vs AMPs, including standard deviations, are presented in Table 2. All scores for the AMPs were within the expected range. The mean language scores for the young adults with a history of identified DLD fell below 1 SD below the mean (<.85). Mean nonverbal scores were within the expected range and close to the population average. Participants with a history of identified DLD, however, had significantly lower nonverbal IQ scores than their peers (see Leonard 2014).

Table 2. Psycholinguistic profiles of the DLD and AMP groups

<table>
<thead>
<tr>
<th>Group</th>
<th>DLD (N = 84)</th>
<th>AMP (N = 88)</th>
<th>t</th>
<th>df</th>
<th>Mean Difference [95% CI]</th>
<th>Cohen's d</th>
</tr>
</thead>
<tbody>
<tr>
<td>WCR</td>
<td>83.51 (18.60)</td>
<td>106.22 (8.94)</td>
<td>10.17***</td>
<td>168</td>
<td>22.71 [18.30 to 27.11]</td>
<td>1.56</td>
</tr>
<tr>
<td>FS</td>
<td>81.57 (18.93)</td>
<td>105.64 (12.07)</td>
<td>9.89***</td>
<td>167</td>
<td>24.07 [19.26 to 28.88]</td>
<td>1.52</td>
</tr>
<tr>
<td>USP</td>
<td>70.90 (14.17)</td>
<td>86.74 (13.03)</td>
<td>7.57***</td>
<td>167</td>
<td>15.84 [11.71 to 19.97]</td>
<td>1.17</td>
</tr>
<tr>
<td>Nonverbal IQ</td>
<td>98.80 (15.80)</td>
<td>111.93 (10.28)</td>
<td>6.43***</td>
<td>167</td>
<td>13.14 [9.10 to 17.17]</td>
<td>1.08</td>
</tr>
</tbody>
</table>

*** p < .001  Note: All scores are standard scores means and in brackets standard deviations.

DLD = Developmental Language Disorder, AMP = Aged-matched Peers

Substance use

A high percentage (84.3%) of the young adults in the study reported that they currently consumed alcohol. No significant between-group differences were found (χ² (1, N = 172) = 2.56 p = .11), with comparable proportions of the DLD and AMP groups reporting current alcohol consumption (80% (67/84) and 87% (78/88) respectively). Between-group differences were found, however, in relation to alcohol use with AMPs...
reporting significantly more days drunk, consuming more alcohol units per session and an earlier onset age of drinking behaviour. These results are presented in Table 3.

Table 3. Characteristics of alcohol use by DLD and AMP group

<table>
<thead>
<tr>
<th>Measures</th>
<th>DLD (N = 67)</th>
<th>AMP (N = 78)</th>
<th>p-value Mann-Whitney U-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age started drinking alcohol</td>
<td>16.9 2.16 8-23</td>
<td>15.6 1.78 11-21</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Days drunk in the last 6 months</td>
<td>5.4 13.5 0-96</td>
<td>12.3 13.1 0-60</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Total alcohol units per session</td>
<td>9.32 6.95 1-39</td>
<td>13.2 8.33 1-47</td>
<td>.001</td>
</tr>
</tbody>
</table>

DLD = Developmental Language Disorder, AMP = Aged-matched Peers

Participants were asked about their socialising habits when drinking and with whom they chose to drink alcohol. This is summarised in Figure 1. The totals exceed participant numbers as some fell into more than one category. It was found that over two thirds (68%) of the participants who reported drinking alone came from the DLD group and this difference was significant ($\chi^2 (1, N = 145) = 7.36 p = .007$). No further significant between group differences were found.
A total of 15 (9%) participants reported that they participated in drug use, for reasons other than medical use. Among those that reported drug use, 13% (2/15) were from the DLD group and 87% (13/15) were from the AMP group, this difference was statistically significant, Fisher’s Exact Test $p = .005$. The low level of drug users in the DLD group prevented further analyses but, interestingly, onset age for drug use was higher in the AMP group ($M = 17.6$) compared to the DLD group ($M = 16.5$).

Recall that smoking was examined due to its lack of robust association with offending behaviour. There was a statistical trend for a higher percentage of smokers to be AMPs, 27% (24/88) rather than young people with identified DLD, 16% (13/84), $\chi^2 (1,172) = 3.54 \: p = .06$. Both groups of participants began smoking at approximately the same age ($M = 16.19$, $SD = 2.52$ for DLD and $M = 17.08$, $SD = 2.75$ for AMP), $t (44) = 1.30$, $p = .198$ and smoked similar number of cigarettes per day ($Mdn = 9$, $SD = 17.3$ for DLD and $Mdn = 7$, $SD = 6.81$ for AMP), $t (35) = 1.18$, $p = .244$. 


Contact with the police, rule breaking and aggressive behaviours

The percentage of participants reporting TWP significantly differed by group status (DLD vs AMP), $\chi^2(1, N = 172) = 6.75, p = .009$. The risk ratio indicated that participants in the AMP group were almost two and a half times (risk ratio 2.44, 95% CI 1.1 to 4.9) more likely to have been in TWP. Among the 32 participants that reported being in TWP, 68.8% were male. A higher proportion of males reported TWP and this was true for both groups; 67% males (6/9) for the DLD group and 70% males for the AMP group (16/23).

The percentage of participants that declared that they had been ATM by the police also significantly differed by group status (DLD vs AMP), $\chi^2(1, N = 169) = 15.14, p < .001$. The AMPs were just over three times more likely to have been ATM on by the police (risk ratio 3.13, CI 1.7 to 5.9). Although the trend was for AMPs to report a higher frequency of SAS, SNS, warnings/cautions and arrests, these failed to reach significance. Descriptive statistics and chi-square analysis relating to contact with the police are summarised in Table 4.
Table 4. Frequency of police contacts by DLD and AMP group

<table>
<thead>
<tr>
<th>Measure</th>
<th>DLD</th>
<th>AMP</th>
<th>Chi-square</th>
<th>p value</th>
<th>Risk ratio [95% CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Freq</td>
<td>%</td>
<td>N</td>
<td>Freq</td>
</tr>
<tr>
<td>TWP</td>
<td>84</td>
<td>9</td>
<td>10.7</td>
<td>88</td>
<td>23</td>
</tr>
<tr>
<td>ATM</td>
<td>81</td>
<td>10</td>
<td>12.3</td>
<td>88</td>
<td>34</td>
</tr>
<tr>
<td>SAS</td>
<td>81</td>
<td>10</td>
<td>12.3</td>
<td>88</td>
<td>16</td>
</tr>
<tr>
<td>SNS</td>
<td>81</td>
<td>13</td>
<td>16.0</td>
<td>88</td>
<td>28</td>
</tr>
<tr>
<td>Warnings/cautions</td>
<td>81</td>
<td>6</td>
<td>7.4</td>
<td>88</td>
<td>13</td>
</tr>
<tr>
<td>Arrested</td>
<td>81</td>
<td>4</td>
<td>4.9</td>
<td>88</td>
<td>9</td>
</tr>
</tbody>
</table>

TWP = Trouble with the police, ATM = asked to move on or told off, SAS = stopped and searched, SNS = stopped and not searched. DLD = Developmental Language Disorder, AMP = Aged-matched Peers

The mean score for the aggressive behaviour scale was lower (indicative of fewer problems) for the AMP group than for the DLD group. Results indicated that the DLD group had a statistically significant higher raw score (U = 2380, p = .037). However, the percentage of individuals that fell within the borderline or clinical range for aggression was not statistically significant across groups, (13% for DLD vs 7% for AMP), χ²(1, N = 167) = 1.51, p = .219. There were also no group differences in rule breaking behaviours between the two groups. Details are presented in Table 5.
Table 5. Aggressive and rule breaking behaviour by DLD and AMP group

<table>
<thead>
<tr>
<th>Measures</th>
<th>DLD (N = 80)</th>
<th>AMP (N = 80)</th>
<th>p-value Mann-Whitney U-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>Range</td>
</tr>
<tr>
<td>Aggressive</td>
<td>6.18</td>
<td>5.58</td>
<td>0-23</td>
</tr>
<tr>
<td>Behaviour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule breaking</td>
<td>2.45</td>
<td>2.59</td>
<td>0-13</td>
</tr>
<tr>
<td>behaviour</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DLD = Developmental Language Disorder, AMP = Aged-matched Peers

2.8 Discussion

This is the first published study of the relationship between identified DLD and offending in a UK context, to the best of our knowledge. Our findings revealed that young adults with a history of identified DLD do not appear to have an elevated risk of contact with local police officers or a higher arrest rate. In contrast to the literature pertaining to young people with unidentified DLD, and in line with our prediction, individuals with a history of identified DLD in this investigation reported less contact with the local police service compared to AMPs. This study is consistent with the United States literature, reviewed earlier, that has considered programmes implemented to address the needs of the most vulnerable. In line with this literature, individuals who have previously received intervention for their DLD reported statistically significant less trouble with the police and less instances of being moved on by police officers. Although perhaps considered a less intrusive police-initiated contact, it results in the young person becoming known and recognised by local police officers. In our TWP and ATM model, group effect was statistically significant. For the other police contact related variables the effect was in the expected direction: AMPs reporting higher levels.
In terms of aggression, participants with a history of identified DLD evidenced significantly higher aggression scores than AMPs. It is now well established that young people with DLD are at increased risk of experiencing social, emotional and behavioural difficulties (Durkin & Conti-Ramsden, 2010; Lindsay & Dockrell, 2012; St. Clair et al., 2011). A recent meta-analysis reported that children with DLD were more than twice as likely to exhibit externalising problems than their typically developing peers (Yew & O’Kearney 2013). Aggressive behaviour has been significantly associated with violent offending (Ang, Huan, Chua, & Lim, 2011) and is a predictor of delinquency and violence (White, Moffitt, Earls, Robins, & Silva, 1990). Snow and Powell (2011) reported an elevated rate of DLD in young offenders convicted of more serious offences. As part of the longitudinal Ottawa Language Study, Brownlie and colleagues (2004) examined whether 19-year-old young adults with a history of speech and language impairment evidenced higher levels of aggression and delinquency compared with their peers. Parent reported aggression symptoms were higher in the DLD group. Self-reported arrests and convictions for males were also higher in the DLD group than in their peers. However, the history of childhood language intervention for individuals in this community-based sample was not examined as a potential influencing factor on the findings on delinquency. In this study, no between group difference was found for clinical level symptoms of aggression. Results are indicative of elevated sub-clinical levels of aggression for those with a history of identified DLD. It is important to note, however, that this aggression did not manifest in rule-breaking behaviours in young adulthood for these individuals. It could be hypothesised that higher levels of support received in the language units provided the children with enhanced strategies, equipping them to deal with, and therefore mitigate later problem behaviour.

Explanations that can account for this increase in aggression scores may include higher levels of frustration, confusion and inability to utilise linguistic skills as a facilitator to navigate and effectively solve disputes. Children with DLD display
significantly more withdrawn behaviours at school (Fujiki, Brinton, Isaacson, & Summers, 2001). Interaction difficulties with peers are common for children and adolescents with DLD, resulting in reduced positive social interactions and feedback (Mok, Pickles, Durkin & Conti-Ramsden, 2014). In the context of typical language development, individuals engage in interaction and develop their social skills. Young people with DLD have often been excluded from these practice opportunities thus impacting on language acquisition (Durkin & Conti-Ramsden, 2010). Young people who are unable to create and negotiate a peer network due to compromised social interaction skills are more likely to associate with people already involved in crime (Quinton et al., 1993). Instances of peer rejection, even at moderate levels, continuing for 1–2 years, predict adolescent anti-social involvement (Laird et al., 2001). Furthermore, the time at which such behaviour commences can affect the longevity, with the later the onset the greater the ability to desist from anti-social behaviour (Piehler & Dishion, 2007). It is possible that young people who cannot rely on language skills for positive socialisation may turn to delinquent behaviour to gain social status when language demands exceed their abilities.

A significantly higher number of AMPs reported drug use. Only two members of the DLD group reported using drugs. Age of onset of this use was lower for the adults with a history of identified DLD, although this needs to be interpreted with caution due to the small number of drug users in this sample. No group difference was found relating to the number of participants that consumed alcohol. In a longitudinal community sample of youths with and without early childhood speech and language difficulties, Beitchman and colleagues also found no group differences in the rates of alcohol and drug use (Beitchman et al., 1999). The authors suggested that DLD provided a protective factor against anti-social behaviour that usually occurs in groups. Our study takes this suggestion further. We suggest that language difficulties that have been identified and supported by intervention may lead to less risky behaviour in relation to alcohol and drug use. Evidence for this suggestion was also found when we examined
the frequency and intensity of consumption. On occasions when young adults chose to consume alcohol, participants in the AMP group reported consuming a significantly greater amount of alcoholic units and also reported spending significantly more days under the influence of drink in the preceding 6 months. Although significantly more members of the DLD group reported drinking alone there was no difference for drinking with friends. This would suggest that members of the DLD group participated in social drinking but they consumed less alcohol than the AMPs. This is likely to result in less problematic behaviour fuelled by alcohol and less contact with the police. Nonetheless, it is important to acknowledge that these young people may have small social networks, and that this may be the underlying reason for reduced use. Further research in this area is certainly warranted.

The growing body of evidence detailing unrecognised DLD in the youth offending population suggests that the full consequences of coping with poor language skills during the developing years and the associations with offending behaviour may only be realised later in life (Brownlie et al., 2004). Scant research exists concentrating on crime related variables in adults with a history of DLD. The one other study exclusively focusing on offending and DLD utilised data from the Danish National Crime Register to compare prevalence, and type of offence, between cases of identified DLD and comparison peers from the general population (Mouridsen & Hauschild 2009). Individuals at a mean age of 37.5 years were compared on a range of crime outcome measures. Their findings indicated a 3.3% lower conviction rate for young adults with identified DLD. This reduction in convictions, however, was not statistically different than that observed in peers. Poor levels of language proficiency have been associated with literacy and numeracy difficulties (Snowling et al., 2001), low educational attainment (Conti-Ramsden & Durkin, 2012), social stress (Wadman et al., 2011) and social, emotional and behavioural difficulties (Durkin & Conti-Ramsden 2010; St Clair et al., 2011). These highly interwoven issues lead Bryan and colleagues (2015) to suggest a 'compounding risk model' (Bryan et al., 2015), whereby poor
language results in further risks. For those whose DLD has remained unrecognised it is likely that, without the necessary modifications to the curriculum, they will have faced significant challenges in the classroom keeping up with curricular vocabulary, listening and following classroom instructions (Sanger et al., 2000). Teachers may see the presentation of a young person’s language difficulties as rudeness, egocentricity or a lack of co-operation (Snow & Powell 2011). All these difficulties are likely to affect motivation and engagement, potentially resulting in problem behaviours. Moreover, academic difficulties can lead to disengagement with the education system and alliance with other disconnected peers (Gifford-Smith et al., 2005), which further perpetuates problems.

We found that for young adults whose language difficulties had been identified resulting in experiencing specialist intervention in language units, outcomes were more favourable. It is possible that such interventions are offering long term benefits with cascading effects on other life course domains not directly targeted by the intervention. Further evidence for this is that the outcomes were more favourable than for AMPs, young adults who had not developed with language difficulties. This allows for the consideration that the intervention procured benefits that over time have contributed to the prevention of later adverse crime outcomes. Therefore, the interventions aimed at ameliorating language difficulties may also not only offer children the opportunity to develop strategies to adjust socially and emotionally to the long-term nature of their language difficulties, but also improve the young person’s competence in other areas associated with offending such as emotional self-regulation (Snow et al., 2016), above and beyond their typically developing peers. A young person’s involvement in offending behaviour is usually due to multifactorial issues, which can include, but are not limited to social disadvantage, educational underachievement and mental health (Bryan et al., 2015, Snow et al., 2016). These issues could have contributed to the higher incidences of offending in the AMP group. The findings of this study demonstrate the importance of assessment, identification
and appropriate intervention for children and young people with DLD. The language difficulties experienced by the young people currently in the criminal justice system have gone unrecognised and unsupported. A central reason for unmet need is the lack of appropriate and timely assessment (Harrington & Bailey, 2005). This investigation provides novel evidence that specialist intervention in childhood has the potential to disrupt risk and reduce the cycle of adverse outcomes in relation to substance use and rule-breaking.

A significant issue for policymakers is the cost-benefit ratio of initiatives such as specialist intervention for DLD. In other words, does the investment of financial resources yield sufficient results? Often only short-term benefits are examined with little consideration given to the broader long-term implications and societal savings. Intervention for a 16-year-old with DLD has been estimated to cost £200,000, however incarceration increases this by £100,000 (Hartshorne, 2006). Any type of contact with the criminal justice system incurs substantial cost, with approximately £1000 million spent on ‘processing and dealing with young offenders’ (Barratt, Byford, Chitsabesan & Kenning, 2006). Due to the time elapsed since these calculations this is likely to be an under-estimation of current costs. Offending is costly to society and has an extensive impact on public resources, direct and indirect victims (such as family members), and the wider community (Marder, 2013). Therefore, innovative approaches to divert young people away from criminality continue to be sought. Routine assessment and targeted intervention, especially for those at-risk groups, is a strategy that warrants empirical investigation (Snow & Powell, 2008).

2.9 Limitations

As with all longitudinal research, there remains the possibility that unmeasured variables may have contributed to the between-group differences observed. In addition to substance and alcohol use, the literature details many factors that have been recognised as important correlates of offending behaviour and a discussion of
these is beyond the scope of this article. It is possible that factors including childhood maltreatment (Caspi et al., 2002), exposure to violence (Darker et al., 2008) and delayed psychosocial maturity (Baskin-Sommers & Newman 2014) could have contributed to group differences. Research including other potential influencing factors is needed. These findings relied on self-reported data. Although young adults may over report offending behaviour, due to a perception of higher social status, or underreport for fear of disapproval, previous research has found self-report to be accurate (Thornbury & Krohn, 2001). We also acknowledge that there are validated self-report tools for obtaining data on alcohol consumption and drug use. However, given the multiple areas of functioning examined in this phase of the Manchester Language Study, we were under time constraints which resulted in focusing on a small number of questions which are reported in this investigation. Future research using a number of measurement tools as well as multiple sources of data, for example police records, would provide further insight into the relationships among language difficulties, early identification and early interventions, and socioemotional outcomes in early adulthood. Additionally, future research would benefit from the inclusion of a comparison group that consists of young people with DLD who do not receive early intensive intervention aimed at ameliorating these difficulties.

2.10 Conclusion

This is the first study to examine potential beneficial distal effects of childhood identification and intervention for DLD in relation to substance use, contact with the police and rule-breaking in young adulthood. It is well established that a high number of young offenders display language abilities across multiple domains that are well below that of the typical population. These language difficulties have, for the most, gone previously unrecognised and earlier opportunities to identify and intervene have been lost. Regularly monitoring the language abilities of children who display problem behaviours or who underperform in school could be a target for prevention efforts.
Speech and language therapy is deemed a vital service in settings that involve those with high rates of DLD (Law, Reilly & Snow, 2013), moreover, there is evidence to suggest that speech and language intervention is effective within youth justice services (Gregory & Bryan, 2011). Provision embedded within the youth justice settings would allow for identification of DLD upon entry and a better awareness among practitioners of the nature and implications of such difficulties.

Findings from research such as ours have important implications for practice. They support the need for early identification and intervention for children with DLD. With respect to policy, our results speak to the notion that intervention efforts aimed at ameliorating language difficulties could possibly have distal outcomes in relation to offending that positively alter the trajectory of these young people.
2.11 Appendix 1 – Questions asked pertaining to alcohol and drug use

Alcohol use

1) Do you currently drink alcohol?

2) How old were you when you started drinking alcohol?

3) On average, how often do you have a drink containing alcohol?

   Only a few times a year / About once a month / Once a fortnight / One or two days per week /

   Three or four days per week / Five or six days per week / Every day / Rather not say

4) In the past 6 months, on how many days were you drunk?

5) Do you think the amount of alcohol you drink is

   About right / Too much / Not enough?

6) When you drink alcohol, is it:

   On your own / With friends / With family / With strangers?

7) Which is your preference?

Drug Use

1) Do you use drugs other than those required for medical reasons?

2) How old were you when you started taking drugs?

3) In the past 6 months, on how many days did you use drugs for non-medical purposes?

4) Who do you take them with?

   On your own / With friends / With family / With strangers

5) Which is your preference?
Chapter 3: Financial capability and functional financial literacy in young adults with developmental language disorder (DLD).

(Study 2).


The presentation and reference style used for the manuscript has been altered in the interest of consistency with other chapters in this thesis.
3.1 Abstract

**Background:** Financial capability is an essential feature of the organisation of one’s personal life and engagement with society. Very little is known of how adequately individuals with developmental language disorder (DLD) handle financial matters. It is known that language difficulties place them at a disadvantage in many aspects of their development and during their transition into adulthood, leading to the possibility that financial issues may prove burdensome for them. This study examines the financial capability and functional financial literacy of young adults with DLD and compares them to those of age matched peers (AMPs). We tested the expectation that those with DLD would find financial management more challenging than would their peers, and that they would need to seek greater support from family members or other people.

**Methods:** Participants completed a detailed individual interview, which included items drawn from the British Household Panel Survey and additional measures of financial capability, functional financial literacy and of perceived support. Nonverbal IQ, language, reading and numeracy measures were also collected.

**Results:** Compared to typically developing AMPs, young people with DLD report less extensive engagement with financial products and lower competence in functional financial literacy. A considerably higher proportion of those with DLD (48% vs 16% of AMPs) report that they draw on support, primarily from parents, in various financial tasks, including paying bills, choosing financial products, and taking loans from family or friends.

**Conclusions:** This is the first study to consider the financial capability skills and functional financial literacy of young adults with DLD. We provide novel evidence that some young adults with DLD lack functional financial skills and require support to successfully manage their finances. This has policy implications that relate not only to engaging affected individuals in discussions about financial management but also to wider familial support.
3.2 Introduction

Financial capability entails conceptual and terminological understanding, as well as the management of one's own monetary affairs (Atkinson et al., 2006; Taylor et al., 2011). Ever more so in the context of economic crises, prolonged periods of austerity and insecure employment, contemporary young people face considerable hazards in handling financial matters. Increasing the level of financial capability, particularly amongst the most vulnerable in society, has become a target for national governments (Allmark & Machaczek, 2015; Xiao et al., 2015). Evidence indicates that those with greater financial competence tend to enjoy greater psychological wellbeing (Mellhuish et al., 2008; Taylor et al., 2011), more stable financial behaviour (Hilgert et al., 2003; Lusardi & Mitchell, 2007) and achieve more favourable economic outcomes (Lusardi & Mitchell, 2014).

Developmental Language Disorder

Developmental Language Disorder (DLD) refers to a difficulty with language that is not accounted for by physical, cognitive and/or neurological causes (Bishop et al., 2017; Durkin & Conti-Ramsden 2010). It affects approximately 7% of children on school entry (Tomblin et al., 1997). DLD is not exclusive to childhood but can continue into adolescence and adulthood (Clegg et al., 2005; St Clair et al., 2011; Yew & O’Kearney, 2013). Except for severe cases, adolescents with DLD are less easy to identify, often relying on facilitative strategies to mask their difficulties (Durkin & Conti-Ramsden, 2010). Thus, adolescents with DLD, despite precarious language skills, are often able to get by in familiar everyday interactions without their difficulties becoming readily apparent to others (Durkin & Conti-Ramsden, 2010).

Despite the somewhat hidden nature of this disability, longitudinal studies demonstrate that adolescents and young adults with DLD demonstrate poorer outcomes, when compared with their peers, in multiple domains that go beyond
language understanding and use (Conti-Ramsden & Durkin, 2008, 2012; Johnson et al., 2010). These broader disadvantages are likely also to have implications for how well young people with DLD are equipped to deal with financial matters. For example, the terminological and conceptual requirements of this domain may pose difficulties for those with poorer language, reading and numerical skills. Language abilities impact on many aspects of educational progress, including literacy (Botting, Crutchley, & Conti-Ramsden, 1998; Snowling et al., 2001) and numeracy (Cowan, Donlan, Newton & Lloyd, 2005; Durkin, Mok & Conti-Ramsden, 2013, 2015). Both reading, and numeracy are drawn upon substantially in tasks such as processing literature about financial products, making purchases, form filling, and communications with relevant bodies (Grohmann, Kouwenberg & Menkhoff, 2015; LeFevre, et al., 2010). Hence, there are grounds to expect talking, reading and making decisions and calculations about money to be challenging for those with DLD.

Similarly, in general, adolescents and young adults with DLD tend to lag behind their typical peers in terms of attaining independence in everyday life skills (Conti-Ramsden & Durkin, 2008). They tend to be less self-efficacious in various domains (Botting, Durkin, Toseeb, Pickles & Conti-Ramsden, 2016), they fare less well on entry to the job market (Conti-Ramsden & Durkin, 2012) and are less socially confident (Durkin, Toseeb, Botting, Pickles, & Conti-Ramsden, 2017). Self-efficacy is associated with financial capability (Xiao et al., 2015) and social confidence is associated with mastery of everyday personal and occupational tasks (Durkin et al., 2017; Smith & Betz, 2000). These considerations suggest that young people with DLD will be less capable of meeting the diverse demands of financial management and may well need greater support in this domain than do their typically developing peers.

Emerging evidence suggests that providing early targeted invention to certain groups may aid in ameliorating later adverse outcomes. Initiatives including Head Start, aimed at reducing the educational gap for disadvantaged families in the USA, report
favourable long-term outcomes in domains considered distal to the original intervention. For example, longitudinal studies have reported less obesity, depression (Currie & Neidell, 2007) and offending (Carneiro & Ginja, 2014) from cohorts who participated compared to disadvantaged families that did not. In the same vein, Winstanley and colleagues (Winstanley, Webb, & Conti-Ramsden, 2018) found a high prevalence of unidentified DLD in a young offender population, although in young adults with identified DLD who had received early targeted intervention in language units they found there were less adversarial contacts with their local police service. Thus, it is possible that early professional intervention may confer an environment whereby optimum outcomes are realised.

Evidence on financial capability in young people with DLD is limited. Conti-Ramsden and Durkin (2008) found that, for adolescents with DLD, parents reported that 74% could manage money, while 94% of parents of typically developing adolescents perceived their offspring as capable in this domain. Note that, at this age (16 years), money management is likely to be more elementary (e.g., dealing with pocket money, income from part-time work) than in early adulthood, a time when young people are dealing with a wider range of self-organisational matters and more factors external to the parental home. Furthermore, there was some discrepancy between parental reports and self-reports. Adolescents with DLD themselves were more confident, with 86% reporting that they were able to manage money (typically developing adolescents, at 98%, were only marginally more likely to see themselves as competent in this respect than their parents estimated them to be). These findings suggest that, at least in adolescence, some young people with DLD may have been unaware of their own limitations concerning money management and/or that they underestimated the contributions of any parental support that they may have been obtaining. Conti-Ramsden and Durkin, however, had only one item concerning money and there is a need for more wide-ranging measures, which the present study provides. This investigation examines financial capability during the more testing
period of early adulthood and develops a reliable measure of functional financial literacy that examines young adults’ abilities to deal with everyday monetary transactions. We expected that financial capability of young adults with DLD would be limited when compared to that of AMPs and, in turn, that functional financial literacy would be particularly poor in individuals with DLD. We also posit that young people with DLD would report obtaining more support with financial management than their AMPs. Finally, we hypothesised that language, reading and numeracy would all be significantly associated with functional financial literacy in young adults with DLD.

3.3 Method

3.3.1 Ethics

The study reported here received ethical approval from The University of Manchester. All participants provided informed written consent.

3.3.2 Participants

Young adults with DLD: The reported study focuses on young adults at age 24 years, all of whom had a history of identified DLD (referred to henceforth as ‘young adults with DLD’ for ease of reading). The participants were originally part of the longitudinal Manchester Language Study (MLS), which examined an initial cohort of 242 children (Conti-Ramsden et al., 1997). These children represented a random sample of 50% of all 7-year olds attending 118 language units from across England for at least half of the school week.

Participants were contacted at ages 8 (n=232), 11 (n=200), 14 (n=113), 16 (n=139), and 24 (n=84). Funding constraints contributed to the attrition at these follow up stages. The current sample, 35% of the original cohort, consisted of 56 (67%) males and 28 (33%) females, ranging in age between 23.4 years and 25.9 years ($M = 24.4; SD = 0.7$ years). To examine potential attrition bias, we compared the receptive language, expressive language, nonverbal IQ and gender distribution of individuals with a DLD who continued to participate at 24 years and those who did not. There
were no significant differences in receptive language ($t(240) = -1.13, p = .261$), expressive language ($t(229) = -0.45, p = .654$), and nonverbal IQ ($t(231) = -0.60, p = .547$) standard scores at age 7 between those who participated at age 24 and those who did not. At age 24 years, the gender distribution in the DLD group (67% male; 33% female) was not significantly different from that of the comparison group (56% male; 44% female, see below), $\chi^2(1, N = 172) = 2.18, p = .140$.

Aged-matched peers (AMPs): The comparison group consisted of 88 aged-matched peers, 49 (56%) of whom were males and 39 (44%) of whom were females, ranging in age between 22.3 years and 26.0 years ($M = 24.1; SD = 0.9$ years). The comparison group had no history of receiving speech or language therapy or of special educational needs provision (as ascertained by teacher report). Sixty-six of these young adults were recruited at age 16 years and 22 young adults were recruited for the age 24 wave of the Manchester Language Study. The age 16 participants were recruited from the same schools as the participants with DLD as well as additional targeted mainstream schools. For the age 24 wave, areas with specific sociodemographic profiles were selected for sampling and recruiting comparison peers so that their backgrounds would be similar to the participants with DLD. Thus, the 22 young adults recruited matched the original sample in terms of age and socioeconomic status as measured by personal income. All participants had remained in school until the end of compulsory education (in the UK, at 16 years on average). The DLD and the AMP groups did not differ on household income at age 16 years ($\chi^2(10, N = 145) = 9.32, p = .501$) or on personal income at age 24 years ($\chi^2(5, N = 131) = 7.38, p = .194$).

Psycholinguistic profiles of participant groups: Comparisons of mean standard scores for participants with DLD vs AMPs, including standard deviations, are presented in Table 1. All scores for the AMPs were within the expected range. The mean language scores for the young adults with DLD was more than 1 standard deviation below the
Mean nonverbal IQ scores were within the expected range and close to the population average. The participants with DLD, however, had significantly lower nonverbal IQ scores than their peers. Evidence suggests that the nonverbal abilities of individuals with DLD may decline in adolescence (Botting, 2005; Leonard, 2014).

### Table 1. Psycholinguistic profiles of participant groups

<table>
<thead>
<tr>
<th>Group</th>
<th>DLD Range (N = 84)</th>
<th>AMP Range (N = 88)</th>
<th>t</th>
<th>df</th>
<th>Mean Difference [95% CI]</th>
<th>Cohen's $d$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonverbal IQ</strong></td>
<td>98.8 (15.8)</td>
<td>111.9 (10.3)</td>
<td>6.4***</td>
<td>167</td>
<td>13.1 [9.1, 17.2]</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>82.4 (17.3)</td>
<td>105.9 (9.3)</td>
<td>11.0***</td>
<td>167</td>
<td>23.6 [19.3, 27.8]</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>Expressive</strong></td>
<td>81.6 (19.0)</td>
<td>105.6 (8.9)</td>
<td>9.8***</td>
<td>167</td>
<td>24.1 [19.3, 28.8]</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Receptive</strong></td>
<td>83.5 (18.6)</td>
<td>106.2 (8.9)</td>
<td>10.1***</td>
<td>168</td>
<td>22.7 [18.3, 27.1]</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Reading</strong></td>
<td>34.7 (6.1)</td>
<td>42.3 (2.8)</td>
<td>10.5***</td>
<td>167</td>
<td>7.6 [6.2, 9.0]</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>43.7 (7.6)</td>
<td>52.2 (3.3)</td>
<td>9.5***</td>
<td>168</td>
<td>8.5 [6.7, 10.3]</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Reading Comp</strong></td>
<td>25.4 (6.0)</td>
<td>31.9 (3.1)</td>
<td>8.8***</td>
<td>167</td>
<td>6.5 [5.0, 7.9]</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Numeracy</strong></td>
<td>75.2 (13.7)</td>
<td>90.4 (12.5)</td>
<td>7.5***</td>
<td>168</td>
<td>15.2 [11.2, 19.2]</td>
<td>1.2</td>
</tr>
</tbody>
</table>

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3.3.3 Materials and Measures

Psycholinguistic measures of nonverbal, language, reading and arithmetic skills.

Nonverbal IQ

The Wechsler Abbreviated Scale of Intelligence (WASI, Wechsler, 1999) Performance subscale was administered as a measure of nonverbal IQ and standard scores were calculated. This test has norms for individuals aged 6 to 89 years. The reliability of the Performance IQ scale for the age range 20-24 years is .94. Validity studies of the WASI reported in the manual provide evidence that the test is a valid quick screening measure of intellectual functioning.

Language

To assess language ability, the Clinical Evaluation of Language Fundamentals (CELF-4th) (Semel et al., 2006) was utilised. The CELF-4 is a standardised assessment and is normed up to age 21 years 11 months. Despite the slightly older age of this current cohort compared to the normed age of the test, no participant reached ceiling level. This, coupled with the lack of standardised language assessments available for adults, meant the CELF-4 was deemed the most suitable instrument. Two sub-tests of the CELF-4 were utilised, consisting of word classes receptive language measure (WCR) which requires the participant to listen to a list of four words and decide which two are related. This sub-test relies on the ability to comprehend associations among words and is concerned with the structural aspect of language. Formulating sentences expressive language subtest (FS) requires the participant to formulate a sentence, including a given word, based on a picture shown. This measures the ability to articulate in a coherent logical order illustrating both vocabulary use and sentence structure. For the age range 17.0-21.11 years, the reliability of the WCR subtest was .88 and for the FS subtest it was .82. Clinical validation studies of the CELF-4 reported in the manual indicate that the test is sensitive to language impairment in children, adolescents and young adults. The overall measure of language used for
analyses was based on the mean of the two CELF-4 sub-tests.

Reading

Basic Reading (tapping reading accuracy) and the Reading Comprehension subtests of the Wechsler Objective Reading Dimensions (WORD, Wechsler, 1993) were used to obtain an overall reading score. This score was calculated as the mean of these two subtests. As this test only provides normative data up to 16.11 years, raw scores were used for analyses purposes. The WORD manual details good reliability (basic reading: .91; reading comprehension: .86) and validity (basic reading: .80; reading comprehension: .81).

Numeracy

Numeracy was assessed using the arithmetic subtest of the Wide Range Achievement Test – Third edition (WRAT-3; Wilkinson, 1993). This test can be used with people aged 5 to 75 years. The WRAT-3 has been found to have good reliability (.92 to .93) and validity (.83 to .87).

Measure of financial capability

We examined three of the strongest dimensions comprising financial capability discussed in the literature: ‘managing money’, ‘planning ahead’ and ‘making choices’ (Atkinson et al., 2006). We operationalised ‘making choices’ with a measure of engagement with financial products (referred to as ‘financial products’ henceforth). We utilised, and supplemented, questions from the British Household Panel Survey (University of Essex; BHPS Waves 1-18, 1991-2009), to capture these three different dimensions of financial capability.

Managing Money

Managing money was measured with three questions. We utilised a survey question from the BHPS that has previously been adopted in empirical studies (Atkinson et al., 2006; Taylor et al, 2011) and added two bespoke questions. Following the BPHS we asked: “How well would you say you yourself are managing financially these days?”
Responses were provided on a scale from 1 (‘finding it very difficult’) through to 5 (‘managing comfortably’). We then asked two further questions: “Do you know your monthly expenditure?” (taking the values 0 for ‘no’ and 1 for ‘yes’), and “Do you pay regular bills on time?” (values ranging from 1 for ‘never’ through to 5 for ‘always’).

Planning Ahead
To address the dimension of planning ahead, a further question from the BHPS was utilised, i.e. “Do you save any amount of your income?”, the values 0 for ‘no’ and 1 for ‘yes’ were ascribed to this question. Additionally, participants were asked “How well do you plan your spending” (taking values from 1 ‘not at all’, to 5 ‘very well’).

Financial Products
We asked participants about their engagement with nine financial products: mortgages, current accounts, savings accounts (including overdrafts, credit cards, store cards, student loans, finance deals - e.g. for large purchases such as a car or a sofa, and loans - not including student loans). Participants received 1 point for each of the financial products they possessed, yielding a maximum possible score of 9. In addition, we examined how participants accessed financial products by asking: “How do you access your financial products most often?”. The options included online banking, telephone banking, face-to-face services, ATM machines (referred to colloquially as ‘hole in the wall’), or other services.

Measures of functional financial literacy
We were also interested in examining everyday functional aspects of managing money in early adulthood for individuals with DLD, i.e., functional financial literacy. This was measured by three bespoke questions designed to consider an individual’s ability to manage everyday monetary transactions and decipher financial data in real time. Participants were asked: “Can you easily add up the cost of several items before you pay for them?”, “Can you work out in advance what change you might get?”, and “Can you easily work out which brand is the best value for money?”. Each question was scored on a scale from 1 for ‘not often’, 2 for ‘sometimes’, and 3 for ‘most of time’;
the higher the score, the better the young person’s functional financial literacy skills. Results from the Cronbach’s alpha indicated reliability was very good, $\alpha = 0.80$, for this measure.

Measures of financial support

Participants were asked a series of questions pertaining to support they obtained with their finances. First, they were asked if they obtained any regular support and, if so, from whom. Four potential sources were offered: parent, partner, friend or other. Participants who reported that they did receive support were then asked to indicate, from a list, the particular type of support. The list included: help with paying bills, choosing financial products, applying for financial products, managing money and managing debt. Respondents were also asked if they had ever sought financial help from friends and family in the form of a loan.

3.4 Statistical Analysis

The data were analysed using SPSS Version 20. Comparisons were based on two-sample $t$-tests and for categorical variables, Chi-squares (see Tables 2 and 3). Associations were examined using Pearson correlation analyses. Univariate and multivariable linear regression models were fitted to examine predictors of functional financial literacy. Group membership (DLD coded as 0 and AMP coded as 1) was included as an independent (predictor) variable. When conducting sensitivity analysis, we applied a Bonferroni correction for the different financial capability measures, yielding a corrected two-tailed significance level of $p = .005$.

3.5 Results

Financial capability

Results of the three aspects of financial capability are presented in Table 2. There were significant group differences (with medium effect sizes) for financial products, but, in general, not for managing money and planning ahead domains. The one
exception was “Do you know your monthly expenditure?”. A lower proportion of individuals with DLD (80% vs 92% for AMPs), responded positively to knowing their monthly expenditure. Applying the Bonferroni correction, when conducting sensitivity analysis, meant this variable was no longer statistically significant.
<table>
<thead>
<tr>
<th>Financial Capability</th>
<th>DLD</th>
<th>AMP</th>
<th>Test Statistic</th>
<th>p value</th>
<th>Mean Difference</th>
<th>Cohen's d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing Money</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DLD</td>
<td>AMP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How well would you say you are managing financially these days?</td>
<td>4.0 (.8)</td>
<td>3.9 (.8)</td>
<td>t(164) = .6</td>
<td>.54</td>
<td>.08 [-.17, .32]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 – 5</td>
<td>2 – 5</td>
<td>n = 79</td>
<td>n = 87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you know your monthly expenditure?</td>
<td>Yes =80%</td>
<td>Yes = 92%</td>
<td>$\chi^2(1, N = 167) = 5.0$</td>
<td>.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No = 20%</td>
<td>No = 8%</td>
<td>n = 80</td>
<td>n = 87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you pay regular bills on time?</td>
<td>4.9 (.4)</td>
<td>4.8 (.6)</td>
<td>t(140) = 1.4</td>
<td>.18</td>
<td>.12 [-.05, .28]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 – 5</td>
<td>2 – 5</td>
<td>n = 60</td>
<td>n = 82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning Ahead</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DLD</td>
<td>AMP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you save any amount of your income?</td>
<td>Yes = 57%</td>
<td>Yes = 56%</td>
<td>$\chi^2(1, N = 167) = .02$</td>
<td>.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No = 43%</td>
<td>No = 44%</td>
<td>n = 80</td>
<td>n = 87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How well do you plan your spending?</td>
<td>3.6 (1.1)</td>
<td>3.4 (1.1)</td>
<td>t(165) = 1.5</td>
<td>.14</td>
<td>.26 [-.08, .60]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 – 5</td>
<td>1 – 5</td>
<td>n = 80</td>
<td>n = 87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of products</td>
<td>2.9 (1.3)</td>
<td>4.0 (1.5)</td>
<td>t(163) = - 5.0</td>
<td>&lt;.001</td>
<td>-1.09 [-1.51, - .65]</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>1 – 6</td>
<td>1 – 8</td>
<td>n = 80</td>
<td>n = 85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How products were accessed:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online Banking</td>
<td>33%</td>
<td>68%</td>
<td>$\chi^2(1, N = 169) = 20.6$</td>
<td>&lt;.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone Banking</td>
<td>2%</td>
<td>2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face to Face Services</td>
<td>10%</td>
<td>6%</td>
<td>$\chi^2(1, N = 169) = .95$</td>
<td>.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATM Machines</td>
<td>49%</td>
<td>23%</td>
<td>$\chi^2(1, N = 169) = 12.3$</td>
<td>&lt;.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Services</td>
<td>6%</td>
<td>1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n = 82</td>
<td>n = 87</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Chi-square analyses for “how products were accessed” were only undertaken when the expected frequencies were > 5
Functional financial literacy

An independent-samples *t*-test comparing the mean functional financial literacy scores of the two groups found a significant difference between the means of the two groups

\[ t(165) = -8.45, \text{mean difference} = -1.88 [95\% \text{ CI} = -2.32, -1.44], p = <.001, \text{with a large effect size (Cohens' } d=1.46). \text{ The mean of the DLD group was significantly lower (} m = 6.91, SD = 1.92) \text{ than the mean of the AMP group (} m = 8.79, SD = .749). \]

Support with finances

Almost half, 48% (38/80) of the DLD group reported obtaining support, contrasting with 16% (14/87) of AMPs. This difference was significant, \( \chi^2 (1, N=167) = 19.17, p = <.001. \) The majority of this support, in both groups, came from parents. Within the DLD group 43% (36/84) reported receiving support from their parents whilst only 14% (12/88) of AMPs reported receiving this support, \( \chi^2 (1, N=167) = 18.24, p = <.001. \) Table 3 details the types of support regarding finances obtained by participants. For each type of support, there were significant group differences.

**Table 3. Frequency of support obtained by group**

<table>
<thead>
<tr>
<th>Measure</th>
<th>DLD</th>
<th>AMP</th>
<th>Chi-square</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paying bills</td>
<td>80</td>
<td>12</td>
<td>87</td>
<td>1</td>
</tr>
<tr>
<td>Choosing financial products</td>
<td>80</td>
<td>22</td>
<td>87</td>
<td>4</td>
</tr>
<tr>
<td>Applying for financial products</td>
<td>80</td>
<td>14</td>
<td>87</td>
<td>1</td>
</tr>
<tr>
<td>Managing money</td>
<td>80</td>
<td>10</td>
<td>87</td>
<td>1</td>
</tr>
<tr>
<td>Loans from family &amp; friends</td>
<td>80</td>
<td>24</td>
<td>87</td>
<td>10</td>
</tr>
</tbody>
</table>
Examination of Associations

We examined the relationships between the psycholinguistic characteristics of the participants and functional financial literacy. Because financial literacy showed large between-groups difference, we report the correlations for each group separately. The findings are presented in Table 4. In terms of functional financial literacy, the only association in the AMP group was with numeracy \((rs = .26, p = .02)\), this was also evident in the DLD group \((rs = .55, p < .001)\), but additionally, functional financial literacy was associated with language, literacy and nonverbal IQ.

**Table 4.** Associations between functional financial literacy and other abilities

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Functional Financial Literacy</td>
<td>1</td>
<td>DLD: 0.54***</td>
<td>1</td>
<td>DLD: 0.32***</td>
<td>1</td>
</tr>
<tr>
<td>2. Nonverbal IQ</td>
<td>DLD: 0.54***</td>
<td>1</td>
<td>AMP: 0.16</td>
<td>DLD: 0.53***</td>
<td>1</td>
</tr>
<tr>
<td>3. Core Language</td>
<td>DLD: 0.32***</td>
<td>1</td>
<td>AMP: -0.05</td>
<td>DLD: 0.53***</td>
<td>1</td>
</tr>
<tr>
<td>4. Overall Reading</td>
<td>DLD: 0.29**</td>
<td>1</td>
<td>AMP: 0.03</td>
<td>DLD: 0.53***</td>
<td>1</td>
</tr>
<tr>
<td>5. Numeracy</td>
<td>DLD: 0.55***</td>
<td>1</td>
<td>AMP: 0.26</td>
<td>DLD: 0.55***</td>
<td>1</td>
</tr>
</tbody>
</table>

DLD = Developmental Language Disorder, AMP = Age Matched Peer  `p<.05,  "p<.01,  ***p<.001

Functional Financial Literacy

A multivariable linear regression was performed with functional financial literacy as the outcome. The predictors were the psycholinguistic variables and group status (DLD coded as 0 and AMP coded as 1). Multicollinearity tests indicated that all the variance inflation factors (VIFs) were all below 4 and tolerance was never less than 0.2 for any of the covariates. An analysis of standardised residuals identified one outlier, with casewise diagnostics revealing that this outlier was more than 3 standard deviations
below the mean. Removal of the outlier had no effect on the pattern or results or significance levels; therefore, the data point was retained. Table 5 presents the results.

**Table 5.** Regression analysis for variables predicting functional financial literacy skills in young adults at age 24

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>95% CI</td>
</tr>
<tr>
<td>(Constant)</td>
<td>3.222</td>
<td>1.035</td>
<td></td>
</tr>
<tr>
<td>Nonverbal IQ</td>
<td>.026</td>
<td>.010</td>
<td>.006, .046</td>
</tr>
<tr>
<td>Core Language</td>
<td>-.005</td>
<td>.011</td>
<td>-.027, .017</td>
</tr>
<tr>
<td>Reading</td>
<td>.007</td>
<td>.032</td>
<td>-.055, .069</td>
</tr>
<tr>
<td>Numeracy</td>
<td>.032</td>
<td>.010</td>
<td>.012, .052</td>
</tr>
<tr>
<td>Group</td>
<td>-1.086</td>
<td>.263</td>
<td>1.605, -.568</td>
</tr>
</tbody>
</table>

The adjusted $R^2$ values showed that together the predictors accounted for 44% of the variance of functional financial literacy ($F (5,164) = 26.70, p = < .001; \text{adj. } R^2 = .44$). Three variables emerged as significant predictors: nonverbal IQ, numeracy and group status. Comparisons of the standardised regression coefficients suggested that the effect of group status accounted for the greatest proportion of variance in the model, with functional financial literacy scores decreasing by almost a third with DLD group membership.

To investigate these group differences further, separate regression analyses were carried out for the two groups separately. Results are shown in Table 6.
Table 6. Regression analysis for variables predicting functional financial literacy in young adults at age 24 by group status

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>95% CI</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DLD Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.290</td>
<td>1.286</td>
<td></td>
<td>.82</td>
</tr>
<tr>
<td>Nonverbal IQ</td>
<td>.031</td>
<td>.016</td>
<td>-.001, .064</td>
<td>.257</td>
</tr>
<tr>
<td>Core Language</td>
<td>-.020</td>
<td>.019</td>
<td>-.057, .017</td>
<td>-.182</td>
</tr>
<tr>
<td>Reading Numeracy</td>
<td>.014</td>
<td>.048</td>
<td>-.082, .111</td>
<td>.047</td>
</tr>
<tr>
<td>Numeracy</td>
<td>.062</td>
<td>.020</td>
<td>.023, .102</td>
<td>.463</td>
</tr>
<tr>
<td><strong>AMP Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>8.184</td>
<td>1.311</td>
<td></td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Nonverbal IQ</td>
<td>.004</td>
<td>.010</td>
<td>-.015, .023</td>
<td>.055</td>
</tr>
<tr>
<td>Core Language</td>
<td>-.005</td>
<td>.101</td>
<td>-.025, .015</td>
<td>-.058</td>
</tr>
<tr>
<td>Reading Numeracy</td>
<td>-.020</td>
<td>.035</td>
<td>-.090, .049</td>
<td>-.077</td>
</tr>
<tr>
<td>Numeracy</td>
<td>.017</td>
<td>.008</td>
<td>.001, .032</td>
<td>.278</td>
</tr>
</tbody>
</table>

For the DLD group, the regression was significant \(F(4,78) = 9.763, p = < .001\; \text{adj. } R^2 = .31\), accounting for 31% of the variance with numeracy as the only significant predictor. The regression equation for the AMP group was non-significant \(F(4,85) = 1.755, p = .146\; \text{adj. } R^2 = .03\). We ran a second sensitivity analysis, omitting the participants with core language scores falling outside of the range expected for their group status. This revealed the same set of results; for the DLD group the regression was significant \(F(4,31) = 6.021, p = .001\; \text{adj R = .33}\), but it was not significant for the AMP group \(F(4,78) = 1.763, p = .145\; \text{adj R = .04}\). See Appendix 1 for the regression table.
3.6 Discussion

This is the first study to consider the financial capability skills and functional financial literacy of young adults with DLD. The findings reveal that the consequences of this disability extend to important practical domains of early adult life. Compared to typically developing AMPs, young people with DLD report less extensive engagement with financial products and lower competence in functional financial literacy. A considerably higher proportion of those with DLD (48% vs 16% of AMPs) report that they draw on support, primarily from parents, in various financial tasks, including paying bills, choosing financial products, and taking loans from family or friends. Extending earlier evidence of a lag in achieving personal independence during adolescence (Conti-Ramsden & Durkin, 2008), the present study shows that managing everyday financial affairs poses challenges for those with DLD and leaves many in need of continuing parental support.

We did not find the expected difference between DLD and AMP groups in respect of managing money and planning ahead. On first glance this may appear encouraging, with mean scores (Table 2) indicating that both groups regarded themselves as being reasonably competent at managing money and planning ahead financially. However, this finding should be interpreted cautiously for several reasons. First, approximately half of the participants with DLD also acknowledged that they needed parental support; hence, for them, 'managing money and planning ahead' in this context may be socially-mediated rather than fully independent activities. Second, and related to the first point, young people participating in this study were individuals with identified DLD who had received early targeted intervention in language units. Such early professional intervention with children and their families may confer an environment that fosters parental support and understanding of individuals' long-term needs. In this study, therefore, we may be observing optimal outcomes in relation to managing finances (see also Winstanley et al., 2018). Third, the extent and adequacy of managing money
and forward planning in either group were not tested, and many young people with or without language difficulties may, for example, plan only for the relatively short-term, especially if they have not received targeted financial education (Xiao & O’Neill, 2016). In this sense, the item regarding knowing monthly expenditure may be an indicator of potential areas of difficulty when planning beyond the short-term. Further evidence on emerging financial performance is needed before we can be confident that those with DLD are as able as their peers in managing money and planning ahead financially.

The findings concerning modes of access to financial products also suggest more limited strategies for money management in those with DLD. They were markedly less likely than their typical peers to use online banking facilities and were more likely to use ATMs. The information technology demands of online access present barriers to people with disabilities (Dobransky & Hargittai, 2006). During mid-adolescence, young people with DLD are less likely than their peers to use the Internet to make purchases (Durkin, Conti-Ramsden, Walker & Simkin, 2009). On the other hand, those with DLD seem to favour the relatively direct access to cash provided by ATMs. Cash machines are designed to be very user-friendly and most aspects of transactions therein can be completed with simple ‘press option’ actions. Although this is a very widely used and convenient banking mechanism, a possible disadvantage of high dependence upon them is losing track of spending. Alternatively, for some individuals, using cash may be provide a more concrete (tangible and visual) means of monitoring their own spending.

Relationships among functional financial literacy and other abilities revealed differences between the groups. In the DLD group, there was a significant association with reading, language and nonverbal IQ. In contrast, for the AMPS, the only association found for functional financial literacy was a weak association with numeracy. In multivariable regression analyses, only in the DLD group did the model provide a good fit to the data, with the explanatory variables accounting for 31% of the variance.
Not surprisingly, functional financial literacy was associated with numeracy in both groups. There is extensive evidence of poorer performance in numeracy and mathematics in children and adolescents with DLD (Cowan et al., 2005; Durkin et al., 2013, 2015; Young et al., 2002). The present findings indicate that the consequences of this relationship extend beyond academic performance, and place young adults with DLD at a disadvantage in managing their finances. Our measure pertaining to functional financial literacy consisted of a series of questions. Future research could consider practical exercises to measure functional financial literacy such as, asking participants to calculate the price of multiple goods or the price when discounted by a certain percentage.

Proficiency in mathematics relies on the understanding of technical domain-specific vocabulary (Lyytinen, Ahonen & Rasanen, 1994), the ability to decipher complex written problems (Woodward & Peters, 1983) and the understanding that a range of mathematical words can be used interchangeably (Purpura & Ganley, 2014), all of which are linguistic tasks. The hierarchical nature of mathematical knowledge dictates that early difficulties are precursors to more marked difficulties over time (Aunola, Leskinen, Lerkkanen & Nurmi, 2004). We found an association between numeracy and language across the linguistic range. The statistical correlations (Table 4) suggest that, although this is present irrespective of ability, the association appears to be stronger in the lower range of abilities. Our study adds to previous research and provides evidence that the association of language and numeracy does not attenuate over time among young adults with a history of DLD. Additionally, we provide evidence that these difficulties manifest in ways that affect subsequent functioning in adult life.

### 3.7 Conclusions

This study provides unique information pertaining to the financial capability and functional financial literacy skills of young adults with DLD. Young adults with DLD are
not excluded from the financial world, but it is (another) aspect of the human environment that can present special challenges to them. The study augments earlier findings that language ability supports the acquirement of arithmetic skills, and this association is much stronger in the DLD group. We provide novel evidence that some young adults with DLD lack functional financial skills and require assistance to be able to manage their finances. This has policy implications that relate not only to engaging those at risk in discussions about financial management but also to wider familial support.
3.8 Appendix 1.

Table 7. Regression analysis for variables predicting functional financial literacy in young adults at age 24 by group status (sensitivity analysis).

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>95% CI</td>
</tr>
<tr>
<td><strong>DLD Group</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-0.888</td>
<td>2.249</td>
<td></td>
</tr>
<tr>
<td>Nonverbal IQ</td>
<td>0.057</td>
<td>0.024</td>
<td>0.010, 0.105</td>
</tr>
<tr>
<td>Core Language</td>
<td>-0.025</td>
<td>0.034</td>
<td>-0.093, 0.043</td>
</tr>
<tr>
<td>Reading</td>
<td>-0.006</td>
<td>0.057</td>
<td>-0.122, 0.110</td>
</tr>
<tr>
<td>Numeracy</td>
<td>0.058</td>
<td>0.029</td>
<td>0.000, 0.117</td>
</tr>
<tr>
<td><strong>AMP Group</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>9.332</td>
<td>1.398</td>
<td></td>
</tr>
<tr>
<td>Nonverbal IQ</td>
<td>-0.001</td>
<td>0.010</td>
<td>-0.022, 0.020</td>
</tr>
<tr>
<td>Core Language</td>
<td>-0.017</td>
<td>0.015</td>
<td>-0.046, 0.012</td>
</tr>
<tr>
<td>Reading</td>
<td>-0.005</td>
<td>0.036</td>
<td>-0.077, 0.067</td>
</tr>
<tr>
<td>Numeracy</td>
<td>0.018</td>
<td>0.008</td>
<td>0.002, 0.034</td>
</tr>
</tbody>
</table>
Chapter 4: Psycholinguistic and socioemotional characteristics of young offenders: do language abilities and gender matter? 

(Study 3)

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The presentation and reference style used for the manuscript has been altered in the interest of consistency with other chapters in this thesis.
4.1 Abstract

Purpose: Previous research demonstrates an association between Developmental Language Disorder (DLD) and criminal offending. International research also implicates alexithymia as being over-represented in forensic samples. This study provides a comprehensive examination of the psycholinguistic and socioemotional profiles of males and females in the youth justice system, with a focus on first time entrants. In the context of Restorative Justice (RJ) underpinning youth justice disposals, this allows for informed intervention and identifies those who may be compromised in their ability to effectively engage in certain interventions.

Methods: Participants ($N = 145$) from a triage centre and youth offending teams, with a mean age of 15.8, completed a range of standardised psycholinguistic assessments considering nonverbal IQ, expressive and receptive language measures and literacy. Additionally, socioemotional measures completed included The Alexithymia Scale and the Strengths and Difficulties Questionnaire.

Results: DLD was present in 87 participants. Except for the emotional score, no statistically significant gender differences were found. The mean language scores for the DLD group were more than 2.25 standard deviations below the normative mean and they demonstrated greater literacy difficulties. A high proportion of the group met the criteria for alexithymia/possible alexithymia (60%), and this was not associated with DLD.

Conclusions: High prevalence values for DLD and socioemotional difficulties, not generally gender specific, were found. These difficulties have the possibility to compromise a young person’s ability to engage in rehabilitative strategies. Language assessment and identification of difficulties, especially DLD, upon entry to the youth justice service would assist when planning interventions.
4.2 Introduction

Youth offending is a serious problem that is costly to society (Romeo, Knapp & Scott, 2006), degrades local environments and can evoke fear in citizens (Jacobson & Kirby, 2012). Careful consideration and an understanding of the correlates of youth offending, including the psycholinguistic and socioemotional characteristics of the young people involved in offending is, therefore, warranted. In particular, the role of language not only contributes to this characterisation but also provides an approach for identifying clusters of difficulties in the profiles of young offenders with and without Developmental Language Disorder (DLD). Such knowledge can inform policy as well as practice, in particular those involved in the planning and development of rehabilitation strategies.

DLD refers to significant, persistent problems understanding and/or using spoken language that are not attributable to other difficulties such as hearing impairment or Autistic Spectrum Disorder (Bishop et al., 2016; 2017). Recent evidence has highlighted an association between offending and DLD, which persists even after controlling for potential confounders such as socioeconomic position and years of schooling (Bryan et al., 2015; Hopkins et al., 2018; Snow & Powell, 2008). The deficits youth offender samples display in language-based tasks have covered all domains of language, including receptive, expressive and figurative (Bryan et al, 2015; Snow et al., 2016). Additionally, these language-based tasks have considered the form, content and use of language from word (Lount et al., 2017) to sentence level (Bryan et al., 2007) and then to extended discourse including narrative (Snow & Powell, 2005) and expository (Hopkins et al, 2018) discourse. It has consequently been demonstrated that approximately 50% of young offenders have language deficits that would warrant a diagnosis of DLD, but which have previously gone unrecognised (Gregory & Bryan 2011; Snow & Powell, 2012). In this study, we determine the language as well as non-verbal abilities of a group of young first-time offenders on community orders in the North-West of England.
Difficulties with reading have been linked with behavioural problems in childhood in both the conduct and hyperactivity domains (Maughan et al., 1996; Tomblin et al., 2000; St Clair et al., 2011) and research has supported the link between early oral language skills and later reading ability (Oakhill & Cain, 2012). Snowling and colleagues considered the literacy skills of 91 incarcerated young offenders in the UK with a mean age of 16 and found the young offenders performed at a mean age of 11.3 significantly below their chronological age and that of a control group recruited from local schools (Snowling et al., 2000). Additionally, reading comprehension has been noted as a predictor of recidivism in a group of incarcerated youths aged 16 – 19 (Rucklidge et al., 2013). In this study we aimed to describe in detail the reading skills of a group of young first-time offenders.

Childhood conduct problems have also been associated with adult criminality (Moffitt, Caspi, Harrington & Milne, 2002), and behavioural difficulties in childhood and adolescence often precede contact with the YJS. The literature pertaining to the prevalence of DLD in children exhibiting conduct problems is similar to the youth offending literature with concerns being raised regarding the referral of children to services that target the visible externalising behaviour problems with little consideration given to underlying language abilities (Cohen et al., 1998). It is now well established that children with DLD are at increased risk of experiencing social, emotional, and behavioural difficulties (Durkin & Conti-Ramsden, 2010). In a longitudinal study by Beitchman and colleagues (1996), lower scores on expressive and receptive language measures identified the children with the highest probability of developing internalising and externalising disorders. A recent meta-analysis reported that children with a history of DLD were almost twice as likely to meet the criteria for internalising problems and over twice as likely to meet criteria for an externalising problem than their typically developing peers (Yew & O’Kearney, 2013). In contrast, the presence of prosocial traits is considered a protective factor for young people with DLD (Mok et al., 2014), and has been identified to have a strong negative correlation with behavioural
difficulties in children with DLD (Farmer, 2000). In this study we examine both externalising and internalising difficulties of a group of young first-time offenders, in addition to prosocial behaviours.

As part of the Crime and Disorder Act of 1988 Youth Offending Teams (YOTs) were established in every local authority in England and Wales between 1998 and 2000 (Youth Justice Board, 2010). Staff within YOTs oversee young people on a wide range of pre-court and post-court disposals as well as providing a triage service aimed at prevention. Unless they have committed a very serious offence, young first-time offenders are typically subject to diversionary approaches, known as triage, that aim to make up for harm caused and address their offending behaviour. This allows young people who have committed a minor first offence to be diverted from the formal YJS. Irrespective of the order, the YJB have detailed that Restorative Justice (RJ) should be considered as an underlying principle for all youth justice disposals (YJB, 2011, 2013). Often seen as a practice that links an offender to a pathway toward redemption (Sherman & Strang, 2012), RJ is described as “a process whereby all parties with a stake in a particular offence come together to resolve collectively how to deal with the aftermath of the offence and its implications for the future” (Marshall, 1996:37). In contrast to conventional courts, RJ can be described as “emotionally intense” (Angel et al, 2014), and the YJB detail that ‘communication between victim and offender can also produce powerful emotional responses leading to mutual satisfaction and socially inclusive outcomes’ (Home Office, 2012;18).

Young people who demonstrate language skills across multiple domains that fall well below what would be expected from their age and IQ may be compromised in their ability to effectively engage in restorative justice processes. Furthermore, socioemotional abilities, such as alexithymia may also be implicated in one’s ability to participate in rehabilitations with RJ principles at the centre. Alexithymia refers to a diminished ability to recognise and interpret emotions (Manninen et al, 2011) and an
externally orientated cognitive style (Nemiah et al., 1976). When considering a forensic population, Zimmermann (2006) compared juvenile offenders with demographically matched non-offenders when investigating the associations of alexithymia and delinquency in male adolescents. Regression analysis revealed that alexithymia alone, as measured by a self-report questionnaire, was a significant predictor of group membership (Zimmermann, 2006). Despite further personality and anxiety measures being added to the model, these did not reach significance. The author reported that the best goodness-of-fit statistic, with an overall correct classification result of 72%, included only alexithymia and family functioning. Given that the main elements of alexithymia include a difficulty in labelling emotions and expressing them to others it is logical to suggest that language difficulties may be implicated in the causal pathway. Conversely, alexithymic individuals display emotion processing difficulties on both verbal and nonverbal tasks (Wagner & Lee, 2008). This research, however, failed to take account of the effects of language difficulties on seemingly ‘nonverbal’ tasks and the knowledge that nonverbal IQ declines in individuals with DLD (Botting, 2005). Studies including individuals with acquired language difficulties (Henry, Phillips, Crawford, Theodorou & Summers, 2006) have found performance on language measures, such as verbal fluency, associated with difficulties identifying feelings. Similarly, an association between delayed early speech and elevated risk of alexithymia later in life has been reported among individuals with DLD (Karukivi et al, 2012). A recent study found alexithymia present, or likely to be present, in 59% of a sample consisting of 100 incarcerated young offenders (Snow et al, 2016). Despite alexithymia being associated with poor mental health it was not correlated with language difficulties in this sample. In this study, we investigate alexithymia on a group of young first-time offenders.

The growing literature concerning DLD and offending populations has predominately reported on male samples (Bryan et al, 2007, Snow & Powell, 2008). In cases whereby females have been included, the proportion of females has been small. This
has led to researchers undertaking analysis on the sample as a whole, regardless of gender (Gregory & Bryan, 2011; Hopkins et al, 2018). There are some exceptions. For example, a cross-sectional study examining language, emotion recognition and mental health of 15 young female offenders on community orders in Australia found that 4 participants met the study’s definition of DLD (Snow et al, 2016). This study supported earlier findings from Sanger and colleagues (Sanger et al., 2000) in the US, who considered 78 incarcerated female offenders with a mean age of 16. The authors found that 22% of the sample scored at least 1.3 standard deviations below the mean on the Clinical Evaluation of Language Fundamentals 3 (CELF-3, Semel & Secord, 2000). When the same authors considered a more comprehensive battery their results indicated that the girls were unable to provide synonyms for words such as ‘penalty’ and ‘justify’ and they could not adequately define terms such as ‘competent’, ‘caution’ or ‘priority’ (Sanger et al., 2003). A study considering the language differences between adjudicated and non-adjudicated adolescents reported a between-group difference but no within-group gender differences (Blanton & Dagenais, 2007). In this study we include, to the best of our knowledge, the largest sample of female young offenders in the United Kingdom (UK), to provide evidence of the point prevalence of DLD in females and examine gender differences in the psycholinguistic and socioemotional profiles of young offenders.

Profiling psycholinguistic and socioemotional abilities of young people in the youth justice service and determining key difficulties can be useful for both prevention and informing interventions that target specific needs. Most of the research in this area has focused on samples on custodial sentences (Bryan et al, 2015; Snow et al, 2016). In this investigation, we focussed on first time offenders aiming to provide novel data on young people who have their first contacts with the justice system.
Specifically, this study addresses three research questions in relation to a group of 145 young offenders attending community youth offending services in the North-West of England:

1) What is the context of young offenders? Offence characteristics, socioeconomic status and educational attainment in young offenders new to the youth justice service.

2) Are there gender differences in a) the prevalence of DLD and b) psycholinguistic and socioemotional characteristics of young offenders?

3) Is there a distinct profile of psycholinguistic and socioemotional difficulties of young offenders with and without DLD?

4.3 Method

4.3.1 Ethics

This study received ethical approval from The University of Manchester and informed written consent was gained from all participants. Due to the vulnerability of the young people, consent was also obtained from a parent or a guardian and, with the approval of the ethics committee, the young offenders’ case worker was permitted to act in loci parentis. The caseworker was therefore provided with a copy of the information sheet and asked to read it with the young person.

4.3.2 Participants and procedure

The sample included 145 young people, 96 of whom were first time entrants into the youth justice service in the North West of England. The mean age of the participants was 15.8 (SD 1.5) and their ages ranged from 12 to 17 years. The majority of the sample (112) was male (33 female). This is reflective of the latest national results published in 2017, which detail that 80% of first time entrants into the YJS are male and their mean age is 15.2 (Youth Justice Board, 2018).
Participants were tested over 1 or 2 sixty-minute sessions at which parents and youth offending team staff were encouraged to attend. Further information on recruitment and the procedures is provided in the online Supporting Information document.

4.3.3 Measures
Psycholinguistic, socioemotional and context measures were obtained (further details of each of the measures and statistical analysis used are provided in the online Supporting Information document).

Standardised psycholinguistic measures
Nonverbal IQ (NVIQ) was assessed using the performance subscale of The Wechsler Abbreviated Scale of Intelligence (WASI, Wechsler, 1999). For language abilities ‘formulating sentences’ (FS) (CELF-4; Semel, Wiig, & Secord, 2006) and the ‘understanding spoken paragraphs’ (USP) (CELF-4; Semel, Wiig, & Secord, 2006) subtests were administered. These combined subtests yielded a core language score.

For ascertaining DLD status, and to avoid over-diagnosis, we followed the recommendations made by Spencer, Clegg and Stackhouse (2012), who specified a score of 1.5 SD below the normative mean on the CELF-4 subscales to determine the frequency of unidentified DLD. Reading was measured using two tests: The Test of Word Reading Efficiency–Second Edition (TOWRE–2; Torgeson, Wagner & Rashotte, 1999) to assess ability to read printed words and Wechsler Individual Achievement Test (WIAT-II; Wechsler, 2005) to evaluate reading comprehension.

Socioemotional measures
The Alexithymia Scale (TAS-20; Bagby, Taylor & Parker, 1994) was used. The TAS-20 is a 20-item self-report scale measuring 1) difficulty describing feelings (‘It is difficult for me to find the right words for my feelings’); 2) difficulty identifying feelings (‘When I am upset I don’t know if I’m sad, frightened or angry’); 3) externally-orientated thinking (‘I prefer to just let things happen, rather than understand why they turned out that way’). Items are rated using a 5-point Likert scale whereby 1 = ‘strongly disagree’, 2 = ‘disagree’, 3 = ‘neutral’, 4 = ‘agree’ and 5 = ‘strongly agree’. Scores equal to or less
than 51 = non-alexithymia, 52 to 60 = possible alexithymia and scores equal to or greater than 61 = alexithymia. The Strengths & Difficulties questionnaire (SDQ; Goodman et al., 1998) was used to examine internalising and externalising difficulties. Specifically, conduct problems (e.g. ‘I get very angry’), hyperactivity (e.g. ‘I am easily distracted’), emotional difficulties (e.g. ‘I worry a lot’) peer relation problems (e.g. ‘I am usually on my own’), and, prosocial behaviour (e.g. ‘I try to be nice to others’). The latter scale, the prosocial scale, measures positive functioning (as opposed to difficulties). For each item, the young person could tick either ‘not true’, ‘somewhat true’ or ‘certainly true’, which reflect a score of 0, 1 and 2 respectively.

Contextual measures

The Index of Multiple Deprivation (IMD) was applied as an ecological measure of socioeconomic position. This is a residential postcode-based measure of area-level deprivation that represents the immediate locality of a person’s household and is calculated as a composite of the following seven domains of deprivation: income; employment; health and disability; educations skills and training; barriers to housing and services; crime; living environment (McLennan et al., 2011). The higher the score the greater the deprivation and overall the IMD can be divided into quintiles, with quintile 1 being the least deprived localities and quintile 5 the most deprived.

Detailed scrutiny of departmental files in each YOT and the triage centre took place. This was carried out to ascertain the nature of the offence the young person had committed as well as educational attainment (literacy and numeracy).

4.4 Results

All young offenders were either subject to triage intervention (49) or on community orders (96), with a duration ranging from one week to 24 months (Median = 6, IQR = 9). Mutually exclusive offence categories committed by participants are displayed in Figure 1.
In terms of socioeconomic position, the majority, 66% (95) of participants resided in quintile 5, the most deprived areas, 22% (32) were from quintile 4 and the remaining participants, 12% (18) were distributed in quintiles 1 – 3. Table 1 presents participants' levels of attainment for numeracy and literacy. These data were not available for young people in the triage system, nor were they available for all the young people accessed via the YOTs. Where data from records were available, over half the young offenders had poor attainment in literacy (53%) and numeracy (54%).
Table 1. Attainment in literacy and numeracy for the participants on entry to the youth justice service

<table>
<thead>
<tr>
<th></th>
<th>Literacy (n)</th>
<th>Percent</th>
<th>Numeracy (n)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below entry level</td>
<td>12</td>
<td>8</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Entry level 1</td>
<td>13</td>
<td>10</td>
<td>10</td>
<td>7</td>
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<tr>
<td>Expected by age 7</td>
<td></td>
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<tr>
<td>Entry level 2</td>
<td>8</td>
<td>5</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Expected by age 9</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Entry level 3</td>
<td>5</td>
<td>3</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Expected by age 11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td>23</td>
<td>16</td>
<td>24</td>
<td>17</td>
</tr>
<tr>
<td>GCSE D-G</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Level 2</td>
<td>11</td>
<td>8</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>GCSE A*-C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing Data</td>
<td>73</td>
<td>50</td>
<td>73</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>145</td>
<td>100%</td>
<td>145</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note. Based on available data (72 of the participants), approximately half the sample had not reached entry level 3 for numeracy and literacy expected by age 11 years.

Are there gender differences in the characteristics and DLD status of young offenders?

As evidenced in Table 2, there were virtually no statistically significant gender differences in the profiles of males versus females in the sample (with the exception of the emotional score indicating more difficulties among females). In terms of prevalence of DLD, no significant gender difference was evident: $\chi^2 (1) = 7.91, p = 0.37$. Of the 112 males in the study, 65 (58%) met the criteria as did 22 (67%) of the females. The young people showed a variety of different language profiles with the majority, 55 participants (38%), gaining scores indicative of having both expressive and receptive DLD. A smaller proportion, 12 participants (8%) displayed receptive difficulties only and 20 participants (14%) gained scores indicative of difficulties with the expressive domain. Given the gender similarities and the presence of DLD in nearly two thirds of
the sample, further analyses were carried out for the whole sample comparing those with and without DLD.

Table 2. Psycholinguistic and socioemotional profiles of male versus female young offenders.

<table>
<thead>
<tr>
<th></th>
<th>Gender</th>
<th>n</th>
<th>M (SD)</th>
<th>t</th>
<th>p</th>
<th>Mean Diff</th>
<th>95% CI</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td></td>
<td>Female</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NVIQ</td>
<td></td>
<td>110</td>
<td>87.6 (13.0)</td>
<td>.97</td>
<td>.33</td>
<td>2.30</td>
<td>-2.60, 7.60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31</td>
<td>85.2 (11.1)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Expressive Language</td>
<td>Male</td>
<td>112</td>
<td>77.2 (14.2)</td>
<td>.61</td>
<td>.55</td>
<td>1.73</td>
<td>-3.91, 7.38</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>33</td>
<td>75.4 (15.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receptive Language</td>
<td>Male</td>
<td>112</td>
<td>77.4 (15.4)</td>
<td>.17</td>
<td>.87</td>
<td>.52</td>
<td>-5.53, 6.55</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>33</td>
<td>76.9 (15.5)</td>
<td></td>
<td></td>
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<tr>
<td>Sight word reading</td>
<td>Male</td>
<td>76</td>
<td>83.0 (8.6)</td>
<td>-.20</td>
<td>.84</td>
<td>-.42</td>
<td>-4.53, 3.70</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>24</td>
<td>83.4 (9.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phonemic decoding</td>
<td>Male</td>
<td>75</td>
<td>88.1 (12.1)</td>
<td>-.42</td>
<td>.68</td>
<td>-1.16</td>
<td>-6.66, 4.33</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>24</td>
<td>89.3 (10.5)</td>
<td></td>
<td></td>
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<tr>
<td>Total word reading</td>
<td>Male</td>
<td>75</td>
<td>82.9 (11.5)</td>
<td>-.24</td>
<td>.81</td>
<td>-.65</td>
<td>-5.97, 4.57</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>24</td>
<td>83.6 (11.3)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Reading Comprehension</td>
<td>Male</td>
<td>44</td>
<td>81.7 (14.9)</td>
<td>-.19</td>
<td>.85</td>
<td>-.82</td>
<td>-9.44, 7.80</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>14</td>
<td>82.6 (10.7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Alexithymia (Total Tas-20)</td>
<td>Male</td>
<td>86</td>
<td>54.7 (11.5)</td>
<td>-1.58</td>
<td>.12</td>
<td>-4.18</td>
<td>-9.41, 1.06</td>
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<tr>
<td></td>
<td>Female</td>
<td>25</td>
<td>58.9 (12.0)</td>
<td></td>
<td></td>
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<tr>
<td>Difficulty identifying feelings</td>
<td>Male</td>
<td>86</td>
<td>16.3 (6.3)</td>
<td>-1.50</td>
<td>.14</td>
<td>-2.17</td>
<td>-5.03, .68</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>25</td>
<td>18.4 (6.4)</td>
<td></td>
<td></td>
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<tr>
<td>Difficulty describing feelings</td>
<td>Male</td>
<td>86</td>
<td>14.0 (4.4)</td>
<td>-1.75</td>
<td>.08</td>
<td>-1.83</td>
<td>-3.91, .25</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>25</td>
<td>15.9 (5.5)</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Externally orientated thinking</td>
<td>Male</td>
<td>86</td>
<td>24.8 (4.7)</td>
<td>.18</td>
<td>.87</td>
<td>.11</td>
<td>-1.95, 2.17</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>25</td>
<td>24.6 (4.12)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Total SDQ</td>
<td>Male</td>
<td>97</td>
<td>15.1 (5.8)</td>
<td>-1.62</td>
<td>.11</td>
<td>-1.95</td>
<td>-4.34, .43</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>29</td>
<td>17.0 (5.3)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Emotional difficulties</td>
<td>Male</td>
<td>97</td>
<td>3.0 (2.4)</td>
<td>-.275</td>
<td>.01**</td>
<td>-1.45</td>
<td>-2.50, -.40</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>29</td>
<td>4.5 (2.9)</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Conduct Problem</td>
<td>Male</td>
<td>97</td>
<td>3.8 (2.3)</td>
<td>-.11</td>
<td>.91</td>
<td>-.48</td>
<td>-.89, .80</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>29</td>
<td>3.9 (1.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>Male</td>
<td>97</td>
<td>6.0 (2.4)</td>
<td>.05</td>
<td>.96</td>
<td>.02</td>
<td>-.96, 1.00</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>29</td>
<td>6.0 (2.2)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Peer Problems</td>
<td>Male</td>
<td>97</td>
<td>2.3 (1.5)</td>
<td>-1.41</td>
<td>.16</td>
<td>-.44</td>
<td>-1.05, .18</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>29</td>
<td>2.8 (1.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prosocial Behaviours (positive scale)</td>
<td>Male</td>
<td>97</td>
<td>6.9 (1.8)</td>
<td>.29</td>
<td>.77</td>
<td>.11</td>
<td>-.64, .86</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>29</td>
<td>6.8 (1.7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** p = < .01
Characteristics of young offenders with and without DLD

Statistically significant between-group differences were found on all the psycholinguistic measures (see Table 3).

**Table 3.** Psycholinguistic profiles of DLD vs non-DLD young offenders

<table>
<thead>
<tr>
<th>Group</th>
<th>DLD (N = 87)</th>
<th>Non DLD (N = 58)</th>
<th>t</th>
<th>df</th>
<th>Mean Difference [95 % CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonverbal IQ</td>
<td>83.1 (12.1)</td>
<td>93.2 (11.1)</td>
<td>5.01***</td>
<td>139</td>
<td>10.1 [6.1, 14.0]</td>
</tr>
<tr>
<td>(n = 85)</td>
<td>(n = 56)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expressive Language FS</td>
<td>67.8 (10.1)</td>
<td>90.3 (8.0)</td>
<td>14.3***</td>
<td>143</td>
<td>22.7 [19.6, 25.7]</td>
</tr>
<tr>
<td>Receptive Language USP</td>
<td>67.8 (10.9)</td>
<td>91.4 (8.8)</td>
<td>13.8***</td>
<td>143</td>
<td>23.6 [20.2, 27.0]</td>
</tr>
<tr>
<td>Sight word reading efficiency</td>
<td>81.6 (7.92)</td>
<td>85.4 (9.68)</td>
<td>2.15*</td>
<td>98</td>
<td>3.8 [.3, 7.3]</td>
</tr>
<tr>
<td>Phonemic decoding</td>
<td>86.3 (11.6)</td>
<td>91.7 (11.2)</td>
<td>2.27*</td>
<td>97</td>
<td>5.4 [7.7, 10.1]</td>
</tr>
<tr>
<td>Total word reading</td>
<td>80.9 (10.8)</td>
<td>86.6 (11.5)</td>
<td>2.50**</td>
<td>97</td>
<td>5.7 [1.2, 10.3]</td>
</tr>
<tr>
<td>Reading Comprehension</td>
<td>75.7 (12.5)</td>
<td>88.2 (12.4)</td>
<td>3.81***</td>
<td>56</td>
<td>12.5 [5.9, 19.0]</td>
</tr>
</tbody>
</table>

* p<.05, ** p<.01, *** p<.001” Note: All scores are standard scores means and in brackets standard deviations. DLD = Developmental Language Disorder, FS = Formulated Sentences, USP = Understanding Spoken Paragraphs.

All scores for the Non-DLD group were in the low average (sight word reading) to average range. The mean language score for the young offenders with DLD was more than 2.25 standard deviations below the mean (<.68). As a group, young offenders with DLD had significantly greater problems with all aspects of reading than those without DLD. In contrast, no significant differences were found between young offenders with and without DLD for alexithymia. This was the case when comparing continuous scores as well as when comparing alexithymia status categorically as presented in Table 4.
Table 4. Alexithymia Scale (TAS-20) findings by DLD status

<table>
<thead>
<tr>
<th>Group</th>
<th>DLD Mean (SD)</th>
<th>Non-DLD Mean (SD)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 58</td>
<td></td>
<td>N = 53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAS 20 Total score</td>
<td>56.6 (12.6)</td>
<td>54.6 (10.7)</td>
<td>-.91</td>
<td>.36</td>
</tr>
<tr>
<td>Difficulty identifying feelings score</td>
<td>17.5 (7.0)</td>
<td>16.0 (5.6)</td>
<td>-1.20</td>
<td>.23</td>
</tr>
<tr>
<td>Difficulty describing feelings score</td>
<td>14.3 (5.0)</td>
<td>14.7 (4.3)</td>
<td>.43</td>
<td>.67</td>
</tr>
<tr>
<td>Externally-orientated style of thinking</td>
<td>25.3 (4.9)</td>
<td>24.0 (4.0)</td>
<td>-1.57</td>
<td>.12</td>
</tr>
<tr>
<td>Alexithymia status: *</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alexithymia (scores &gt; 61)</td>
<td>24 (41%)</td>
<td>17 (32%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possible Alexithymia (52-60)</td>
<td>12 (21%)</td>
<td>13 (25%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Alexithymia (&lt;51)</td>
<td>22 (38%)</td>
<td>23 (43%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*No significant group difference was found, $\chi^2 (2(111) = 1.03, p = .60)$.

The mean score for alexithymia for the group as a whole was 55.7 (SD = 11.7) and 60% of the group met the criteria for alexithymia/possible alexithymia. Similarly, no significant differences were found between young offenders with and without DLD for internalising and externalising difficulties and prosocial behaviours as measured by the SDQ (Table 5). The mean total SDQ score for the group as a whole was 15.53 (SD = 5.73) and 54% of the sample had total difficulties scores in the borderline/abnormal range.
Table 5. SDQ results by DLD status

<table>
<thead>
<tr>
<th>Group</th>
<th>DLD Mean (SD)</th>
<th>Non-DLD Mean (SD)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 71</td>
<td>N = 55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDQ Total score</td>
<td>16.1 (5.6)</td>
<td>14.8 (5.8)</td>
<td>-1.30</td>
<td>.19</td>
</tr>
<tr>
<td>Emotional Difficulties</td>
<td>3.5 (2.7)</td>
<td>3.1 (2.4)</td>
<td>-.86</td>
<td>.39</td>
</tr>
<tr>
<td>Conduct Problems</td>
<td>3.9 (2.0)</td>
<td>3.8 (2.0)</td>
<td>-.21</td>
<td>.83</td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>6.3 (2.3)</td>
<td>5.6 (2.4)</td>
<td>-1.88</td>
<td>.06</td>
</tr>
<tr>
<td>Peer Problems</td>
<td>2.4 (1.4)</td>
<td>2.4 (1.6)</td>
<td>-.01</td>
<td>.99</td>
</tr>
<tr>
<td>Prosocial Behaviours (Positive scale)</td>
<td>6.8 (1.8)</td>
<td>7.1 (1.8)</td>
<td>.78</td>
<td>.44</td>
</tr>
</tbody>
</table>

4.5 Discussion

This study entailed a comprehensive examination of the psycholinguistic and socioemotional profiles of young people in the youth justice system. It is the first study conducted in the UK to report on the profiles of females in the Youth Justice System, and it generated the largest sample to date to have examined the point prevalence of unidentified DLD in young people on community, or triage, orders.

Prevalence of DLD, gender and profiles of female offenders.

Consistent with previous research, the young people in this study demonstrated poor language skills. Operationalising DLD as 1.5 SDs below the population mean on the expressive and/or the receptive CELF-4 subtest meant that 87 participants (60% of the sample) met criteria for DLD diagnosis. DLD was unidentified with only 2 participants stating they had previously seen a speech and language therapist. These two participants, however, did not know why they had previously been a recipient of speech and language therapy services, although one suggested he had difficulty speaking when he was much younger. No participant was currently accessing speech
and language therapy services and, of the participants who had an Education, Health and Care Plan, none detailed Speech, Language and Communication Needs as a primary need.

Approximately 20% of young offenders in England and Wales are female (YJB, 2018) so the proportion in this sample (23%) was broadly representative of the national picture. As mentioned above, 87 young offenders met criteria for DLD diagnosis. DLD was as prevalent in female youth offenders (n=22, 67%) as it was in males (n=65, 58%). Although international research has considered female offending populations our UK point prevalence is considerably higher than that reported by researchers undertaking research in other countries. For example, Snow et al, in Australia, (2016) detailed a prevalence rate of 27% while Sanger et al in the USA (2001) reported a prevalence rate of 19%. Even though methodological and cultural variations are likely to be responsible for some of the variation in prevalence rates, they all report higher proportions than what would be expected in the general population. Previous research has highlighted the need for consideration of such high levels of DLD when interventions in the YJS are being planned and delivered (Hughes et al, 2017; Snow et al, 2016). Our findings concur with this approach and extend this to the population of young female offenders.

It is also noteworthy that the majority of participants with DLD, irrespective of their gender, revealed severe language difficulties. Furthermore, among the 87 participants identified as having DLD, only two reported previously accessing speech and language services when in primary education. This means that 85 young people had not accessed any support and their needs had previously gone unidentified. As Bryan and colleagues (2015) pointed out in their compounding risk model, this lack of identification of language needs is of concern particularly when considering there are potential opportunities to intervene earlier with young people who are struggling or disengaged from education. Bryan and colleagues’ model draws upon the associations of DLD with poorer outcomes in multiple domains including, but not restricted to,
literacy, educational attainment (Conti-Ramsden & Durkin, 2012) employment
(Johnson et al., 2010), anxiety disorders (Wadman, Botting, Durkin, & Conti-Ramsden,
2011) and problematic behaviours (Yew & O’Kearney, 2013). The authors suggest that
these multiple risks allow for points of intervention and advocate that young people with
complex profiles, such as behavioural difficulties and disengagement from education,
should be prime targets for language assessment and intervention (Bryan et al, 2015).
Underlying shared risk factors may be responsible for these associations or they could
be secondary difficulties due to the impact of DLD. Proficiency with language is
essential for interacting with the world from initiating and maintaining friendships
(Durkin & Conti-Ramsden, 2007) to engagement with learning (Conti-Ramsden,
Botting, Simkin & Knox, 2001). Most of this research concentrates on individuals with a
history of identified DLD. Unfortunately, it is not known whether undiagnosed DLD
negatively shapes adolescents’ school and life experiences, and thus elevates the risk
of young people becoming involved in criminality. Longitudinal evidence is needed to
develop our knowledge and understanding in this area.

There were no significant gender differences in the psycholinguistic and
socioemotional profiles of male versus female young offenders bar higher levels of
emotional difficulties in females in line with epidemiological studies that have reported
females as being more likely to experience internalising problems such as emotional
difficulties (Rescorla et al, 2007). However, we did not find that male young offenders
were more likely to report externalising difficulties. These results must be interpreted
with caution due to the limited numbers of females in the sample which may have
limited the study’s power for making gender comparisons. Future research in this
area involving larger number of female offenders is therefore warranted.
Associated reading difficulties

The mean chronological age scores gained in the sight word reading and phonemic decoding was, respectively, almost 4 years and 3 years, on average, behind that of the participants’ actual ages. Qualitative observations during testing revealed that many young people began the session by declaring that they did not want to do any reading, with the majority remarking they found reading very difficult. Indeed, the proportion of participants who either refused or were unable to complete the reading tasks was high. The strenuous nature of engaging in reading activities could also affect motivation to engage with print. When measuring print exposure and reading skill, Harlaar and colleagues reported the effect ran from reading skill to print exposure between the ages of 10 and 11 years (Harlaar, Deater-Deckard, Thompson, DeThorne & Petrill, 2011). Likewise, a recent study utilising direction of causality models concluded that it was reading ability driving print exposure (Van Bergen et al., 2018).

Reading single words and phonemic decoding was an area of difficulty for the group and qualitative observations confirm reading appeared effortful and laborious. The lack of automaticity when reading single words leads to a superfluous amount of cognitive resources used leaving fewer resources for comprehending the text. This appeared to be the case as 26 young people refused the reading comprehension task and a further 19 abandoned the task following the inability to correctly answer any of the first five questions. A further 42 participants did not begin the task due to a lack of time or a failure to attend a second appointment. Therefore, the results gained are likely to be an overestimation of the reading abilities of young offenders and caution should be exercised before generalising the reported findings. The data reported here strongly suggests that the young offenders are likely to find reading youth justice-related documentation difficult. They also indicate that the individuals with DLD have significantly worse reading skills than those without DLD and, are therefore, likely to be further disadvantaged.
Psycholinguistic and socioemotional profiles of young offenders

Alexithymia was not distinctively associated with DLD. These data reinforce evidence from Snow and colleagues who suggest that alexithymia and DLD, in forensic populations, appear to be comorbid conditions as opposed to a complex single language factor tapping a variety of skills (Snow et al, 2016). Nonetheless, results of this investigation also revealed that alexithymia was a notable difficulty or co-morbid condition of young offenders. Alexithymia was overrepresented in the sample as a whole with nearly two-thirds (60%) of the participants who completed the TAS-20 meeting criteria for having ‘alexithymia’ or ‘possible alexithymia’. The prevalence in the general population is 10% (Salminen, Saarijarvi, Toikka & Karhanen, 1999), although it has been suggested it is higher in the adolescent population with approximately 24% of ‘normal adolescents’ scoring in the alexithymic range (Horton, Gewirtz, & Kreutter, 1992). Alexithymia is often described as a deficit in recognising, experiencing and processing emotions (Taylor, 1997), including an externally-orientated thinking which has been referred to as a tendency to avoid affective thinking and viewing events superficially (Franz et al, 2008). These difficulties have the possibility to confer vulnerability for poor social exchanges and lack of prosocial behaviours in young people.

Our findings indicate that youth justice staff should be aware of the difficulties young offenders face in both their language processing skills and their ability to identify and label emotional states in themselves and others. Poor skills in these areas are likely to leave young people compromised in their ability to engage in rehabilitative strategies that are key to restorative justice processes. Reading difficulties and poor literacy skill more generally are likely to be implicated. The findings with regard to reading reported in this study reveal that those young offenders with DLD are more strongly disadvantaged than those without. Data from semi-structured interviews with victim liaison officers support this notion. Results revealed that, even if a young offender writes a letter of apology, it is not always made available to the victim (Newbury, 2011).
Staff highlighted that despite the young person putting in considerable effort in letter-writing, the brevity of the letter could be perceived by victims as non-compliance, rudeness or an insult (Snow & Powell, 2011). In the same vein, an evaluation of youth justice triage services identified shortcomings in the ability of the young people to complete workbooks or write letters of apology to victims (Soppitt & Irving, 2014).

4.6 Concluding remarks

Previous research has mainly focused on incarcerated (Bryan et al, 2007; Hughes et al, 2017) young offenders or those on intensive community orders (Gregory & Bryan, 2011). This study provides novel evidence pertaining to the needs of young people new to the YJS and allows for the application of this knowledge when planning intervention and rehabilitative programmes. Findings revealed a high degree of need amongst first time entrants into the YJS and furthermore specified key deficits in this population. Both DLD and alexithymia were found to be overrepresented in young offenders and equally prevalent in females and males. In addition, over half of young offenders exhibited socioemotional difficulties in the abnormal/borderline range and once again these difficulties were generally not gender-specific. It is important to note that these data are in many ways “the best possible scenario” for the participants due to the following reasons. Although the CELF-4 is a standardised instrument that provides vital information regarding linguistic skills, performance on such a task in a quiet room may not reveal as many problems as those young people may experience in real life, when competing demands are included. In a similar vein the language measures utilised focus on the structural aspects of language as opposed to targeting high-level language skills such as non-literal language comprehension and inferencing skills (Adams, 2002). Future research should consider such sociocognitive and pragmatic skills, including awareness of listener prior knowledge and the ability to reflect and self-correct. Overall our findings point to the need for language assessment and
identification of DLD as a crucial part of criminal justice services and potential priority for intervention in first time young offenders.

4.7 Supporting information (for online publication only)

4.7.1 Further information on participant recruitment

Following discussions with managers in local community youth offending services in the North West of England, 4 YOTs and a triage centre agreed to be involved in the research. In total 181 young people were recruited via their YOT caseworker, although only 96 attended their appointment. The reasons for non-attendance included: the young person deciding not to participate, the YOT caseworker did not inform the young person of the appointment, or the young person was missing from home or in police custody at the appointment time. As triage interventions consist of a single contact with young people, participants were recruited by way of a letter to the home address, sent via the triage centre. Each young person was made aware that a researcher would be at the triage session on the day and participants were asked to complete the consent form if they agreed to participate. In total the researcher attended 70 sessions over a 10-month period and 43 participants agreed to participate from this route. In an attempt to make the research representative of young people in the YJS, no inclusion criteria were stipulated other than having English as one’s first language. However, it is important to note that this investigation was based on voluntary participation, potentially limiting generalisability. On the one hand, in the sampled YOTs only half of the young people referred by caseworkers attended their appointments, and so only the young people who were confident that they could undertake the assessments may have attended. On the other hand, the converse could be true. As caseworkers were responsible for referring young people, it is possible they could have only referred the young people whom they had concerns about as opposed to all eligible individuals on their caseload.
The final sample included in this investigation comprised 145 young people, 96 of whom were first time entrants into the youth justice service in the North West of England. The mean age of the participants was 15.8 \( (SD\ 1.5) \) and their ages ranged from 12 to 17 years. Most of the 145 participants \( (n=112) \) were male. This reflects the latest national results that were published in 2017, which reported that 80% of first time entrants into the YJS were male (80%) and their mean age was 15.2 \( (YJB, 2018) \). These figures, however, do not include young people who are subject to triage orders.

4.7.2 Further information on procedures

This study was conducted as a cross-sectional design. The lead researcher (MW) tested all participants in a private session at which parents and youth offending team staff were encouraged to attend. Despite the intention to hold two separate sessions for participants to complete the measures, this was not always possible for two reasons. First, young people often failed to attend a subsequent appointment and, second, only one contact was possible with the participants recruited via the triage centre. For the participants who did provide complete data in a single session, due care was taken that it did not last longer than 60 minutes and that frequent breaks were taken. Participants were either seen at the youth justice setting, local health centres, their care home or their school. Prior to each session adolescents were given explanations regarding the study and the tasks were presented in pictorial format on a laminated card. This explanation emphasised the confidentiality of all data collected, and the option of voluntarily withdrawing from the research at any moment. Young people were advised that they could abandon a task at any time or skip any tasks that made them feel uncomfortable. Moreover, participants were encouraged to disclose their own opinion and were reassured that there were no right or wrong answers. To aid compliance some participants determined task order by choosing the corresponding picture of the task, and once completed, the picture was removed. Others gave no preference, and for these young people the tasks were administered in a random order. Participants
were often reminded that they could remove pictures at any time, including before or during a task. This happened regularly and not all participants were willing to complete all tasks. For some participants the self-rating scales were administered in an interview format due to literacy problems. Following assessment, a report was compiled for the young person’s caseworker detailing results and offering recommendations regarding adapting the intervention. If deemed necessary onward referral was advised and each YOT and the triage organisation had a referral pathway to local services that could not be provided in-house.

4.7.3 Further information on measures and statistical analyses

Standardised psycholinguistic measures

Nonverbal IQ
To assess nonverbal IQ (NVIQ) we administered the performance subscale of The Wechsler Abbreviated Scale of Intelligence (WASI, Wechsler, 1999). This test has norms for individuals aged 6 to 89 years. The reliability of the Performance IQ scale for the age range 12 – 16 range from .84 to .93 for block design and .86 to .96 for matrix reasoning. The reliability coefficients for the age 17 are slightly higher. Validity studies of the WASI reported in the manual provide evidence that the test is a valid quick screening measure of intellectual functioning.

Language
Two subtests of the Clinical Evaluation of Language Fundamentals (CELF-4\(^{(\text{uk})}\)) (Semel et al. 2006), a standardised assessment, normed up to age 21 years 11 months, were utilised to assess language skills. The first subtest, ‘formulated sentences’ (FS), requires the young person to formulate a sentence, including a given word, based on a picture shown. The CELF-4 manual details the reliability of FS to be .82. Second, as a receptive measure, the subtest understanding spoken paragraphs (USP) was chosen. This subtest, with a reliability of 0.75, provides a standardised score pertaining to the young person’s ability to process, comprehend and formulate a response to factual and inferential information that has been delivered verbally.
In an effort to avoid over-diagnosis, and following recommendations made in the review by Spencer, Clegg and Stackhouse (2012), a score of 1.5 \( SD \) below the normative mean on the CELF-4 subscales was used to determine the frequency of unidentified DLD. This resulted in 87 participants (60%) meeting the criteria of a scaled score of 77 or less on the expressive and/or receptive subtest. No significant gender difference in the prevalence of DLD, \( \chi^2 (1) = 7.91, p = 0.37 \) was found. Of the 112 males in the study, 65 (58%) met the criteria as did 22 (67%) of the females. The young people showed a variety of different language profiles with the majority, 55 participants (38%), gaining scores indicative of having both expressive and receptive DLD. A smaller proportion, 12 participants (8%) displayed receptive difficulties only and 20 participants (14%) returned scores indicative of difficulties with the expressive domain. Table 6 below demonstrates that the largest proportion of those with language difficulties returned scores on the CELF-4 subtests in the ‘severe’ range.

**Table 6.** Group results by severity of expressive and receptive language

<table>
<thead>
<tr>
<th>CELF-4 subtest severity score</th>
<th>Expressive measure (FS)</th>
<th>Receptive measure (USP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average (86-114)</td>
<td>59 (41%)</td>
<td>63 (44%)</td>
</tr>
<tr>
<td>Mild (78-85)</td>
<td>11 (8%)</td>
<td>15 (10%)</td>
</tr>
<tr>
<td>Moderate (71-77)</td>
<td>17 (11%)</td>
<td>5 (3%)</td>
</tr>
<tr>
<td>Severe (70 and below)</td>
<td>58 (40%)</td>
<td>62 (43%)</td>
</tr>
<tr>
<td>Total</td>
<td>145 (100%)</td>
<td>145 (100%)</td>
</tr>
</tbody>
</table>

Reading

The Test of Word Reading Efficiency–Second Edition (TOWRE–2; Torgeson et al., 1999) was utilised as a measure of an individual’s ability to pronounce printed words (Sight Word Efficiency) and non-words (Phonemic Decoding Efficiency) accurately and fluently. This test requires the young person to read words and non-words (readable letter combinations without any meaning, for example ‘barp’) from a card as fast and accurately as possible. Only the words read accurately were considered as correct and mispronunciations were counted as errors unless the young person self-corrected. The
manual suggests when internal consistency was investigated the subtests and the total scores all exceeded the .80 level (Torgeson et al., 1999).

Reading comprehension was measured using the Wechsler Individual Achievement Test (WIAT-II; Wechsler, 2005). This includes a subtest with stories and sentences assessing literal, inferential and lexical comprehension. Strong inter-item consistency within subtests, are reported, with average reliability coefficients ranging from .80 to .98.

Socio-emotional measures

Alexithymia

To measure Alexithymia, we used The Toronto Alexithymia Scale (TAS-20; Bagby et al., 1994). The TAS-20 is a self-report scale that is comprised of 20 items, measuring the following three subscales: 1) difficulty describing feelings ('It is difficult for me to find the right words for my feelings'); 2) difficulty identifying feelings ('When I am upset I don't know if I'm sad, frightened or angry'); 3) externally-orientated thinking ('I prefer to just let things happen, rather than understand why they turned out that way'). Items are rated using a 5-point Likert scale whereby 1 = ‘strongly disagree’, 2 = ‘disagree’, 3 = ‘neutral’, 4 = ‘agree’ and 5 = ‘strongly agree’. There are 5 items that are negatively worded. Although alexithymia can be conceptualised as a dimensional construct an indicative cutoff score has been established empirically, facilitating comparisons between studies (Taylor, 1997). We used this total alexithymia score, which is the sum of responses to all 20 items, and scoring is described as; equal to or less than 51 = non-alexithymia, 52 to 60 = possible alexithymia and scores equal to or greater than 61 = alexithymia.

External and internalising difficulties

To measure the presence of external and internalising difficulties we used the Strengths & Difficulties questionnaire (SDQ; Goodman et al., 1998). The SDQ consists
of 25 statements covering 5 domains of functioning: conduct problems (e.g. ‘I get very angry’), hyperactivity (e.g. ‘I am easily distracted’), emotional difficulties (e.g. ‘I worry a lot’), peer relation problems (e.g. ‘I am usually on my own’), and, prosocial behaviour (e.g. ‘I try to be nice to others’). The latter scale, the prosocial scale, measures positive functioning (as opposed to difficulties). For each item, the young person could tick either ‘not true’, ‘somewhat true’ or ‘certainly true’, which reflect a score of 0, 1 and 2, respectively. Some items are, however, reverse-scored such as, in the conduct problems scale, ‘I usually do as I’m told’. In the hyperactivity scale, ‘I think before I do things’ would also be reversed-scored with ‘not true’ scoring 2, and ‘certainly true’ scoring 0 (with ‘somewhat true’ always scoring 1).

Contextual measures

Offence characteristics

Detailed scrutiny of departmental files in each YOT and the triage centre took place to ascertain the nature of the offence the young person had committed.

Offender characteristics

Offender characteristics were extracted from the file, including education provision, looked after status, whether the young person was in education, employment or training, had any recorded special need or an Education Health and Care plan, a history of missing from home, truanting or self-harm.

Educational attainment: Literacy and numeracy

On arrival to the YOT, staff routinely liaised with a young person’s educational establishment to document current level of attainment. Standard Assessment Tests (SATs) are mandatory assessments in the UK, that occur at intervals across the school years, and are designed to measure progress against the national curriculum. The information was recorded following the levels from the Qualifications and Credit
Framework (QCF), which operates a system of grouping qualifications according to difficulty. The framework ranges from entry level, which encompasses three ranks and culminates at level 8 - the highest level. Entry level qualifications (1-3) refer to basic knowledge and skills and are designed for students who are not ready for GCSEs. The key milestones for the age of this sample are entry level 3, which children are expected to achieve at the end of Key Stage 3 (KS3) and level 1, which denotes a GCSE grade D-G and level 2 which denotes a GCSE grade A*-C. The highest level of academic qualification was obtained by YOT staff and recorded in the young person’s file. Data concerning the literacy and numeracy educational attainments of the participants were extracted from the participating organisations’ databases.

Statistical Analysis

All statistical analyses were conducted in SPSS 22 and a two-tailed significance level of \( p = 0.05 \) was used unless otherwise specified. Independent \( t \)-tests for continuous variables, and chi-squared (\( \chi^2 \)) tests for categorical variables, were used to compare group differences. To avoid losing statistical power, missing values were dealt with using a pro-rating method. In this method each missing value was replaced with the mean of the non-missing values for the same question from the same participant’s data (Field, 2005). The maximum number of missing responses for any participant was two out of a possible 20 responses, only five participants had missing data and this referred to the questionnaire data (ICU). Responses were missing because the participant had failed to answer the question or the participant’s response was unintelligible. A speech and language therapist, independent of the study, scored a random sample of 20% of the formulated sentences sub-test. The inter-rater reliability analysis revealed adequate reliability Kappa = 0.83, \( p = < 0.001 \).
5.0

Chapter 5: Cohort study examining the risk of reoffending in young offenders with unidentified Developmental Language Disorder. *(Study 4)*

This manuscript is currently being prepared for submission.
5.1 Abstract

Background: Most of the research delineating a high prevalence of developmental language disorder in young offenders is cross sectional and has been undertaken with prolific offenders. Little is known about the prevalence, or impact, of developmental language disorder in first-time offenders.

Methods: A total number of 145 young offenders, recruited from youth offending teams and a triage centre in the North West of England, were assessed by a speech and language therapist. Participants completed standardised measures of expressive and receptive language, non-verbal IQ and the inventory of callous unemotional traits. An adversity score was constructed, and further data known to influence rates of recidivism were extracted from the youth justice service records. Survival analysis was utilised to examine differences in reoffending between young offenders with DLD compared to those without. Survival was first estimated using univariate analysis and Kaplan-Meier survival models with log-rank tests. Cox regression survival analysis was used to generate both unadjusted hazard ratios and those adjusted for the following confounders: nonverbal IQ, adversity score, age at first offence and callous unemotional traits.

Findings: The cumulative incidence of the absolute risk of reoffending within a year of the young person’s court order was 62% (CI 52-72) for the DLD group and 25% (CI 16-39) for the Non-DLD group. In the fully adjusted model the independent elevation in risk linked with DLD did not attenuate and DLD was the most significant predictor with an adjusted hazard ratio of 2.40 (CI 1.77 – 3.22).

Interpretation: The results indicate that young offenders with DLD may be at a disadvantage when compared to their offending peers with typical language. Differentiation of intervention strategies for young people with DLD, may be not only more ethical but cost effective.
5.2 Introduction

The Youth Justice Service (YJS) in England and Wales is typically comprised of young people whose backgrounds include local authority care (Schofield et al., 2015), family conflict (Caffo, Strik Levers & Forresi, 2006), socioeconomic disadvantage (Stephenson, 2007), school underachievement (Putnins, 1999) and exclusion (Murray, 2012), neglectful families and drug or alcohol abuse (Arnull et al, 2005). There is also now a growing body of evidence detailing links between Developmental Language Disorder (DLD) and youth offending. This literature, reported from the UK (Bryan et al, 2007; Bryan et al, 2015; Hopkins et al, 2018), Australia (Snow & Powell, 2008), New Zealand (Lount et al., 2017) and the USA (Sanger et al, 2001) clearly demonstrates an association between language and offending behaviour.

In the UK Bryan and colleagues reported a prevalence of DLD among randomly sampled incarcerated youths with a mean age of 17 years, of between 46 and 67% across four subtests of the Test of Adolescent Language (TOAL-3; Hammill et al,1994) (Bryan et al, 2007). The same authors conducted a larger study in a secure children’s home and reported 42% of the young people, with a mean age of 15 years, scored 1.5 standard deviations or more below the population mean on a measure of receptive language (Bryan et al, 2015). This sample, however, included young people detained under a Section 25 Secure Welfare Order. Research involving comparison groups have reported similar findings. In Australia, Snow and Powell (2008) found significantly poorer group scores on all language measures, including figurative language skills, narrative skills and sentence repetition tasks, for community-based male offenders compared to a demographically matched control group. These findings support those of Blanton and Dagenais (2007), from the USA, who considered incarcerated males and females versus comparators matched on age, gender, socioeconomic status, and ethnicity. The authors found a significant difference on the scores gained on standardised language measures with calculated effect sizes of d= .73 - .88 for males
and $d = .65 - .76$ for females (Blanton & Dagenais, 2007). Such findings are reflected in a recent study carried out with males aged 14 – 17 years in a New Zealand youth justice residence. The authors reported that 58% of the young people scored 1.5 standard deviations below the population mean on a standardised language assessment (Lount et al., 2017). Moreover, 87% of the sample scored below the average (a standard score of 100), corroborating earlier findings from the UK (Bryan et al., 2007). This led the authors to suggest that the normal curve for this population is shifted significantly to the left (Lount et al., 2017), and youth justice staff could view such a level of language skills as being the norm (Bryan et al., 2007).

It is well documented that young offenders disengage with education at an early age or experience less years of schooling due to exclusions (Snow & Powell, 2011), leading to concerns that their poor performance on language measures could have arisen as a result of a reduced exposure to classroom teaching. This was found not to be the case when Hopkins and colleagues considered 52 young people on court orders in the UK, compared to non-offending peers matched on years of education. Regression analysis revealed that a poor score on the language assessments meant participants were over one to almost five times more likely to be in the young offender group (Hopkins et al., 2018). Additionally, both groups were matched on SES and non-verbal IQ.

Research pertaining to the associations between DLD and crime severity is currently confined to Australia. When examining language abilities as a function of offending severity with a sample of incarcerated young people, Snow and Powell (2011) reported the participants with higher offending scores performed more poorly on the language measures employed (Snow & Powell, 2011). No significant association was found when the same authors considered young people on community orders and they reported violent offending was equally distributed among the participants irrespective of their language abilities (Snow & Powell, 2008).
Cumulatively this evidence suggests that a disproportionate number of young people who come into contact with the YJS have DLD (Bryan, 2004; Games et al, 2012). Despite methodological variations, findings are consistent, and it is generally accepted that 50 - 60% of young offenders evidence language difficulties that would warrant clinical intervention (Gregory & Bryan, 2011; Snow & Powell, 2012). Moreover, this DLD is usually undiagnosed meaning that youth justice personal are unaware of its implications.

Criminality among some youths, especially repeat offending, is acknowledged to be a serious societal problem (Ryan, Williams & Courtney, 2013), featuring prominently in media headlines and on the political agenda. Recidivism has a serious effect on the economy and the prevention of adolescent recidivism is a priority for the YJS in England. The Home Office (2018) annually publishes data pertaining to youth reconviction and the most recent figures detail that for the year ending March 2016 42% of young people reoffended within 12 months with a frequency rate of 3.79 reoffences per reoffender (Home Office, 2018). Research pertaining to predictors of youth reoffending is limited and complicated by distinct methodological approaches, such as incarcerated versus community samples (Mallett, Fukushima, Stoddard-Dare, & Quinn, 2013), specific type of offenders (Grossi, 2017) and measures of recidivism. Despite this, factors reported in the criminological literature as being linked with the continuation of offending include previous offending, age at first offence (Gendreau et al., 1996), substance use (Sullivan & Hamilton, 2007), being diagnosed with ADHD (Young et al., 2011), incarcerated family members (Basto-Pereira et al., 2016) and callous and unemotional traits (Brandt, Kennedy, Patrick, & Curtin, 1997; Frick et al., 2003).

Defined as a lack of guilt, empathy and an uncaring attitude (Frick et al, 2014), callous and unemotional (CU) traits are associated with more severe conduct problems and aggression (Frick & Dickens, 2006; Munoz & Frick, 2012) and are particularly
intervention resistant (Hawes, Price and Dadds, 2014). Collectively these CU traits specify a sub-group of youth for whom severe outcomes are predicted even after controlling for attention deficit and hyperactivity symptoms, Oppositional Defiance Disorder (ODD) and Conduct Disorder (CD) (Bryd et al., 2011). The evidence base in relation to their impact resulted in the addition of specifier within the conduct order category in the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013). This revision allows for the delineation of children who, not only meet criteria for conduct disorder (CD), but also the additional specifier, ‘limited prosocial emotions’, operationalised as CU traits (Hawes et al, 2014).

The 1998 Crime and Disorder Act (CDA) in England & Wales created Youth Offending Teams (YOTs), which remain the main vehicle by which the aims of the YJS are delivered (Stahlkopf, 2009). Young people are referred from local constabularies or the courts to their local YOT and can be subject to a number of orders including; an out of court disposal, a reparation order, youth referral orders or a more intensive supervision and surveillance programme. Furthermore, 2008 saw the publication of the Youth Crime Action Plan (Home Office, 2008) which encouraged the development of youth justice triage for First Time Entrants (FTEs) into the YJS. This model involves the referral of first-time young offenders, to a short reparation session, in an attempt to divert low level offending away from formal youth justice (Bateman, 2012).

The current discourse, relating to juvenile offending, witnesses the justice system adopting reparation and Restorative Justice (RJ) as a tool to address youth crime (Ministry of Justice, 2012). Although at first reserved for relatively minor low-level crime, the principle is increasingly being employed as a response to more serious crime (McAlinden, 2011). It is now embedded at every level of the YJS, from triage interventions that typically involve a young person engaging in reparation activities or scripting letters of apology, through to those young people who are incarcerated (Gray
& Wright, 2011; Morgan & Newburn, 2012). An element of its appeal is that it is a theoretically grounded concept (Angel et al., 2014), with roots in the Interaction theory of Collins (2004), Braithwaite’s Reintegrative Shaming theory (1989) and Tyler’s theory of procedural justice (1990). To benefit from this current drive in reparation and restoration a certain level of language competence is a pre-requisite (Bryan & Gregory, 2013). Restorative Justice policies draw heavily on the oral language abilities of its participants. The young person is expected to be actively involved in a discussion which focusses on their wrongdoing and aims to explicate actions that repair any harm caused to the victims (Hayes & Snow, 2013). The concept of responsibilisation underpins the process but this theory is contingent upon individuals being an active social agent (Phoenix & Kelly, 2013) and possessing the ability needed to derive this meaning from the YJS strategies. For young people who have unidentified DLD questions emerge regarding equitable opportunities for rehabilitation.

5.3 The present study

Although substantial strides in research on the presence of DLD in the youth offending population have been made over the last 10 years, most of these studies have been cross sectional and have been conducted in samples of young people who are already well entrenched in the system. Thus far, there is a dearth of research considering first time entrants (FTE) to the YJS. Despite the potentially heightened relevance of adequate language skills with RJ processes the impact of DLD on reoffending has yet to be empirically considered. Incarcerated youths and those on intensive orders may be more likely to exhibit DLD due to a reduced efficacy in rehabilitative methods utilised earlier on in their offending journey (Snow & Powell, 2008). Empirical research concentrating on the implications of DLD is scant and the present study moves the field forward by addressing the following questions:

1) What is the point prevalence of DLD in a sample of first-time young offenders attending community youth offending services in the North West of England?
2) Is DLD linked with reoffending independent of characteristics known to be associated with recidivism, such as age, offending history and SES?

3) Is DLD associated with crime severity in a sample of young offenders with little or no offending history?

On the basis of the results from previous research we tested several hypotheses. First, we hypothesised that young people in the YJS would display markedly raised prevalence of unidentified DLD in line with previously reported estimates (of approximately 60%). We expected, however, this to be less in first time offenders, when compared to the prevalence data in earlier studies that examined incarcerated young people (Bryan et al, 2007; 2015). We further hypothesised that the young people identified with previously unrecognised DLD would commit offences with a higher crime severity score and, would be more likely to re-offend compared to their peers without DLD.

5.4 Method

5.4.1 Ethics

The study reported here received ethical approval from The University of Manchester and informed written consent was gained from all participants. Due to the vulnerability of the young people, consent was also obtained from a parent or guardian and, with the approval of ethics committee, the young offenders’ case workers were permitted to act in loci parentis. The case worker was therefore provided with a copy of the information sheet and asked to read it with the young person.

5.4.2 Participants

A sample of 145 young offenders (YO) was recruited from five local community youth offending services in the North West of England. Youth offending and triage managers agreed to embed the procedure within the service for the duration of the project and
therefore each new entrant to the service was approached by their case worker about the research. In total 181 people were recruited through YOTs, although, only 96 (53%) attended their allocated appointment. It was necessary to adopt a different method for participants recruited through the triage system as young people were only required to attend one session. These participants received a letter which detailed the nature of the research and explained that the researcher would be present on the day of their intervention. A participation sheet and consent form were also included in case the young person wanted to participate in the research. The researcher then attended sessions, working alongside youth justice staff.

The intention was to consider those young people who were relatively new to the youth justice service and therefore 66% of the sample was comprised of first time offenders (n = 96). The participants were on a variety of orders with the largest numbers being on 3-hour triage sessions (n = 49), referral orders (n = 43) or cautions (n = 23). The remaining participants comprised of small n groups who were either on youth rehabilitation orders, had taken part in a restorative justice conference, or were granted a conditional discharge. Offences committed by the sample are displayed in Figure 1.

Over three-quarters of the sample (78%) were males. Independent t-tests revealed no significant gender difference (p>0.05) with respect to any of the psycholinguistic variables, age or measure of SEP, and therefore not all gender-specific analysis were conducted.

5.4.3 Procedure

The lead researcher (MW) tested all participants in a private session at which parents and youth offending team staff were encouraged to attend. At study commencement the intention was to carry out the research via two separate sessions and, although this was occasionally possible, it sometimes proved problematic. First, young people often failed to attend a subsequent appointment and, second, the participants subject to a triage order were only required to attend once. Therefore, some participants completed
the tasks in one session. Care was taken that the session did not last longer than 60 minutes and participants were given frequent breaks. The young people were either seen at the youth justice setting, local health centres, their care home or their school. Prior to testing a 5-minute period was spent establishing rapport and explaining the tasks, which were presented in a pictorial format on laminated card. To aid compliance, some participants determined task order by choosing a corresponding picture and, once the task was complete, the picture was removed. Others gave no preference and for these participants the tasks were completed in a random order. Participants were often reminded that they could remove pictures at any time, including before or during a task. This happened regularly and not all participants were willing to complete all tasks. Inter-rater reliability was carried out for the formulated sentences sub-test. A speech and language therapist, independent of the study, scored a random sample of 20% of the sub-test allowing for interrater reliability analysis. Following assessment, a report was compiled for the young person’s caseworker detailing, identified strengths, weaknesses and recommendations for onward referral if it was deemed necessary. Each YOT, and the triage organisation, had a referral pathway to local services.

5.4.4 Materials and Measures

Psycholinguistic measures of nonverbal intelligence, language and literacy skills.

Nonverbal IQ
The Wechsler Abbreviated Scale of Intelligence (WASI, Wechsler, 1999) Performance subscale was administered as a measure of nonverbal IQ and standard scores were calculated. This test has norms for individuals aged 6 to 89 years. The reliability of the Performance IQ scale for the age range 12 – 16 range from .84 to .93 for block design and .86 to .96 for matrix reasoning. The reliability coefficients for the age 17 are slightly higher. Validity studies of the WASI reported in the manual provide evidence that the test is a valid quick screening measure of intellectual functioning.
Language

To assess language ability, two subtests of the Clinical Evaluation of Language Fundamentals (CELF-4(uk)) (Semel et al. 2006), a standardised assessment, normed up to age 21 years and 11 months, was applied. These consisted of, first, formulated sentences (FS) that requires the young person to formulate a sentence, including a given word, based on a picture shown. Second, as a receptive measure, the subtest understanding spoken paragraphs (USP) was chosen. This subtest provides a standardised score pertaining to the young person’s ability to process, comprehend and formulate a response to factual and inferential information that has been delivered verbally. This mirrors what is expected of a young person in a forensic setting and is therefore deemed to be a good measure of the young person’s ability. Additionally, a core language was established as the mean of the two language measures. The CELF-4 manual details the reliability of FS to be .82 and .75 for USP.

In an effort to avoid over-diagnosis, and following recommendations made in the review by Spencer Clegg, and Stackhouse (2012), a score of 1.5 SD below the normative mean on the CELF-4 subscales was used to determine the frequency of DLD. Those with scores above that threshold were classified as Non-DLD.

Adversity score

A composite variable was constructed from the data extracted from the youth justice service files. This was based on ten variables. The derivation of binary variables allowed for a number of psychosocial adversities to be counted providing a score of between 0 and 10. These variables consisted of a) current looked after child status, b) not in education, employment or training, c) a police file report that the young person had been reported missing at any time, d) any previous self-harm, e) any official recorded special needs, f) self-reported alcohol use, g) self-reported drug use, h) parents divorced i) no adult in the household in paid employment, and j) any influence
in the young person’s life that could be deemed as promoting offending behaviour. Examples of this included siblings or friends who had committed offences, an incarcerated parent, or an adult in the house who was known to authorities for substance misuse.

Prior offending and age at first offence

This was gained from detailed scrutiny of departmental files in each YOT and the triage centre.

Socio-economic status
The Index of Multiple Deprivation (IMD) was applied as an ecological measure of socioeconomic position. This is a residential postcode-based measure of area-level deprivation, representative of the immediate locality of a person’s household. Multiple factors are taken into consideration including income, health, education, skills and training deprivation (McLennan et al, 2011). The higher the score the greater the deprivation and overall the IMD can be divided into 5 quintiles, with quintile 1 being the least deprived localities and quintile 5 the most deprived.

Callous and Unemotional traits
The Inventory of Callous-Unemotional traits (ICU) is a widely used self-report tool identifying youths at risk for severe impairment. It has consistently demonstrated reliability and validity (Kimonis et al., 2014). Consisting of 24 items, each on a four-point scale denoting whether the particular behaviour is, not at all true, somewhat true, very true or definitely true, scoring 0, 1, 2, and, 3 respectively. The questionnaire covers three domains, callousness (e.g. the feelings of others are unimportant to me), uncaring (e.g. I care about how well I do at school), and, unemotional (e.g. I do not show my emotions to others). The items are equally split between positively and negatively worded statements with the former being reverse scored.
Recidivism

Our primary interest was comparing the risk of reoffending between individuals with and without DLD. Recidivism was measured as the first conviction subsequent to the young person’s current order commencing. This was deemed to be a more robust measure than arrest, as not all arrests result in conviction, and measuring reoffending on the basis of further arrests could be biased if individuals with DLD are more likely to be arrested but not subsequently charged.

Crime Severity

On entry to the YJS each offence is assigned a crime seriousness score, ranging from 1 (least serious) to 8 (most serious). These scores are mandated nationally by the YJB and assist YJ staff in determining which offenders are eligible for triage. Data were extracted from the youth justice files, including the crime severity score for the offence committed relating to the young person’s order. For those youths who reoffended we obtained the severity score for the new offence and for those individuals who had previous offences we extracted the highest crime severity score from the young person’s file.

5.5 Statistical Analysis

Data distributions were assessed for normality using Shapiro-Wilks tests and were analysed using nonparametric statistics where normality was not evident. Categorical data distributions were presented as percentage (%) values and between-group comparisons were analysed by chi-square test; between-group comparisons in relation to continuous data were analysed by $t$-test. Following descriptive analysis, survival analysis of time to re-offending was performed. Cox proportional hazards modelling was chosen as it can take account of right censoring, allowing for the inclusion of young people who survive, i.e. do not reoffend. In this approach, survival time to reoffending for each individual is calculated from the beginning of the risk period. In this
study this was defined as the commencement date of the young person’s order. A person was deemed to have ‘survived’ if they remained offence free for the 52 weeks. Due to time of recruitment into the study, a small proportion of participants (14) were not followed for the whole duration of follow up. The mean follow-up time was 50 weeks, and survival analysis allows for right-censoring when a participant is not observed for the full duration. Proportionality assumptions were examined using a test for Schoenfeld residuals (Grambsch & Therneau, 1994) and visually by graphical inspection. Survival was first estimated using univariate analysis and Kaplan-Meier survival models with log-rank tests. Cox regression survival analysis was used to generate both unadjusted hazard ratios (with DLD status coded as 1) and those adjusted for the following confounders: nonverbal IQ, adversity score, age at first offence, number of previous offences and ICU total score. Recidivism as the outcome variable was coded as 1 (reconvicted) and time to reconviction was coded in weeks. To correct for clustering we applied the Huber-White Sandwich variance estimator (Rogers, 1993). Significance was set at \( p < 0.05 \). Cumulative incidence of reoffending at one year of follow-up was calculated as a percentage value (together with its 95% confidence interval) from the Kaplan-Meier survival curve - i.e. 1 minus the ‘survival’ probability.

### 5.6 Results

Descriptive characteristics of young offenders and their offences

Table 1 summarises several descriptive features of the young people in this study and the offences they were convicted for, in non-mutually exclusive categories. Of the 145 participants seen the majority (77%) were male and the mean age of the sample was 15.8 (\( SD = 1.5 \)). There was no significant difference (\( t(143) = .766, p = .45 \)) between the age of males (\( M = 15.8, SD = 1.5 \)) and females (\( M = 15.6, SD = 1.5 \)) in this study. Almost half of the young people (70) had committed a violent criminal offence,
including threats of violence (although this subgroup was small comprising of 8 participants).

Table 1. Offender and offence characteristics for the whole study cohort (N=145)

<table>
<thead>
<tr>
<th>Offender Characteristics</th>
<th>Percent</th>
<th>Number of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>77%</td>
<td>112</td>
</tr>
<tr>
<td>Consumes alcohol</td>
<td>40%</td>
<td>56</td>
</tr>
<tr>
<td>Drug misuse</td>
<td>38%</td>
<td>55</td>
</tr>
<tr>
<td>Not in Education, Employment or Training</td>
<td>26%</td>
<td>38</td>
</tr>
<tr>
<td>Registered Special Needs</td>
<td>25%</td>
<td>36</td>
</tr>
<tr>
<td>History of going missing from home</td>
<td>20%</td>
<td>29</td>
</tr>
<tr>
<td>Current Education, Health and Care Plan</td>
<td>16%</td>
<td>23</td>
</tr>
<tr>
<td>Looked after Child</td>
<td>15%</td>
<td>22</td>
</tr>
<tr>
<td>Bilingual</td>
<td>12%</td>
<td>18</td>
</tr>
<tr>
<td>History of Self-Harm</td>
<td>10%</td>
<td>14</td>
</tr>
<tr>
<td>Historically received Speech and Language therapy</td>
<td>1%</td>
<td>2</td>
</tr>
<tr>
<td>Index of Multiple Deprivation quintile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 3</td>
<td>12%</td>
<td>18</td>
</tr>
<tr>
<td>4</td>
<td>22%</td>
<td>32</td>
</tr>
<tr>
<td>5</td>
<td>66%</td>
<td>95</td>
</tr>
<tr>
<td>Offence characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violent only</td>
<td>48%</td>
<td>70</td>
</tr>
<tr>
<td>Offence against property</td>
<td>27%</td>
<td>39</td>
</tr>
<tr>
<td>Public Order/Drunk &amp; Disorderly</td>
<td>8%</td>
<td>11</td>
</tr>
<tr>
<td>Drug Offences</td>
<td>5%</td>
<td>8</td>
</tr>
<tr>
<td>Property and Violent</td>
<td>5%</td>
<td>7</td>
</tr>
<tr>
<td>Motoring offences</td>
<td>5%</td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
<td>3</td>
</tr>
</tbody>
</table>

Thirty-six participants had a registered special need recorded in their file which fell into the following three, non-mutually exclusive, categories: Behaviour, Emotional and Social Difficulties (SEBD) 16% (23), Attention Deficit Hyperactivity Disorder (ADHD), 10% (14) and Autism 2% (3). Descriptive statistics, for the entire sample, pertaining to the psycholinguistic variables are displayed in Table 2. Independent t-tests revealed no
significant difference between males and females for nonverbal IQ ($p = .33$), expressive ($p = .68$) or receptive ($p = .87$) language, the adversity score ($p = .53$), age at first offence ($p = .45$), number of previous offences ($p = .43$), IMD quintile ($p = .58$) or the ICU total score ($p = .26$). Due to this finding the males and females in the sample were combined as one group for all subsequent analyses.

Table 2. Psycholinguistic profile and variables of interest for the sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (n)</th>
<th>Range</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonverbal IQ</td>
<td>87.11 (141)</td>
<td>57, 117</td>
<td>12.7</td>
</tr>
<tr>
<td>Expressive Language score (RS)</td>
<td>76.79 (145)</td>
<td>55, 110</td>
<td>14.4</td>
</tr>
<tr>
<td>Receptive Language score (USP)</td>
<td>77.25 (145)</td>
<td>55, 115</td>
<td>15.4</td>
</tr>
<tr>
<td>Adversity Score</td>
<td>3.1 (145)</td>
<td>0, 9</td>
<td>2.16</td>
</tr>
<tr>
<td>Age at first offence</td>
<td>14.5 (145)</td>
<td>10.2, 17.9</td>
<td>1.80</td>
</tr>
<tr>
<td>Number of previous offences</td>
<td>1.68 (145)</td>
<td>0, 20</td>
<td>3.84</td>
</tr>
<tr>
<td>IMD Quintile</td>
<td>4.47 (145)</td>
<td>1, 5</td>
<td>.882</td>
</tr>
<tr>
<td>ICU total score</td>
<td>28.2 (91)</td>
<td>7, 53</td>
<td>9.28</td>
</tr>
</tbody>
</table>

All scores are reported as standard scores. RS = Recalling sentences, USP = Understanding Spoken Paragraphs.

Eighty-seven participants (60%) were identified as having DLD, as defined by gaining a score of 1.5 SD or more below the population mean, on the expressive and/or the receptive subscales of the CELF-4. The results are displayed in Table 3. Interrater reliability was found to be high (Kappa = 0.83, $p = <0.001$). We were also interested in delineating cohort members who, although not delineated as having DLD, could be described as having poor language skills (i.e. with a standard score of 90 or below - the bottom 25% of the general population). We found that 125 of participants (86%) and
121 (83%) gained a score in this category for formulated sentences and understanding spoken paragraphs, respectively.

Table 3. Psycholinguistic profiles of the cohort by group status (DLD vs Non-DLD).

<table>
<thead>
<tr>
<th>Group</th>
<th>DLD (N = 87)</th>
<th>Non DLD (N = 58)</th>
<th>t</th>
<th>df</th>
<th>Mean Difference</th>
<th>[95 % CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonverbal IQ</td>
<td>83.1 (12.1)</td>
<td>93.2 (11.1)</td>
<td>5.01***</td>
<td>139</td>
<td>5.01</td>
<td>[6.11, 14.0]</td>
</tr>
<tr>
<td>n = 85</td>
<td>n = 56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expressive Language</td>
<td>67.8 (10.1)</td>
<td>90.4 (7.4)</td>
<td>14.6***</td>
<td>143</td>
<td>22.7</td>
<td>[19.6, 25.7]</td>
</tr>
<tr>
<td>FS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receptive Language</td>
<td>67.8 (10.9)</td>
<td>91.4 (8.8)</td>
<td>13.8***</td>
<td>143</td>
<td>23.6</td>
<td>[20.2, 27.0]</td>
</tr>
<tr>
<td>USP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adversity Score</td>
<td>3.7 (2.2)</td>
<td>2.3 (1.8)</td>
<td>4.01***</td>
<td>143</td>
<td>1.40</td>
<td>[0.71, 2.09]</td>
</tr>
<tr>
<td>Age at first offence</td>
<td>14.2 (1.8)</td>
<td>15.0 (1.8)</td>
<td>2.51*</td>
<td>143</td>
<td>.753</td>
<td>[0.16, 1.35]</td>
</tr>
<tr>
<td>Number of previous</td>
<td>2.5 (4.6)</td>
<td>.52 (1.7)</td>
<td>1.95**</td>
<td>143</td>
<td>.634</td>
<td>[0.69, 3.20]</td>
</tr>
<tr>
<td>offences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMD Quintile</td>
<td>4.5 (.82)</td>
<td>4.3 (.97)</td>
<td>0.21</td>
<td>143</td>
<td>.150</td>
<td>[0.09, 0.50]</td>
</tr>
<tr>
<td>ICU Total Score</td>
<td>30.8 (9.0)</td>
<td>25.4 (8.8)</td>
<td>5.40**</td>
<td>89</td>
<td>1.87</td>
<td>[1.69, 9.13]</td>
</tr>
<tr>
<td>n = 44</td>
<td>n = 47</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001. Note: All scores are standard scores means and in brackets standard deviations. DLD = Developmental Language Disorder, FS = Formulated Sentences, USP = Understanding Spoken Paragraphs

Prevalence of DLD by group (first time offenders versus previous offenders)

Despite efforts to limit the study to first time offenders, a third of the young people (49) had a history of prior offending. The mean number of previous offences in this subgroup was 1.7 (SD = 3.8), range 0 to 20. Given that the majority of the sample (96) were first time offenders, a number of participants had no previous history of offending (value of 0), and the median for the sample was indeed 0. We defined prior offending as one or more offences that the young person had been found guilty of, or admitted
guilt to, and that occurred prior to the commencement of the young person’s current order. Of the young people seen, 96 (66%) were first time offenders, with no officially recorded or self-reported prior offending, 16 (11%) had committed one previous offence and 33 (23%) had committed two or more previous offences. The presence of DLD in the group of first-time offenders was 50%, the means and standard deviations of this sub-group are shown in Appendix 1. No significant differences were found for adversity score, age at first offence, IMD quintile or ICU total score for first time offenders with DLD versus those without. There was an increased prevalence of DLD in the group of young people who had committed one or more previous offences (80%) when compared to the group of first time offenders (50%). This difference was statistically significant $\chi^2 (1, N=145) = 11.84, p = <.001$.

Rates of recidivism

Our primary interest was investigating the risk of continued offending (i.e., recidivism) across the two groups, DLD versus non-DLD. In this sample 46% ($n = 67$) of the youths reoffended and the mean time to next offence was 33 weeks. No significant gender differences were found, $\chi^2 (1, N=145) = .246, p = 0.62$), with 53% (59) of the males reoffending and 58% (19) of the females. Table 4 details reoffending per DLD status.

**Table 4. Reoffending by Group**

<table>
<thead>
<tr>
<th>Reoffended</th>
<th>Group status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DLD</td>
<td>Non-DLD</td>
</tr>
<tr>
<td>No</td>
<td>34</td>
<td>44</td>
</tr>
<tr>
<td>Yes</td>
<td>53</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>87</td>
<td>58</td>
</tr>
</tbody>
</table>

We used survival analysis to examine links between offender characteristics and recidivism rates, this shows how likely it is that an offender will remain offence-free during the follow up time of 52 weeks. The cumulative incidence of the absolute risk of reoffending within a year of the young person’s court order was 62% (CI 52-72) for the
DLD group and 25% (CI 16-39) for the Non-DLD group. To provide a visual representation of the timing of recidivism in both groups we plotted a cumulative incidence curve (Figure 1).

**Figure 1.** Kaplan-Meier plot detailing time to subsequent conviction

Several findings are worthy of note. First, a steady accumulation of reoffending over time can be seen and a relatively high proportion of youths reoffend within a short period of time. Of the young people who reoffend, 77% from the DLD group and 71% from the non-DLD group, had done so at 26 weeks of follow up. Second, youths entering the youth justice service with unidentified DLD were at greatest risk of recidivism.

To further assess reoffending in the two groups Cox survival analysis was utilised after assessing and meeting the assumption of proportional hazards (p = .99). First, bivariate survival analysis was conducted by running unadjusted models for each independent variable to see the influence of each predictor individually on the outcome. Unadjusted and fully adjusted results from Cox modelling of time to reoffence are
reported in Table 5. Cox proportional hazards regression confirmed that young offenders with DLD status were approximately 3 times more likely to reoffend following commencement of their order than offenders without DLD.

Table 5. Hazard Ratios for reoffending

<table>
<thead>
<tr>
<th></th>
<th>Unadjusted estimates</th>
<th>Adjusted estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hazard Ratio</td>
<td>95% CI</td>
</tr>
<tr>
<td>Nonverbal IQ</td>
<td>0.97*</td>
<td>0.95 - 0.99</td>
</tr>
<tr>
<td>Group Status (DLD)</td>
<td>3.38****</td>
<td>2.24, 5.08</td>
</tr>
<tr>
<td>Adversity Score</td>
<td>1.31***</td>
<td>1.23, 1.39</td>
</tr>
<tr>
<td>Age at first offence</td>
<td>0.81**</td>
<td>0.70, 0.93</td>
</tr>
<tr>
<td>Number of previous offences</td>
<td>1.14***</td>
<td>1.10, 1.18</td>
</tr>
<tr>
<td>IMD Quintile</td>
<td>1.21</td>
<td>0.98, 1.50</td>
</tr>
<tr>
<td>ICU Total Score</td>
<td>1.01*</td>
<td>1.00, 1.02</td>
</tr>
</tbody>
</table>

*p <.05 **p <.01 *** p <.001

Following adjustment for Nonverbal IQ, adversity score, age at first offence, number of previous offences, IMD quintile and ICU total score, the independent elevation in risk linked with DLD persisted, indicating that these covariates do not account for the difference. In the fully adjusted model young offenders with DLD were over four times more likely to reoffend during the follow up period than their peers without DLD. In this model, group status, adversity score, number of previous offences and ICU total score remained significant. In total, 96 participants completed the ICU. In order to retain the statistical power with the full sample of 145 participants, we conducted a sensitivity analysis including all the variables but omitting the ICU. This revealed a similar pattern to what we observed in the primary analyses with DLD remaining the most significant predictor of risk of reoffending with a hazard ratio of 2.40 (CI 1.77 – 3.22). This
sensitivity analysis revealed two further significant variables, adversity score (HR 1.14, CI 1.04 – 1.24) and number of previous offences (HR 1.08, CI 1.02 – 1.13). Sequential omission of non-significant variables in the sensitivity analysis revealed the same significant predictors: DLD group status (HR 2.37, CI 1.70 – 3.32), adversity score (HR 1.16, CI 1.10 – 1.23) and number of previous offences (HR 1.08, CI 1.07 – 1.10).

For the young people, with DLD, who continued to be involved in crime we were also interested in whether the severity of crime increased. Data pertaining to the new crime was extracted from youth justice files and is presented in Figure 2.

**Figure 2.** Seriousness of new offence for the DLD group

The relationship between DLD and crime severity

In order to determine whether crime severity scores were higher for those with DLD, data was extracted from the participants’ files relating to the severity score of the offence committed pertaining to the young person’s current order. Scores on the crime severity index were skewed, therefore medians rather than means were used as a basis for analysis. No significant between-group difference was found, $U = 2294.00$, $p = .337$ (parametric $t$ test also yielded non-significant findings, $t (143) = 1.25$, $p = 0.22$), both groups had a median of 3. The mean for the DLD group was 3.2 and 2.8 for the Non-DLD group. As a small proportion of the group had previously been convicted of
an offence, a further analysis considered the highest crime severity score in the young person’s file. This resulted in between-group differences that were statistically significant, $U = 1964.00$, $p = .02$ (parametric $t$-test also yielding significant findings, $(t(143)) = 2.59$, $p = .01$). The mean of the young people with DLD was significantly higher ($M = 3.8$ $SD = 1.9$) than the Non-DLD participants ($M = 3.0$ $SD = 1.5$).

Figure 3 illustrates the crime severity (relating to the participants current order) for the sample by group. For illustrative purposes the crime severity score was split into three groups. Participants scoring 1 and 2 on the gravity score matrix comprised of the first group. These scores were amalgamated because first-time crimes in this category are diverted from formal youth justice and processed by way of triage intervention. The second group consisted of participants scoring 3 and 4 on the gravity score matrix and the last group considered those with a gravity matrix score of 5 or above. No significant difference was found between these groups, $(\chi^2(2, N=145) = .542$, $p = 0.76$).

Figure 3. Crime severity scores for the DLD and non-DLD group
5.7 Discussion

This study aimed to estimate the point prevalence of unidentified DLD in a sample of young people in the YJS, concentrating specifically on first time offenders. Also, we examined rates of recidivism and crime severity of the young people with unidentified DLD with their counterparts without DLD. This is the first survival analysis of reoffending for youths that examines DLD alongside other variables considered strong influences for future reoffending.

Prevalence of DLD

The CELF-4 scores indicated that, for the group overall, language was a significant area of difficulty. Our findings also confirm those from earlier investigations with a high proportion of the group, 87 participants (60%), fulfilling the study’s criteria for DLD. Furthermore, in line with previous studies, is the unidentified nature of these difficulties with only two participants in this study divulging that they had previously been a recipient of speech and language therapy services. No participant was currently known to their local speech and language therapy service at the time of assessment. This indicates that as young people enter the youth justice service, their communication needs are not considered a priority and, therefore, are at danger of being overlooked by youth justice staff. When we considered the language skills that could be described as below average, i.e. what we would expect to find in the bottom 25% of the general population, we found that 86% of the sample fell in this category.

These results are similar to those found by Lount, Purdy and Hand (2017) in their study considering 33 young male youth offenders and remandees in youth justice residences in New Zealand. When considering the participants’ core language score on the CELF-4 they reported that 87% of the group had standard scores below 100. In a similar vein, when considering 58 young male incarcerated offenders in the United Kingdom, Bryan and colleagues (2007) found 90% of their sample scored below average on the listening vocabulary subtest of the TOAL – Third Edition (Hammill et al., 1994). Such
findings lead to concerns regarding the abilities of the young people subject to court orders to effectively engage with intervention. Indeed, when we consider this against the backdrop of changing discourse around youth justice, and the aim of the Ministry of Justice to ensure RJ underpins all youth justice disposals (Ministry of Justice, 2012), a concern arises pertaining to the capacity of the young people involved. This can be seen in the referral order whereby a young offender must attend a referral order panel, consisting of youth offending staff, lay members of the community and the victim, should they choose to attend. This panel meeting differs from the formality of a youth court appearance and instead fosters a dialogic approach with open communication encouraged. Referral orders allow the young offender to take responsibility for the harm caused and foster an appreciation of the impact on the victim (Newbury, 2011). To effectively carry out this role one must listen to, process, and keep in working memory complex, emotional accounts that detail the event from the victim’s perspective. The findings of our research suggest that at least 50% of the participants may not have the linguistic capacity to engage effectively in such processes. The actions of a young person unable to manage the linguistic processing and production demands in such a situation are likely to alienate them from others and they may be perceived as rude, disingenuous or lazy (Snow & Powell, 2008) this has the potential to disadvantage the young person further in their passage through the YJS (Snow & Powell, 2011). Indeed, when victims have voiced dissatisfaction with RJ processes they attribute this to the offenders being disrespectful, failing to engage and provide answers (Van Camp & Wemmers, 2013). A fundamental aim of RJ is to take into consideration the victims’ movement (Robinson & Shapland, 2008), and thus provide a mechanism for giving a voice to victims and empower them to meet the offender and express the real impact of the crime on their lives. Despite the focus of RJ being on the victims’ perspective, research on RJ has revealed some negative findings (Choi, Bazemore & Gilbert, 2012) that are linked with adverse outcomes for victims (Bazemore & Schiff, 2005). A re-occurring theme within this literature points to the
insensitivity of the dialogue of the offenders (Hayes, 2006), and the insincerity of apologies offered (Daly, 2002; Strang, Sherman, Newbury-Birch, & Inkpen, 2006).

The first novel aim of this study was to ascertain the prevalence of DLD in FTEs to the youth justice service. We found that half of the young FTEs (n=96), therefore, 48 participants, gained scores on the standardised tests indicative of DLD. An interesting finding was the prevalence of DLD increased for the subsample of young offenders who had previously offended (n = 49) with (80%) meeting the criteria for DLD. This difference was statistically significant, and the disparity could not be explained by SES.

Our hypothesis for question one was met, as the prevalence of DLD in first time offenders was significantly different from those who had previously offended. It was, however, in line with the prevalence values in the range 50 to 60% that have been reported previously in the literature (Bryan et al., 2015; Snow et al., 2016). Interventions within the youth justice service rely heavily on the medium of language (Snow & Powell, 2012) and weak language skills may preclude young people from deriving the full benefit of the rehabilitation on offer. Such findings have previously been highlighted (Bryan et al., 2015) and a report to the Children's Commissioner detailed the impact that communication difficulties has on a young person's ability to access and profit from interventions designed to prevent them from re-offending (Hughes et al., 2012). The delivery of interventions within the youth justice would benefit from adaptations allowing for more appropriate interventions and equal access for those with DLD. This may not occur, however, unless youths with DLD are appropriately assessed and identified.

Are rates of recidivism higher in young people with unidentified DLD?

The question of interest in the current study was not to determine causal links, but to determine whether there was a difference in the pattern of reoffending in young offenders with unidentified DLD compared to those whose language skills did not fall in the clinical range. We compared the survival curves for offenders with unidentified DLD
and those classed as non-DLD. This is the first study, to the authors knowledge, that considers rates of recidivism in young people with unidentified DLD. The annual national youth justice statistics for the year ending March 2016 detail rates of recidivism, within 52 weeks, of 42% (Home Office, 2018). This figure does not include young people who are diverted from formally entering the youth justice system through the triage scheme. Despite our cohort including these young people, our results are reflective of this national picture with, just under half of the young people, 46%, receiving a further conviction within 52 weeks from the date of their order. Compared with their offending counterparts, the young offenders with DLD displayed an increased risk of reoffending during the first year following their assignment to community order. The Cumulative incidence rates of re-offending were higher for the DLD group than for the Non-DLD group and the difference was statistically significant. The survival curve comparison showed a significant difference in the survival curves of both groups. Not only did the Non-DLD group reoffend less but survival analysis revealed that the non-DLD group had a significantly longer time until they reoffended.

Key variables that are associated with re-offending were also considered, namely, nonverbal IQ, age at first offence, number of previous offences, a composite adversity score and callous and unemotional traits. Unadjusted estimates revealed all variables were significantly associated with re-offending. In the adjusted model the risk of reoffending rose with increasing number of adverse conditions, but the strongest predictor was DLD status. Language was the most powerful predictor of the relative risk of reoffending, and elevated risk in this group was not explained by other risk factors in the final multivariable model. The DLD participants were found to be over four times more likely to reoffend.

Aside from the triage pathway, on arrival into the youth justice service young people are assessed using a framework entitled ‘Asset plus’ (YJB, 2014). Incorporated within this is the likelihood or risk of a young person reoffending and as such matching
intervention to that risk level (Ministry of Justice, 2016). This model, known as the Risk, Needs and Responsivity (RNR) (Andrews & Bonta, 2003) has been shown to reduce reoffending (Koehler, Losel, Akoensi, & Humphreys, 2013; McGuire, 2008;). To satisfy the responsivity component of this model a young person must be able to access the rehabilitation on offer. There is a danger that without identification of DLD responsivity could be sacrificed. Our findings suggest that young offenders who possess better language skills may be more responsive to the restorative interventions on offer. Although direct comparison is complicated by the distinct court orders the participants were subject to, the Asset plus was designed with the RNR principles in mind. This framework concentrates on providing different levels of intervention according to the risk level of the young person and the presence of criminogenic factors. Research on recidivism details the best predictors of re-offending include age at first offence, prior offending (Hayes & Daley, 2004), criminal parent history, addiction to alcohol and drugs and academic performance (Murray & Farrington, 2010). Knowledge of the risk factors associated with recidivism may help to identify points of intervention or prevention. Our findings speak to the possibility of a previously overlooked predictor, the presence of DLD. Poor language affects one’s capacity to interpret and respond to the social environment. Moreover, the ability to understand language facilitates performance in school, an institution that provides protective factors against anti-social behaviour.

Marked difficulties with language seem likely to compromise the effectiveness of interventions deigned to ameliorate offending behaviour. For example, community-based interventions include a range of topics including anger management, victim awareness, substance misuse and appropriate sexual behaviour conducted either one-to-one or in a group setting. For the substantial proportion of youths who enter the YJS, their unidentified DLD will limit their capacity to fully engage in rehabilitation and therefore enable behaviour change. Importantly, such issues may not be well understood by staff whose job it is to enable behaviour change.
Identifying youths with DLD, and more broadly considering those with low language abilities is important for the youth justice systems as they seek to understand and address offending behaviours. Despite laudable attempts to recognise DLD at the earliest point in the YJS pathway, existing detection methods lack sensitivity (Hughes et al, 2017). Indeed, the framework available to youth justice staff, the asset plus, relies on self-report from the young person. This results in a disjuncture between the prevalence rates reported in research studies and those identified by youth offending team staff (Gregory & Bryan, 2011; Hughes et al, 2017). Additionally, relying on youth offending team staff to identify DLD is problematic. First, the majority of these young people have reached adolescence without their difficulties being identified by significant others or educational establishments. Youth justice staff may perceive teachers more skilled in this area and therefore erroneously believe no difficulty is present. Teachers, however, note they often lack the skills to assess oracy (Dockrell, Howell, Leung, & Fugard, 2017) especially in adolescence when it becomes more difficult to reliably distinguish atypical performance (Mercer, Warwick, & Amhed, 2017).

Our findings suggest collaboration is warranted between youth justice staff and the speech and language therapy profession to enable early identification and intervention so that these young people can fully access restorative justice processes and the intervention on offer. Specialist input for young people on intensive supervision and surveillance programmes should be extended to first time entrants in the YJS. Our findings suggest that first time entrants in the YJS with DLD have a higher risk of re-offending.

Crime Severity

The findings pertaining to crime severity are less clear. When considering the young person’s current offence, no significant differences were found in offending severity. However, when the highest crime score was extracted from the young person’s file a significant difference was found, with the DLD participants evidencing a higher severity
crime score. It is possible this finding is confounded with previous offending. Too few numbers in the reoffending categories of the non-DLD prevented meaningful group comparisons in this regard.

5.8 Limitations

These novel findings should be interpreted in the context of certain limitations. The time to follow-up was relatively short and as the participants were still adolescents, a longer follow up time may have revealed more offences (Moffitt, 2007). We recognise that recidivism can be measured adopting a broad definition, including future recorded police contact (Hayes & Daly, 2004) or arrests, whilst other investigators have adopted a narrower definition of only new convictions (Luke & Lind, 2002). We decided to take a conservative approach and recognise this may lead to an underestimation of recidivism. Measuring recidivism via arrest can lead to an over-estimate of the actual number of re-offences (Ryan et al., 2013) as not all arrests lead to a conviction. Conversely, we accept not all crimes are detected. Additionally, due to the relatively short follow up time, some participants could have been waiting to attend court for offences which subsequently resulted in a conviction. Perhaps a more middle ground would be a charged offence, as credible evidence has to exist for charges to be brought.

A notable limitation regarding the reoffending was that only 94 participants completed the ICU, although sensitivity analysis revealed a similar pattern of association and risk when restricting the sample to these individuals. When the overall sample was considered the results held for DLD status being the most powerful predictor of relative risk of reoffending. Sensitivity analysis illustrated DLD status, adversity score and number of previous offences as significant predictors of risk for reoffending. Therefore, even when controlling for demographic and other influential risk factors the DLD participants were 2.4 times more likely to recidivate, when the ICU was omitted from the model.
One difficulty in assessing and comparing programmes and participants arises from the multi-site methodology. Although necessary to gain sufficient power, the services provided from the variety of youth offending teams (YOTs) may have differed. In a similar vein, the youths who met the definition of DLD were routinely offered a forward referral to local speech and language therapy services by their case worker. Although not all agreed to this, some did and the increased understanding of the YJS staff meant that young people benefited.

A methodological challenge relates to the voluntary nature of participation, which makes the study susceptible to self-selection bias. In the YOTs only half of the young people referred attended the appointment. It would be reasonable to conclude that those who failed to attend did not want to take part in tasks they perceived to be difficult and therefore the prevalence of DLD could be underestimated. Due to time constraints, this study concentrated on the structural aspects of language and no measure of social communication disorder was recorded. Successful communication in life depends on all areas and it is important therefore to explore all areas of language functioning.

5.9 Conclusions

The current study extends the literature by investigating the association between unidentified DLD and reoffending risk. These findings identify the role of language in the continuation of offending behaviour and therefore, underscore the importance of considering the language skills of first-time entrants to the YJS. Presently speech and language therapy input with the YJS has been predominately reserved for those in custody or on intensive orders.

We posit that young people with unidentified DLD represent a group of young people who are challenged in their ability to access verbally mediated strategies in the youth justice service. Implicit in many youth justice interventions is the presumption that young people have the ability to effectively engage with the interventions. Our research
adds to the growing body of evidence detailing this may not be the case and also tentatively suggest the impact of this. Identifying youths with DLD at the earliest point into the YJS is important as youth justice staff seek to address the specific dynamics that may contribute to desistence. The need for closer relationships between the youth justice service and the speech and language therapy profession has previously been emphasised (Bryan et al, 2015; Snow & Sanger, 2011) and perceived as effective (Bryan & Gregory, 2013; Snow et al., 2018). Failure to address the component skills which limit a young person’s ability to actively participate in verbally mediated interventions makes the understanding of them more challenging. It is possible the unidentified nature of language difficulties experienced by these young people is one area of risk that is unintentionally overlooked. In the current youth justice framework language is overshadowed by factors considered more influential. This is problematic as our research suggests that language status is the most potent risk factor preventing a young offender from desisting.
### 5.10 Appendix 1

**Table 4.** Psycholinguistic profiles of first-time offenders by group status.

<table>
<thead>
<tr>
<th>Group</th>
<th>DLD (N = 48)</th>
<th>Non DLD (N = 48)</th>
<th>t</th>
<th>df</th>
<th>Mean Difference</th>
<th>95 % CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonverbal IQ</strong></td>
<td>84.8 (11.9)</td>
<td>93.6 (11.85)</td>
<td>3.54*</td>
<td>91</td>
<td>8.74</td>
<td>[3.84 to 13.63]</td>
</tr>
<tr>
<td><strong>Expressive Language FS</strong></td>
<td>69.9 (10.0)</td>
<td>90.1 (7.82)</td>
<td>11.01***</td>
<td>94</td>
<td>20.2</td>
<td>[16.5 to 23.9]</td>
</tr>
<tr>
<td><strong>Receptive Language USP</strong></td>
<td>69.6 (11.3)</td>
<td>92.2 (9.1)</td>
<td>10.73***</td>
<td>94</td>
<td>22.5</td>
<td>[18.4 to 26.7]</td>
</tr>
<tr>
<td><strong>Adversity Score</strong></td>
<td>2.8 (1.8)</td>
<td>2.1 (1.9)</td>
<td>1.85</td>
<td>94</td>
<td>.688</td>
<td>[.049 to -1.42]</td>
</tr>
<tr>
<td><strong>Age at first offence</strong></td>
<td>15.0 (1.6)</td>
<td>15.3 (1.6)</td>
<td>.853</td>
<td>94</td>
<td>.271</td>
<td>[.360 to .904]</td>
</tr>
<tr>
<td><strong>IMD Quintile</strong></td>
<td>4.44 (.94)</td>
<td>4.31 (.99)</td>
<td>.632</td>
<td>94</td>
<td>.125</td>
<td>[.267 to -.517]</td>
</tr>
<tr>
<td><strong>ICU Total Score</strong></td>
<td>28.3 (8.0)</td>
<td>24.9 (8.9)</td>
<td>1.76</td>
<td>70</td>
<td>3.51</td>
<td>[.462 to -7.48]</td>
</tr>
</tbody>
</table>

*Note: All scores are standard scores means and in brackets standard deviations. DLD = Developmental Language Disorder, FS = Formulated Sentences, USP = Understanding Spoken Paragraphs*
Chapter 6: General Discussion

6.0 General Discussion

The research presented in this thesis aimed to explore a number of distinct areas relating to the psycholinguistic and socioemotional characteristics of young people who come into contact with the YJS. The original data collected for this thesis provides, not only the largest sample of young offenders and language abilities, but also the first empirical evidence considering unidentified DLD as a variable with respect to rates of recidivism and severity of crime. Additionally, it provides novel findings pertaining to the point prevalence of DLD in first time entrants to the YJS and young female offenders. Within the studies reported in this thesis a distinction can be drawn pertaining to the identification of DLD in the participants. In light of current knowledge detailing high levels of unidentified DLD in the youth offending population, secondary analysis allowed for investigation of crime related outcomes for young adults with identified DLD. Studies 1 and 2 report on outcomes for young adults for whom DLD was identified from an early age. In contrast the participants investigated in Studies 3 and 4, possessed language difficulties that had largely gone unrecognised. Several important findings have emerged from this novel body of work and this chapter aims to discuss key issues that the research has contributed to and their implications. The chapter ends with consideration of the limitations of the findings, the key challenges of undertaking research in this area, and directions for future research.

6.1 Key findings of secondary analysis

To understand life trajectories and allow for the investigation of change over time randomised longitudinal research is essential (Laursen, Little & Card, 2013). This methodology is the most effective way to determine the impact of intervention over time. Although research of such magnitude is not possible within the time constrains of a 3-year Ph.D., secondary data analysis, allows for the exploration of such questions.
Utilising existing data that has a documented longitudinal history, such as the MLS, provided an opportunity to advance new insights and develop the distinction between identified and non-identified DLD.

6.1.1 The potential distal positive effects of identification and support for DLD.

In studies 1 and 2 of this thesis, it was found that young people with identified DLD exhibit less risky behaviour and have less contact with the police and/or are less involved in crime than their peers. I also found evidence of young adults with DLD receiving continued support with tasks relating to financial management. These findings underlined the potential distal positive effects of identification and support of DLD in childhood.

Much of the evidence explored in the Introduction to this thesis suggests that high levels of DLD are consistently prevalent in youth justice samples (Bryan et al, 2015; Hopkins et al, 2018). A particular challenge for the YJS is that this DLD has previously been unrecognised; therefore, the affected individuals received little or no help during their development and formal education. Conversely, there is a dearth of research pertaining to criminality outcomes among those individuals with identified DLD who have received such interventions. Intervention studies (Ebbles, McCartney, Slonims, Dockrell & Norbury, 2018; Ebbles & Van Der Lely, 2001; Wright, Pring & Ebbles, 2018) and longitudinal evidence (Durkin et al., 2009) suggest that young people who receive targeted intervention during school, following diagnosis of DLD, have improved outcomes. Secondary analysis in this thesis allowed me to investigate if this effect persists for crime-related variables. Study 1 provides novel information, in a UK context, pertaining to contact with the police, rule-breaking behaviours and aggression scores in young adults with a history of identified DLD compared with a control group comprised of peers matched on age and SES. Additionally, because of its association with crime, substance use was also examined.
Although the young adults with a history of identified DLD obtained significantly higher aggression scores, they reported less arrests and less contact with local police officers than Age Matched Peers (AMPs). Although the results in Study 1 suggest elevated sub-clinical levels of aggression for those with a history of identified DLD, this did not manifest in rule-breaking behaviours. A significantly greater number of AMPs reported illicit drug use, but comparable numbers of both groups reported alcohol consumption. There was a significant group difference, however, in relation to alcohol use as participants in the AMP group reported consuming a significantly greater number of alcoholic units and spending significantly more days under the influence of alcohol in the preceding 6 months. This suggests that the AMP group engaged in more risky behaviour than the DLD group. Although significantly more members of the DLD group reported drinking alone, no difference was found for drinking with friends, suggesting this risky behaviour cannot fully be explained by engagement with others.

Potential explanations for the statistically significant difference in likelihood of police contact and risky behaviour between the two groups include supportive environments during the early and developing years. In contrast to the results found with young people in the YJS, with unidentified language difficulties, the participants in Study 1 received targeted language intervention. This distinction between unidentified and identified DLD could affect developmental pathways. It is possible the long-term language support received throughout the school years provided the young people with enhanced strategies, equipping them to deal with, and therefore mitigate, later problematic behaviour. Just as language difficulties pervade all aspects of life, continued intervention has the potential to affect many aspects of life, ranging from continued school engagement to increased emotional self-regulation. This parallels the work of Head Start in the USA, a public pre-school programme exclusively aimed at disadvantaged families. Long term distal outcomes were found for the participants such as fewer parent-child dysfunctional interactions (McKelvey et al. 2015), less behavioural problems (Currie & Neidell 2007) and less offending (Carneiro & Ginja
Additionally, the recognition of DLD and subsequent long-term intervention may have strengthened the parent child relationship. The parents of children who receive targeted intervention from an early age are often included in the therapeutic alliance, even when the intervention occurs at school. Therapeutic alliance refers to the relationship between the speech and language therapist and the client (Freckman, Hines, & Lincoln, 2017) and often extends to the caregivers who play a vital role in therapy (Anderson, Balandin, & Stancliffe, 2015). To access language units, children require an Education and Health Care Plan (EHCP), formally known as a Statement of Special Educational Need, which documents the additional provision required. Parents are included in this process and are invited to at least one annual review of the EHCP and often consulted regarding individualised education plans. It is possible that the early professional intervention given to their children in language units fostered an environment of parental support and an understanding of their child’s long-term needs. The relationship with clinicians and specialist teaching staff potentially aids parents to gain a greater understanding of the impact of DLD. This has been seen in other conditions such as autism whereby intensive early intervention with parents is associated with a decrease in autism prodromal symptoms (Green et al, 2017).

These results suggest that it is possibly not DLD per se that is associated with offending, but rather the ramification of growing up with the difficulties unidentified and an absence of service provision at both the individual and family level. Without the full extent of their difficulties identified no support during development will have been accessed and these young people may have instead been perceived by others as rude, lazy or indifferent. Additionally, the family will have received no support. It is well established that parents of children with identified developmental difficulties suffer more stress (Totsika, Hastings, Emerson, Lancaster & Berridge, 2011). One can assume that these parents will be in receipt of either financial or emotional help from relevant sources, such as parental groups, social services or local charities. This support is not available for the families of children with unidentified difficulties.
Although, arguably, labels can stigmatise young people, experience shows the opposite. University students were found to be more accepting of atypical behaviour when they were informed of an individual’s clinical diagnosis, in this case autism (Brosnan & Mills, 2016). Being diagnosed with a condition also allows individuals to self-identify and connect with others to provide mutual support, which may assist mitigation against negative consequences (Crabtree, Haslam, Postmes, & Haslam, 2010). Indeed, in my Study 2 I found that a significantly greater number of young adults with DLD reported obtaining support with financial matters compared to AMPs. This support, invariably from parents, included applying for financial products, paying bills and managing money. Qualitative studies utilising interview data from young adults with DLD further qualify the assistance and support that parents continue to provide (Carroll & Dockrell, 2012). It is worth noting that although the difference in managing money and planning ahead between the two groups (DLD versus AMPs) was not statistically significant the study did not include a measure of independent living. The degree to which the profile of independent living differed between participants could have impacted the results. Given the level of financial planning and management needed when living independently as opposed to in the family home the study is slightly hampered by the lack of information regarding living in or away from the family home.

6.1.2 Females with identified DLD

Despite all the young people in study 1 benefiting from childhood identification and intervention, a pattern of dissimilarity was noted in the gender results. It is well established that a higher proportion of males come into contact with the criminal justice (Ministry of Justice, 2018) compared to females. It is, therefore, worthy of note that an equal number of males and females (11%) reported trouble with the police, in the DLD group. In comparison results in the AMP group provided the expected gender results with 33% of males and 19% of females reporting trouble with the police. These results suggest that when considering the impact of DLD on conduct behaviour findings should
not be reduced to a single gender issue. The protective factor of early identification and intervention may have benefited males more than females, alternatively females with DLD could be more complex with greater co-morbidity. These findings emphasise that greater attention should be paid to females who come into contact with youth justice services. An appreciation of the impact of DLD for females and the effect on conduct behaviour, is an area that warrants further research.

6.2 Key findings of studies with youth offenders.

Studies 3 and 4 in this thesis comprise of novel data collected from 145 young people, 96 of whom were first time entrants to the YJS in the North West of England. It was found that 50% of the first-time entrants met the clinical criteria for DLD and prevalence was higher still among individuals with previous offences and who were, therefore, further entrenched in the YJS. Young offenders who were found to have unidentified DLD were almost 2.5 times more likely to reoffend than their non-DLD offending peers.

6.2.1 Every other first-time young offender has DLD

As young people travel through the YJS they are required to understand information given to them. This begins at the arrest stage and continues beyond the disposal of an order, whether it is a pre- or post-court order. Some of these young people may be able to self-monitor, identify and express any difficulties they encounter. This is not the case for all young people in the YJS and some face challenges that are hidden or misinterpreted. The Introduction to this thesis presented evidence from a range of western countries (Australia, New Zealand, UK and USA) that consistently report a disproportionately high prevalence of unidentified DLD among young offenders serving custodial institutions or community orders (Bryan et al, 2015; Hopkins et al, 2018; Hughes et al, 2017; Snow & Powell 2011). The profile of first-time entrants, however,
has escaped systematic attention. This is important as there are many potential implications of unidentified DLD for young people in relation to their participation in youth justice processes and rehabilitation programmes. Individuals with DLD face great challenges navigating the YJS and their communication difficulties could leave them compromised, raising questions regarding equitable opportunities for justice and rehabilitation. The current reliance on RJ policies requires advanced language skills and complex socioemotional understanding. At the very essence of RJ is victim impact and therefore the ability to communicate personal feelings as well as understand another person’s perspective and emotional state is crucial. Snow and Sanger (2011) detailed the communication demands in the context of RJ delineating that young people are expected to understand questions posed from multiple perspectives such as the police, youth justice workers and victims. Additionally, they must understand, and respond to, complex, often emotionally charged narratives with an appropriate meaningful, real-time explanation of what happened. The ability to discern expectations from the verbal and non-verbal signals from others is also relevant at the same time as maintaining their own, appropriate, non-verbal signals such as eye contact and body language. As Snow and Sanger (2011) additionally highlight this has to be done in real time when personal stress is most likely elevated. An added complication for first-time entrants is they have little or (usually) no knowledge of the legal system and the linguistic concepts used within it. It could be argued that any barrier in the ability to carry out these communication processes could have implications for the young person’s basic human rights and access to justice (Hughes et al., 2012).

Estimates of the prevalence of DLD on entry to the YJS not only define the scope of the problem but allow for tailored interventions at the earliest opportunity. Therefore, a further novel aim of my research was to ascertain the prevalence of DLD in first-time entrants to the youth justice service. As some participants did have previous offences, it allowed me to determine if the prevalence was elevated for this group. In Study 3 I found that 50% of first-time entrants scored 1.5 SDs, or more, below the normative
mean on the standardised language measures. A statistically significant higher prevalence of DLD was found in the group with more than one index offence (80%), which could not be explained by SES. Despite this significant difference the prevalence of DLD in the first-time entrants was still high and in all but two cases the difficulties were previously undetected. This finding suggests that the prevalence of DLD increases as youths become more entrenched in the YJS. In spite of this finding, the prevalence rate on entry to the YJS (i.e. 50%) was still within the range delineated in previously published research.

Although DLD was operationalised as yielding a score 1.5 SDs below the mean on the expressive and/or receptive language measure the severity profile of the CELF-4 was further considered. The CELF-4 is a widely used measure in clinical practice and therefore this information will be of importance to clinicians working in the YJS. When considering the language profile of the whole sample the largest proportion of those with language difficulties returned scores on the CELF-4 subtests in the ‘severe’ range. A binary pattern developed for both the expressive and receptive measures as opposed to a linear spread of results. The majority of the sample obtained scores in either the ‘average’ or the ‘severe’ range, with 19% and 13% for the expressive and receptive measures, respectively falling between the two. This suggests that the majority of the young people in this population have high levels of unmet need.

6.2.2 DLD is as prevalent in females as it is in male young offenders.

This was a further novel finding that I generated. Approximately 20% of young offenders, looked after in the community in England & Wales are female (YJB, 2018) and the proportion in this sample (23%) was representative of this national picture. Of the 33 females in this study 22 (67%, CI 50-80) met the criteria for DLD as did 58% (CI 49-67) of males. The females in this study appeared to have comparable language scores to that of the 112 males, and there was no significant gender difference in the
prevalence of DLD, \( p = 0.37 \). Previous international research has also failed to find a significant gender difference in language scores for incarcerated samples (Blanton & Dagenais, 2007).

6.2.3 Young offenders with DLD are almost 2.5 times more likely to reoffend.

Despite several studies demonstrating an overrepresentation of unidentified DLD in the youth offending population, findings with regards to the effects of DLD are lacking and as yet merely speculative. Although it has been postulated that unidentified DLD may affect a young person’s ability to engage in youth justice interventions this had not been empirically tested. This thesis, therefore, contains the first survival analysis of reoffending for young offenders with unidentified DLD compared to offenders who had language skills that did not fall in the clinical range. This is important information, particularly for those early in their contact with the YJS, such as young people subject to triage orders, cautions or referral orders.

Survival analysis based on the Cox proportional hazards model was used to examine links between offender characteristics and risk of recidivism. The analysis considered how likely it was that an offender would remain offence-free during the 52 week follow up period. Compared with the young offenders with ‘typical’ language, there was a markedly elevated reoffending risk during the follow up year for the participants with DLD. The absolute risk of reoffending for the DLD group (62%, CI 52-72) was significantly higher that the non-DLD group (25%, CI 16-39). Confounders known to be predictive of recidivism were also considered, to ascertain if they could account for this difference. These consisted of, in their entirety, nonverbal IQ, age at first offence, number of previous offences, a composite adversity score, SES and callous and unemotional traits. In the fully adjusted model the independent elevation in risk linked with DLD did not attenuate but persisted, indicating that the covariates did not account for the difference. Offenders with DLD were over four times more likely to reoffend during the follow up period than their peers without DLD in the fully adjusted model. In
this model only three other variables remained significant, adversity score, number of previous offences and callous-unemotional traits. The adjusted hazard ratios for these variables suggested that for every one unit increase in the adversity score the odds of reoffending rose by 22%, for every previous offence the odds of reoffending rose by 8% and for every one unit increase on the ICU the odds of reoffending rose by 4%. Due to an incomplete data set for the callous-unemotional variable, sensitivity analysis was conducted. When omitting this variable, the same pattern was revealed. DLD remained the most significant predictor of risk of reoffending with an adjusted hazard ratio of 2.40 (CI 1.77 – 3.22). Although the hazard ratio attenuated slightly, the confidence interval narrowed somewhat. Only the adversity score with a hazard ratio of 1.14, and number of previous offences with a hazard ration of 1.08, remained significant. Sequential omission of non-significant variables did not alter the findings. The sample in this study did not include the variability in the SES measure needed to find any notable SES differences as 88% of the participants resided in the most disadvantaged areas, i.e. IMD quintile 4 and 5.

6.2.4 DLD and crime severity: A mixed tale.

Study 3 in this thesis also revealed no between-group differences, when considering the current index offence, in relation to crime severity scores. There was a significant difference, however, when further analysis considered the highest crime severity score in the young person’s file, with the DLD group having statistically significant higher crime severity scores. This suggests that the crime severity is associated with previous offending as opposed to DLD.

6.2.5 Over half of young offenders exhibit socioemotional difficulties.

Over half of the young offenders in my Study 3 exhibited socioemotional difficulties in the abnormal/borderline range. Almost two-thirds (60%) of the sample who completed
the TAS-20 met the criteria for having ‘alexithymia’ or ‘possible alexithymia’. This is significantly higher than what we would expect to find in the general adolescent population (Horton et al, 1992). In line with previous research (Snow et al, 2015), alexithymia was not distinctly associated with DLD and it manifested as a co-morbid condition. Revealing that difficulties with language and alexithymia cluster in young offenders is important when we consider that RJ concerns itself with verbal information pertaining to experiences and emotions (Snow & Sanger, 2011).

Epidemiological studies have shown gender differences in the types of difficulties experienced by adolescents. Females have been reported more likely to experience internalising problems whilst males are more likely to exhibit externalising disorders (Rescorla et al., 2007). Aside from emotional difficulties, in Study 3 I found no significant gender differences in the socioemotional profiles of male versus female young offenders. Caution is advised when interpreting these results due to the much smaller number of females, compared to males, in the study.

6.3 DLD definitional issues

The participants in studies 1 and 2 were from the MLS, a large-scale longitudinal research programme (Conti-Ramsden and Botting, 1999). They were recruited in childhood with a definitional criterion of expressive and/or receptive abilities 1.25 standard deviations below the mean in the context of adequate nonverbal IQ. Investigating outcomes in adulthood is important as it allows us to see the cognitive changes that occur within groups. The method, however, of distinguishing the DLD group in studies 3 and 4 warrants some clarification.

There has been considerable debate in recent years regarding definitional issues (Bishop et al, 2017). Indeed, the CATALISE project was recently undertaken in order to reach a consensus, not only on the label, but also definitions for young people with language difficulties (Bishop et al., 2017). Important considerations rose by the
CATALISE project include the role of nonverbal IQ and co-morbidity. There is now recognition that a young person need not demonstrate a large discrepancy between their nonverbal and verbal abilities for a diagnosis of DLD and a low level of nonverbal ability should ‘not preclude a diagnosis of DLD’ (Bishop et al., 2017;5). This is especially pertinent for the participants in study 3 and 4 who in their adolescence demonstrated previous unrecognised language difficulties. It is likely that the interactive nature of such difficulties would have had a cascading effect on other domains during development. The presence of language difficulties may provide a bottleneck for development in other areas namely nonverbal IQ. Previous studies have shown that nonverbal abilities in young people with DLD decline in adolescence (Botting, 2005).

When discussing the language difficulties seen in young offenders it is not appropriate to view these as ‘specific’ (Snow & Powell, 2005). The interactions between language, disadvantage (Clegg & Ginsborg, 2005), social cognition and nonverbal IQ (Botting, 2005; Leonard, 2014) during development in both mainstream and youth justice populations affect the profile of adolescents. With these considerations in mind, participants in studies 3 and 4 were delineated as DLD if they obtained a score <1.5 SDs below the mean on the expressive and/or receptive language measure, irrespective of their nonverbal IQ. An additional consideration was that this would be reflective of young people found in the YJS and, therefore, increases the validity and generalisability of the research. A caveat of this is that there is a possibility a small proportion of the participants may fit the profile of learning disability as opposed to DLD. No participant, however, had a recognised diagnosis of learning disabilities and the group nonverbal IQ mean was in excess of the language measures in the DLD group.
6.4 Evaluations of measures used in studies 3 and 4

The assessments were selected to take into consideration the speed of delivery, the greatest impact on the young person’s ability to effectively engage in reparation and tasks which engaged the young person and treated them with respect without patronising them. Previous research, with incarcerated populations, noted many young people found the Test for Reception of Grammar (TROG; Bishop, 2003) demeaning (Bryan, 2007), therefore formulating sentences and understanding spoken paragraphs subtests from the CELF-4 (Semel et al. 2006) were chosen. The CELF-4 (Semel et al. 2006) has previously been used with young offenders (Bryan et al., 2015). In the understanding spoken paragraphs subtest, three short paragraphs are read to the young person. Following each they are asked five questions regarding the content. Three questions require the young person to synthesise and recall facts, one requires an inference to be made and the last requires a sensible prediction. The order of the questions varies after each paragraph. This mirrors what is expected of a young person in a forensic setting and was therefore seen to be a good window to the young person’s ability. This measure does, however, present additional attentional and memory demands and this could have been a factor in explaining some of the below average scores. This limitation could have been controlled by selecting the word classes subtest of the CELF-4 (Semel et al. 2006). This subtest requires the young person to select two words that are related, from a choice of four, that are read aloud. Repetition of the words is allowed and therefore memory is less implicated in this subtest. This subtest has also been shown to have high sensitivity with the youth offending population (Bryan et al., 2015). However, due to the expectation that the sample would consist mainly of young people from areas of low SES, this subtest may be vulnerable to assessment bias. Vocabulary assessment is open to bias due to the reliance on experiences and exposure and understanding of school curricula (Spencer et al, 2012; Stockman, 2000). Children living in poverty are more likely to experience language of limited complexity and diversity than peers from working class or more affluent
backgrounds (Hart & Risley, 1995) both in the home and school environment (Neuman, Kaefer & Pinkham, 2018). The understanding spoken paragraph was also preferred by YOT managers as they thought it reflected the requirements of a young person when engaging with the YJS.

When assessing a young person’s expressive abilities measures can assess at the word, sentence or above sentence level. As adolescents were the focus of this study it was decided that expressive measure would consider both sentence level (formulating sentences) and above sentence level (narrative). Due to time constraints I have been unable to recruit a control group, so the narrative data has not been analysed for this thesis. A control group was not deemed necessary as the CELF-4 (Semel et al. 2006) is a standardised measure, however this is not without limitations. Young people could have performed poorly due to unfamiliarity with testing procedures.

The sight word efficiency subtest of the TOWRE-2 (Torgeson et al., 1999) measures the number of sight words read correctly in 45 seconds. Similarly, in the phonemic decoding efficiency subtest participants are required to read as many pseudo words, which range in difficulty, within 45 seconds. This assessment was deemed acceptable by the young people and therefore refusal was low. This was not the case for the reading comprehension assessment and the scores could have been affected by the participant’s ability and willingness to engage with such a lengthy assessment. The York assessment of reading comprehension (Snowling, 2009) may be more acceptable to this population because participants need only read two passages.

This battery of tests allowed for a detailed assessment of the young person’s abilities, in multiple domains, with reference to the expectations of a forensic setting. Due to the hard to reach nature of the study population certain considerations had to be prioritised, when selecting the assessment battery. To be accepted by gatekeepers, the assessments needed to be expeditious with good face validity. Assessment burden was a main consideration as previous studies, with multiple measures, have reported
high refusal rates (Bryan et al, 2015). Also, in terms of assessment, time spent with the
YOT staff had attempted to go beyond the rapport building phase in order to build a
shared vision as this is seen as a prerequisite for successful collaboration (Foster &
Bailey, 2010).

Although the published questionnaires used are self-completion questionnaires, it was
expected that relying on this method would result in an incomplete data set. Previous
research with vulnerable groups such as young offenders has highlighted the need for
researcher assistance (Pamment, 2016). Test items were, therefore, read aloud to
participants due to low literacy levels. It is acknowledged this could have placed
pressure on auditory processing skills. In an effort to reduce those demands the items
were repeated, sometimes multiple times to try and reduce any threats to validity.
The composite adversity score was devised from data extracted from youth justice
service files. The participants in studies 3 and 4 were from multiple sites so only
variables that all sites collected could be included. The derivation of binary variables
allowed for a number of psychosocial adversities to be included and they were all
considered equal. Future research could consider weighting variables allowing a higher
score for those variables deemed to have a strong association with crime.

6.5 Methodological challenges of working with a hard-to-reach population

Research with a hard-to-reach population is challenging and a number of
methodological issues merit discussion.

Preventing recidivism, within the field of youth justice, is complex and characterised by
disparate approaches to not only its definition but also its measurement. For the
purpose of this thesis recidivism was defined as any new conviction following the
commencement of the young person’s current order. This was chosen in an attempt to
eliminate the effects of initial arrest, and/or subsequent court appearance, on study
results. This presented methodological challenges for two reasons. First, because
there were sometimes substantial delays following arrest to assignment of order, some
first-time entrants had re-offended and therefore could not be classified as a first-time offender. Nonetheless we found that just over two-thirds of participants entered the study with no previously detected offending, although this figure would have been higher if not for this methodological challenge. Second, these delays meant that, in the context of a time-limited study, the full 52 weeks following assignment to order could not be given. This was less of a problem, however, due to the statistical analysis chosen.

Considering rates of recidivism in isolation as a binary measure can lead to a loss of information. Prevalence estimation, in which a post-intervention conviction qualifies as a recidivistic event, yields much needed information regarding the number of recidivists (Hayes & Daly, 2004). On the other hand, incidence estimation, including a count of all post-intervention crimes, provides information about the number of crimes in society (Luke & Lind, 2002). Researchers are often limited by the data available and my Study 4 is no exception. The triage centre did not routinely have access to data pertaining to all further offences, and therefore incidence estimation could not be performed.

6.5.1 Working with gatekeepers

Work with young offenders is largely dependent on gate-keeper mediated access. Research is conducted in institutions and is therefore dependent upon the altruism of practitioners. This section considers the intricacies, and the progress made, when working in collaboration with partner agencies. It explores the complexities of recruiting hard-to-reach participants within the context of a multi-level gatekeeping organisation.

Gatekeeping refers to the process by which researchers gain access to, not only research participants, but also the research setting. The challenges that researchers encounter, and the processes that potentially disrupt engagement with gatekeepers, have received little attention in the literature. This is surprising as gatekeepers hold a critically influential position within research, possessing the ability to either facilitate or
prevent access to participants (Emmel, Hughes, Greenhalgh & Sales, 2007). Their cooperation and engagement are therefore pivotal to the development of evidence-based practice. A possible explanation for this dearth of research is that each study faces unique challenges.

Substantial time and effort was therefore afforded to discussions with YOT managers to explain the concept of DLD and its importance within a youth justice framework. Following these discussions four YOTs and the triage centre covering Lancashire agreed to be involved in the research and gave permission to work with gatekeepers at research sites to collect data. This was a substantial step as not all location gatekeepers agree to research requests and, in challenging times for public services, their agenda may clash with that of researchers. This can result in access at this stage being declined for many valid reasons. The YJS is a highly confidential, sensitive environment, which can lead to reluctance to exposure from outside agencies. However, even once this metaphorical gate has opened and approval is granted from management, it does not guarantee success, as other levels potentially may identify barriers to the research being undertaken (Wanat, 2008). Multiple levels of gatekeeping can exist in large public-sector organisations, including ‘location access gatekeepers’, ‘intermediate gatekeepers’ embedded within the organisation, and ‘field gatekeepers’ (front line YJS staff). This certainly presented many challenges and conundrums that, although not insurmountable, are time consuming and must be factored when working with hard-to-reach populations within large and complex organisations. Dealing with such large volumes of staff raised questions relating to the feasibility of their ability to be aware of non-obligatory procedures. Additionally, there was a danger when information was electronically sent to field gatekeepers that this could be forgotten, misunderstood, or simply overlooked during the process of a busy working day. All of these issues can lead to recruitment difficulties, but the biggest barrier is shared vision. There is little use in trying to conduct research without gaining buy in from field gatekeepers.
It was important to address all these factors that facilitate engagement. First, raising awareness was a critical factor of recruitment and had to be factored into the timeline. Training pertaining to awareness of DLD was offered to each participating organisation. The referral process was not complicated or time consuming so as to mitigate against non-engagement on a material level such as lack of time, resources or disruption to the professional’s working day. Following referral of a participant, the case-worker was provided with a report detailing the findings, recommendations on how to adapt interventions in light of the information known about the participant’s level of language functioning and details regarding onward referral, if this was deemed necessary. This information aided engagement and allowed for the research project to be perceived as sharing a common goal in helping the caseworker achieve their aims. The continued presence of the researcher one day per week in the organisation allowed for ad hoc modification of existing resources. Staff would often share session materials seeking advice regarding adapting them for the young person. It also allowed staff to meet with the researcher to ask advice or give feedback on specific participants.

It is highly unlikely that working within a single YOT would have enabled generation of the sample size required. Working across multiple sites involved increased effort as it entailed distinct internal IT procedures to be navigated as well as awareness raising across distinct YOTs. This was deemed essential as caseworkers who do not consider the research beneficial are unlikely to be proactive in seeking to recruit participants. A variety of methods were utilised to raise awareness. These included training sessions, attendance at team meetings and providing detailed feedback and recommendations to practitioners regarding referred participants. Working within each YOT was crucial as it fostered a more enabling environment for devising timely solutions to problems as they arose, such as staff changes and access to data. This created a notion of teamwork, so the project could maximise the chance of success; this had no endpoint but was a continuous process.
6.6 Limitations

Although my research has made a valid contribution to the area of forensic speech and language therapy there are some limitations and challenges with the studies that I conducted, and these require careful consideration.

All research concerning young offenders is challenging and has methodological limitations; therefore, the data clearly requires careful interpretation given the methodological and analytical challenges of researching such a hard-to-reach population. Many studies are confounded by sample bias and the research that is reported in this thesis is no exception. With respect to the novel data that I collected, participation was voluntary, which limits the extent to which the findings can be applied to the wider youth offending population. Young people who opted to participate may have had, or perceived that they had, sufficient skills to engage with my study.

Research concerning DLD in young offenders and reoffending cannot fully eliminate the problem of self-selection bias. Despite this limitation, however, a large proportion of the young people sampled returned scores on standardised tests indicative of DLD with the majority attaining scores 2 SDs below the mean. Additionally, dichotomising the group this way may have masked broader difficulties or neglected those with subclinical level of need.

There are documented limitations pertaining to reconviction data, most notably in relation to detection rates. It is hypothesised that approximately half of criminal offences are reported to the police and of those just over one in four results in a conviction (Bateman, 2006; Ogunbor & Robb, 2009). There is a possibility that, due to the increased vulnerability for young people with DLD, or the inability to talk themselves out of situations, they are more easily apprehended then their non-DLD offending peers. Reoffending risk depends on a variety of factors and there is the possibility that the elevated likelihood of reoffending observed in the DLD group may have been an artefact of other variables.
A limitation in this study was the uneven number of males versus females. This numerical gender imbalance, however, simply reflects the national picture as only 20% of young people in the YJS on community orders are female (JYB, 2018).

Whilst we can speculate about the reasons for youth offending, it is difficult to disentangle the multiple factors that affect the actions people take. Identifying an individual cause for recidivism in young offenders is unlikely and there are factors that I could not take account of in my studies. Maltreatment during childhood has been found to increase the risk of later criminality by 50% (Caspi et al, 2002) and, therefore, the most notable variable absent from my research was the relationship between Adverse Childhood Experiences (ACEs) and offending. ACEs relate to ten experiences of emotional, physical, and/or sexual abuse, emotional and/or physical neglect, domestic violence, household substance abuse, household mental illness, parental divorce and a household member with a history of incarceration (Bellis et al., 2015). Previous research has demonstrated a relationship between ACE scores and offending with the higher the score the more likelihood of arrest (Baglivio, Wolff, Piquero, & Epps, 2015). Additionally, a higher number of ACEs has been shown to be predictive of more chronic styles of offending (Baglivio et al., 2015). Although the composite adversity score included some of these factors, including parental divorce, household substance abuse and a household member with a history of incarceration, it did not comprise of a full ACE score. Organisational record-keeping practices dictated the available variables to derive the adversity score. Furthermore, the majority of participants were first-time entrants and may not have divulged such information immediately.

6.7 Directions for future research

There are several directions in which the research that I conducted could be developed in the future. First, the language measures utilised in the novel data that I collected were restricted to the structural aspects of language. There are other aspects of language that develop during adolescence pertaining to verbal reasoning, social
interactions and higher order language. Cohen and colleagues (2013) found that over half of the young people referred to adolescent and mental health clinics, who participated in their study, presented with higher order language difficulties as measured by the TOAL (Cohen, Farnia, & Im-Bolter, 2013). Future studies could include this measure. Additionally, language assessment in adolescence can be complex. Not only can standardised assessments lack sensitivity for adolescents (Stothard, Snowling, Bishop, Chishase, & Kaplan, 1998) they also concentrate on isolated linguistic skills as opposed to functional skills. Therefore, they reveal little relating to the use of language in everyday communication. Indeed, a small proportion of the participants who did not meet the definition of DLD in Study 4 presented with social communication and/or pragmatic language difficulties. These participants displayed marked difficulties with topic maintenance, understanding the listener’s perspective and verbosity, so much so that they were referred to their local speech and language therapy service provision. Furthermore, some participants displayed repetitive behaviours in addition to these social difficulties and were also referred to appropriate local services. The work concentrating on language that I have reported in this thesis could be complemented by further research exploring the prevalence of pragmatic language difficulties. These young people are often neglected in the published literature and, in my research; these offenders often had high (more serious) first index offences. The ability of first-time offenders to verbally communicate a narrative, which mirrors what is expected of young people in the youth justice service, would also be beneficial. Indeed, this was a further aim of my research and narrative data were also collected from the participants. However, time constraints did not allow for the recruitment of a control group in this regard.

There is also a place for further socioemotional profiling of young offenders, particularly in relation to examining links between callous unemotional traits and DLD. Adolescents with increased levels of CU traits display a tendency to support atypical methods of reaching internal goals in social situations. Utilising hypothetical vignettes, Pardini
(2011), reported that youths with CU traits were concerned with revenge and dominance following minor conflict. Additionally, the author reported incarcerated youths with CU traits were able to acknowledge that the consequences of their actions would cause suffering. The author concluded that a lack of consequential understanding was not responsible for the results, rather it was that the youths simply did not care about the victim’s suffering (Pardini, 2011). Thus, far it is unknown if this association remained after controlling for language abilities as studies have not employed language measures. One notable exception to this is the study of Fontaine and colleagues (2011), who considered the longitudinal associations between CU and CP. The authors utilised data from the Twins Early Development Study (TEDS), which subsumed a measure of expressive vocabulary and grammatical complexity within a cognitive composite, to examine predictors at 4 years and outcomes at 12 years. Trajectory groups were delineated consisting of high CU and high CP through to Low CU and Low CP. The reported findings suggested that children in the high traits group had more negative child and family predictors. Low verbal ability was statistically significant when considering group membership in the high traits group versus the low traits group and the group with increasing CU traits and high CP versus the low rates group. However, hyperactivity, low prosocial behaviours and chaos in the home provided the highest predictive ability (Fontaine, McCroy, Boivin, Moffitt, & Viding, 2011). Presently there is a dearth of published evidence pertaining to CU traits and the association with DLD.

I collected limited information regarding the crimes pertaining to interpersonal violence, so it was not possible to ascertain associations between having a DLD and the distinct forms of conduct disorder. In particular I was unable to establish if the crimes involving aggression were reactive or proactive. Reactive aggression typically occurs in response to provocation whereas proactive aggression is goal directed, planned behaviour often instigated for rewards (Raine et al, 2006). Future research should examine this distinction so as to inform preventive interventions. This would be
beneficial at the triage level as this involves limited contact with first-time entrants to the YJS, therefore, intervention should be tailored.

More ambitiously there is a need to develop a model of service delivery that acknowledges the greatly raised prevalence of DLD in young offenders. The findings that I have reported in this thesis relating to young first-time offenders prompt questions pertaining to intervention aimed at supporting them through the youth justice process. Previous research, detailed in the Introduction to this thesis, has been successful in highlighting awareness of the language needs of this vulnerable population. This recognition has led to some YOTs in England and Wales securing the employment of speech and language therapists (Royal College of Speech and Language Therapists, 2013). Current provision, however, could best be described as patchy, and a recent online survey designed by the University of Sheffield and Birmingham City University, in collaboration with The Communication Trust, found that only 29% of YJS settings employed a speech and language therapist. Although some respondents reported access to speech and language therapists not directly employed by the service, 29% had no access to support the language needs of their caseload (The Communication Trust, Clegg, Hopkins & Turner, 2015). The survey achieved a 41% response rate; therefore, these figures may not be reflective of all settings. This is disappointing when we consider that the two studies conducted to date to have considered intervention for young offenders with communication difficulties have reported promising early findings (Gregory & Bryan, 2011; Snow & Woodward, 2017). These studies, in line with other previous research that has reported prevalence estimates, focussed on either incarcerated participants (Snow & Woodward, 2017) or those on ISSPs, a court order reserved for prolific offenders (Gregory & Bryan, 2011). One of the key findings of my Study 4 was that 50% of first time entrants have DLD, and these young offenders are almost 2.5 times more likely to reoffend. Future research could therefore concentrate on the efficacy and clinical effectiveness of speech and language interventions with this population. Snow and colleagues have proposed a theoretical model (Snow et al,
2015) to guide assessment and intervention for young people in the YJS. Presently this has yet to be empirically evaluated and the results that I observed in my Study 4 suggest that first time entrants to the YJS would benefit from targeted intervention in an attempt to reduce reoffending risk. Desistence could be assessed to discern whether or not behavioural interventions that are adapted for young people with DLD have a beneficial impact by reducing the likelihood of reoffending. However, it is recognised that reconviction alone is a relatively blunt instrument for which to measure effectiveness. Thus, qualitative work with youth justice staff would also provide more nuanced information when evaluating the effectiveness of interventions.

6.8 Clinical Implications and concluding remarks

In this thesis I have explored numerous lines of inquiry in relation to both the criminology and DLD literature. In doing so a number of suggestions are outlined to potentially improve services and reduce the over-representation of young people with unidentified DLD in the YJS.

The results reported in study 3 highlight a high prevalence of previously undetected DLD in first-time offenders. Interventions, however, within the youth justice service rely heavily on the medium of language (Snow & Powell, 2012) and weak language skills may preclude young people from deriving the full benefit of the rehabilitation on offer. These concerns have previously been highlighted (Bryan et al., 2015) and a report to the Children’s Commissioner detailed the impact that communication difficulties has on a young person’s ability to access and profit from interventions designed to prevent them from re-offending (Hughes et al., 2012). Recent proposals advocate for the youth justice to take into account ‘developmental stressors’ when considering a youth justice framework and targeting resources (Case & Haines, 2015).

A variety of methods have been used to address the issue of youth offending. These have included punitive measures, such as incarceration and rehabilitative approaches
that emphasise the provision of treatment interventions designed to address the criminogenic needs of young persons. In England & Wales, the rehabilitative approach is favoured, and diversion programmes are also in operation. Pre-charge diversion is reserved for lower-risk youth, who score at level 1 and 2 on the gravity score matrix. In this process, following initial contact with the police, the young person is diverted from the formal youth justice service with no further processing or police involvement. Some YOTs provide this service whereas others provide diversion programmes through a contracted external agency. Whilst diversion programmes show variability in format, their purpose is to reduce the youth’s involvement in the police and justice systems. The Crime and Disorder Act 1998 and the Youth Justice and Criminal Evidence Act 1999 espoused a government commitment to RJ processes as the key vehicle with which to pursue main outcome measures in the YJS. Strong support has developed for the efficacy of diversion (Wilson & Hoge, 2013) and RJ programmes. In most cases these led to lower levels of reoffending than traditional processing through the youth justice system (Latimer, Dowden, & Muise, 2005).

My research aimed to further develop these evaluations, by examining the apparent impact of RJ programmes on likelihood of recidivism in relation to language ability - an offender characteristic that to date has been largely neglected in the criminology literature. By addressing this research question, I have augmented the evidence-base by moving beyond the question of whether programmes that include RJ interventions reduce recidivism but helped address questions relating to divergent effectiveness. In particular, my research has acknowledged the inherent offender skills required and circumstances under which such a programme can be most effective.

The findings that I reported from my Study 4 indicate significantly higher rates of recidivism in the group of young people with unidentified DLD. This suggests they may not be able to derive the same benefit from interventions as the young people with language skills who did not fall in the clinical range. Current intervention strategies
utilised in the YJS would benefit from differentiation for young people with DLD. This may not occur, however, unless youths with DLD are appropriately assessed and identified. Congruent with the findings from Hughes and colleagues (2017), my findings illustrate a discrepancy in the number of individuals with language difficulties compared to those identified via the youth justice staff. This highlights a disadvantage of relying on objective measures or self-report when assessing language skills and indicates that the youth offending service may need to re-examine their approach to identifying young people with low level language abilities. There needs to be a process for early identification using appropriately designed, sensitive screening tools. Following this an efficient system is required to deliver support and guidance as a consequence of any identified need. Members of staff need to be able to accurately and efficiently identify and then practically support young offenders with DLD, they require adequate training so that they can feel confident in performing these tasks. Only then will they be able to recognise different behaviours, interpret these and ensure reasonable adjustments are made by adapting the environment and the intervention.

Reducing rates of recidivism is a key performance target for youth offending teams (Bateman, 2010), and to achieve this goal practitioners require an evidence-based framework that will enable them to match intervention to a perceived risk level. This model, known as the Risk, Needs and Responsivity’ (RNR) (Andrews & Bonta, 2003) has been shown to reduce reoffending (Koehler et al, 2013; McGuire, 2008). Risk assessment is therefore central to youth justice work and the identification and subsequent management of risk in young people seeks to establish aspects that predict later offending behaviours. ASSET-Plus is the RNR framework that is applied by all YOTs in England & Wales with young people aged 10-17 years who offend. It evaluates a range of potential risks, divided into static and dynamic factors. The static factors relate to a young person’s age and previous criminal history and cannot be changed. Conversely it is recognised that the dynamic factors, spread across twelve
domains, can alter over time (Wilson & Hinks, 2011). These dynamic factors, in their entirety, cover, living arrangements, family and personal relationships, education training and employment, neighbourhood, lifestyle, substance use, physical health, emotional and mental health, perception of others, thinking and behaviour, attitudes to offending and motivation to change. Presently language difficulties are considered in the ASSET-Plus by means of self-report. Young people are asked a series of closed questions pertaining to language difficulties including a) “Do you have difficulties finding the right words to say?” and b) “Do you understand what people say to you?” Researchers who have included self-assessment ratings have consistently found that young offenders underestimate (Bryan et al., 2007) or are unaware (Sanger, Hux & Ritzman, 1999) of their own difficulties. Although self-assessment detail is clinically useful for providing insight regarding levels of awareness and willingness to engage in language learning opportunities, language assessment is required to enable difficulties to be accurately established (Bryan et al., 2007).

When attempting to predict the likelihood of future offending to identify those at greatest need of intervention, the language status of some young persons may be inadvertently overlooked. This could be due to staff unknowingly shifting their perceptions of typical language in the face of such a high prevalence of DLD. In the model that I developed and applied, even having adjusted for potential confounders, the DLD status of the individual held the greatest predictive power. This may be due to the responsivity element of the RNR model. Nonetheless, my results indicate that risk assessments should give increased priority to language difficulties. The results that I found, however, do not demonstrate that DLD causes initial offending or subsequent recidivism, although the observed association was strong and independent of other determinants of risk.

Given the findings that I have reported in this thesis, there is a need to intervene to address modifiable risk factors for offending, and a shift in policy to reflect the growing
Concern of the language needs of this population is indicated. The depth and breadth of knowledge, both theoretical and clinical, that the speech and language therapy profession has made their own is often poorly understood by others. There is possibly insufficient overlap in knowledge bases shared by youth justice workers and speech and language therapists, which necessitates an enhanced interface between the two professions. The impact of language difficulties on a young person’s behavioural functioning illustrates a need to correlate language services with behavioural therapies (Gallagher, 1999). This provides an opportunity to inaugurate links between the two professions, at the teaching and the practical level. Universities could provide opportunities for shared teaching in the education of criminology and speech and language therapists. At the practice level Snow and colleagues (2015) have advocated for a ‘unifying diagnostic and intervention framework’ (Snow et al, 2015;2) in response to the high prevalence of unidentified DLD in the YJS. Following McDaniel and colleagues’ (2011) proposal to implement Response to Intervention (RTI) in juvenile justice schools, Snow and colleagues recommend that this intervention can be adapted for the youth justice service. RTI is an evidence-based approach (Justice, 2006) aimed at preventing difficulties in education through the mechanism of high quality intervention at three tiers of intervention (Snow et al., 2015). There is an inverse relationship between intensity and number of students at each tier allowing for scarce resources to be utilised optimally. Tier 1 usually involves universal strategies that all young people can benefit from such as the adaptation of justice documentations, so they are accessible to all, while tier 2 advocates small group instruction for the young people who fail to thrive from the universal support. Tier 3 denotes the most intensive support and entails specialist individualised intervention. The limited success of current screening used for language as young people enter the YJS (Hughes et al, 2017) suggest value in applying a systematic framework and the findings that I have reported in this thesis support this notion.
Young people in the YJS have complex needs that have tended to go unrecognised thus raising the question of how appropriate the services are in the context of their language limitations. There appears to be a disparity between current knowledge concerning the language skills of young people in the youth justice system and the policy frameworks and service systems aimed at supporting them. Improving both the suitability of these interventions, and the identification of difficulties, carries the potential for delivering better outcomes among young people who have unidentified DLD.

An association between offending and unidentified language difficulties is now beyond dispute. My research has made a novel and important contribution to the existing evidence-base by profiling the psycholinguistic and socioemotional characteristics of young offenders, in subgroups that have thus far been overlooked - namely females and first-time entrants to the YJS. My work has extended existing knowledge by considering the risk of reoffending for young offenders with unidentified DLD and the severity of crimes committed among young persons with and without a DLD. In the light of these new findings, some policy recommendations can be proposed with confidence:

1) Language assessments for new entrants to the YJS that move beyond self-report allowing for timely identification of DLD.

2) A model for youth justice services to work with in relation to the language deficits of the young people identified, and the importance of these difficulties within the RNR model of assessment.

3) Expanding the training of YJS staff to highlight the relationship between language and behaviour to thereby equip them with the skills required to effectively tailor intervention according to language need.

My research has produced informative new evidence that, without the explicit guidance of communications experts to assess, identify and differentiate interventions, the effectiveness of rehabilitation in this critical arena of youth offending, may be
compromised. Continued failure to identify, accommodate and make reasonable adjustments for young people with DLD in the YJS has potentially serious ramifications, and this deficit should be addressed as a strategic policy priority.
7. REFERENCES


Arnall, E., Archer, D., Eagle, S., Gammampila, A., Johnston, V., Miller, K. and Pitcher,


have communication disorders and why does it matter? *Advances in Speech Language Pathology, 7*, 8-13.


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Spencer, S., Clegg, J., & Stackhouse, J. (2012). Language and disadvantage: a comparison of the language abilities of adolescents from two different
socioeconomic areas. *International Journal of Language and Communication Disorders, 47*, 274-284.


8. Appendices

Appendix 1

Appendix 1 contains details of some of the additional work completed as part of the PhD: Dissemination, Awareness/Training Sessions, Assessments and Reports within the Youth Justice Service

Appendix 1a: Awareness raising training morning for Blackburn with Darwen Youth Offending Team

24th March 2016 – 9am – 12.45pm

Prior to the commencement of data collection an awareness raising session was provided for Blackburn with Darwen Youth Offending Team staff. The training consisted of a power point presentation that included characterising language in a modular way, for example phonology, syntax, semantics and pragmatics. The Bloom and Lahey model (1978) was used as a reference to aid thinking of language in this way (Figure 1).

Figure 1

Practical tasks such as sorting and ordering the elements of the communication chain, as found in the ‘Vulnerable Young Builders’ Elklan series (Elks & McLachlan, 2011) and classifying words pertinent to youth justice into three tiers (core, describing and specialist words) were included to aid engagement. The presentation further provided
information regarding the importance of language in everyday life and its role in mediating behaviour.

A further aim of the raising awareness training session for the criminal justice case managers was aimed at supporting them to complete the mandatory speech, language and communication screening tool used in youth justice settings. This tool is called asset plus and it is an assessment and planning interventions framework, developed by the Youth Justice Board. It is a mandatory assessment procedure and is utilised in all youth justice settings.
Appendix 1b: Oral presentation and poster presentation at the Child Action North West Conference - ‘Showcase Youth Justice Triage Service’

4th August 2016 – 12.30pm – 5pm

The conference was designed to promote the work of the triage service to local commissioners. This event was attended by the Police Crime Commissioner, local Youth Offending Team Managers and dignitaries such as the Mayor of Wyre, Councillor Terry Lees. The aims of the event included a) exhibiting the work and achievements of Lancashire’s young people and their positive contribution whilst carrying out community reparation and b) highlighting the services and help on offer to young people who were first time offenders and entering the reparation process with Child Action North West.

The researcher’s role included delivering a 10-minute presentation at the beginning of the event to inform all attendees of her presence in the organisation. The presentation was purposefully designed to communicate the research aims, the methodology and to inform commissioners the benefits a speech and language assessment could offer both the young people and the organisation. For the duration of the event a stall and materials, including the assessments utilised in the study were provided. The researcher was always available at the stall to answer questions and highlight the language needs of this vulnerable population.

Additionally, a poster was designed and presented to demonstrate the timescale, methodology, aims and future impact of the study. This was on display throughout the event and the researcher was available to discuss this with interested parties.
Appendix 1c: Youth Justice Training Workshop – Blackpool Town Hall

Tuesday 11th October 2016 9am – 11am.

A training workshop was provided for all case managers working at Blackpool youth offending team. This was well attended with 20 staff from the service present. The workshop consisted of a 30-minute presentation aimed at increasing staff’s knowledge of the language difficulties, and their impact, in this challenging population. Group practical activities, that had proved successful with other youth offending teams, were included. Additionally, staff were given an opportunity to see the assessments utilised in the research and how they related to the domains of language under scrutiny.

The workshop had three main aims. First, for youth offending team staff to meet the principle researcher in a relaxed neutral environment. Second, to familiarise staff with the assessments utilised in the research and how the information provided could be translated to benefit their everyday working practices. Lastly to clearly communicate the methodology of the research to all staff so they were aware of how to refer young people to the study.
Appendix 1d: Assessment of young person at a Young Offenders Institution (YOI).

Wednesday 23rd November 2016.

The researcher was asked if she would administer an assessment for a young person who was due to leave custody and be placed in local authority care in the community. The manager saw this as a pathway to improve the services offered post release. The researcher travelled to the YOI with the case manager to carry out some informal and formal assessments. The report below was supplied to the case manager.

Name: XXXX  
Date of Assessment: 23/11/2016

Organisation: XXXXX  
Date of Report: 24/11/2016

XXXX completed three subtests of the Clinical Evaluation of Language Fundamentals, 4th Edition (CELF-4). This language assessment is standardised to an age appropriate population and is suitable for young people aged 5 – 16.11 years. Although XXXX is slightly older than the standardised age this test was deemed suitable. It is important to note, the CELF-4 consists of 17 subtests, and five of these are mandatory to gain a core language score for the young person. This, therefore, has not been possible in this session. However, an expressive test and two receptive tests have been conducted and the results are below.

This report is based on a limited amount of time spent with XXXX in an assessment situation. The conclusions and recommendations should, therefore, be considered alongside other observations of XXXX’s speech, language and communication skills in a range of settings. Results will either be given as standard scores, scaled scores and/or percentiles. Percentile ranks indicate a student’s standing relative to others of the same age in the norm group. A young person who achieves a percentile rank of 25 performs as high as 25% of students in his age category conversely it indicates that 75% of students score above him.

<table>
<thead>
<tr>
<th>Score</th>
<th>Average range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Score</td>
<td>85 - 115</td>
</tr>
<tr>
<td>Scaled Score</td>
<td>7 to 13</td>
</tr>
<tr>
<td>Percentile</td>
<td>16th to 84th</td>
</tr>
</tbody>
</table>

Results

**Formal assessment- Expressive Language**

‘Formulating Sentences’ - This subtest requires the young person to formulate a sentence, including a given word, based on a picture shown. It measures a person’s ability to articulate sentences of increasing length and complexity in a coherent logical order, illustrating sentence structure and vocabulary use.

Despite concentration and effort, this task proved to be an area of difficulty for XXXX. He struggled to organise his thoughts and construct grammatically correct and meaningful spoken sentences that included the given word. His sentences were often characterised with false starts and he demonstrated some difficulty ordering clauses. Complex sentences requiring subordinate conjunctions that link clauses, were a
particular source of difficulty for him. His errors consisted of verb tense errors, for example “they was doing shopping”, omission of mandatory sentence elements, for example, “the two lads, ones got a skateboard, ones got a bike, although” and omission of copula verbs.

These results suggest that XXXX may require extra time to process and formulate what he needs to say. He achieved a scaled score of 6, which is on the 9th percentile. This is just below the low average range of ability.

**Formal assessment – Receptive Language**

‘Understanding Spoken Paragraphs’ – This subtest evaluates the examinee’s ability to a) sustain focus and attention while listening to spoken paragraphs of increasing length and complexity, b) understand oral narrative, c) answer questions about the content of the information and d) think critically to arrive at logical answers.

XXXX was able to understand the main idea of two, from the three paragraphs, however, he was unable to remember key specific details form the verbally delivered material. He was also unable to make inferences and he often struggled to generate a prediction relating to the paragraph.

XXXX achieved a scaled score of 2, which is on the 0.4th percentile. Individuals who score in the low range such as XXXX, may encounter difficulty recalling information (facts and details) and using the information presented orally to identify cause-effect relations and make predictions. The difficulties may stem from problems in recall of meaningful predictable elements, understanding sentences of increasing length and syntactic complexity, and perceiving and interpreting the meaning relationships expressed by individual words and word combinations.

XXXX may experience difficulties with understanding stories, describing events, actions or opinions and applying critical thinking.

‘Semantic Relationships’ – This subtest evaluates the young person’s ability to interpret sentences that a) make comparisons, b) identify location or direction, c) specify time relationships, d) include serial order, or e) are expressed in passive voice.

XXXX obtained a scaled score of 4, which is on the 2nd percentile. XXXX’s errors consisted of understanding passive, temporal and sequential relationships. For example, he made errors when the instructions required him to understand sequential relationships such as after and before.

**Narrative Assessment**

This is not a standardised test and therefore no scaled score is available.

XXXX was given a 6-frame cartoon stimulus designed to elicit a narrative. Narratives are a relatively quick method which facilitates investigation of a young person’s global structure (the ability to structure the story in a logical coherent manner), local structure (cohesion, syntactic complexity) and ability to evaluate and draw conclusions from the story rather than merely listing events.

He demonstrated great difficulty with this and initially remarked “I can’t do that, it’s too hard”. He did eventually manage to say a couple of sentences about the main character but did not make any reference to the plot of the story. This is to be expected from the low scores obtained by XXXX on the standardised tests. It is likely that XXXX had difficulty integrating the sequentially presented information. He was unable to
structure the story in a logical coherent manner or offer any cohesive elements. A naïve listener would have been unable to understand what had happened and why.

These scores indicate that XXXX has a greater deficit in receptive language skills than expressive skills therefore care must be taken to monitor his compression. This can be achieved by asking XXXX to repeat back in his own words the information that has been conveyed.

**Recommendations**

Although XXXX only completed three subtests of the CELF-4 these indicate that language is an area of great difficulty for him.

- He will require instructions to be presented visually, paragraphs to be broken down into sentences with a question following each sentence to show he is listening and retaining the information.
- XXXX will benefit from extra time to process information and a check of his comprehension is advised. This could be achieved by asking him to repeat back in his own words the instructions.
- Ensure XXXX has the opportunity to discuss and learn specific key vocabulary in a structured way. It may take XXXX longer to learn vocabulary and structured teaching will allow him to learn key words in order to fully understand and comply with any orders imposed. For example, he may not understand words such as ‘exclusion zone’, ‘statutory’, and ‘mandatory’.
- Support when seeing the ‘bigger picture’, inferencing difficulties could impact on his ability to understand how behaviour affects others.
- Key information should be repeated multiple times for XXXX.
- XXXX would benefit from tasks to improve his working memory for spoken information. Exercises in sequencing and manipulating in short term memory spoken information.
- Help him to provide verbal information, retain information and retrieve information. For example, using narrative symbols for “who”, “when” etc. in retelling an event. Mind maps to support XXXX’s memory for information.

If you have any questions about this report, please do not hesitate to contact me.

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Speech and Language Therapist
Appendix 1e: Practitioner Forum Presentation to the Oldham Youth Offending Services

Wednesday 18th January 2017

Following a series of meetings and discussions with case managers at Oldham Youth Offending service, this organisation agreed to become part of the study.

Prior to data collection the senior management requested the researcher present at the practitioner forum. The intention was for case managers to understand the methodology of the study, the requirements asked of them and the benefits for staff and the organisation. Staff were therefore also presented with referral forms (appendix 2) and letters (appendix 3) to be administered to the young people.

The presentation was also an opportunity for the researcher, as had occurred in other youth justice settings, to explore the staff’s current perceptions of the role of a speech and language therapist and to broaden their understanding.

Practitioner Forum Presentation to St Helens Youth Offending Team

Tuesday 31st January 2017

Meetings with senior management at St Helens Youth Offending Team meant they too agreed to be involved in the study. Therefore, the same presentation as above was delivered to all case managers.
Appendix 1f: Presentations given to the Youth Justice Partnership Board and Commissioning Bodies and magistrates training.

19th September 2017

A presentation was delivered at the Youth Justice Partnership Board. This is an annual meeting attended by the Youth Justice Board, the Head of Children’s Services and other clinical commissioning bodies. The aim of the meeting was twofold. Firstly, Youth Offending Team managers are held accountable for the services delivered to young people in the previous year, and secondly discussions take place regarding priorities and the delivery of services for the following year. The researcher was requested to present the research and the work carried out in the youth justice setting.

A further request from management was for the researcher to provide an advocacy role by highlighting the long-term impact of living with language disorder and the benefit to the management of young people speech and language therapy can provide. This was achieved by delivering a power point presentation summarising the research pertaining to the long-term outcomes of individuals with developmental language disorder and the current research that exists regarding intervention with this population.

13th March 2018

A training session was delivered to magistrates. A workshop format was delivered including the topics a) What is oral language? b) What is Developmental Language Disorder? c) Why it is important in the YJS? d) Language disorder and outcomes.
Appendix 1g: Information provided for the Youth Justice Board Meeting

The Youth Offending Team manager at St Helens asked the researcher to provide a bespoke short report to hand to attendees at a Youth Justice Board Meeting. Following discussion of the recently published work from the Royal College of Speech and Language Therapists, entitled Justice Evidence Base Consolidation 2017, in a supervision meeting, the Manager asked for a condensed version to also include information about the benefits of assessments and intervention. This is included below:

Developmental Language Disorder & The Youth Justice System.

The information in this document was adopted from the Summary of The Royal College of Speech and Language Therapists Justice Evidence Base Consolidation: 2017 at the request of Cath Cheshire, Manager of St Helens Youth Offending Team. It also includes information from the wider evidence base and my own work.

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Speech Language and Communication Needs (SLCN)

This is an umbrella term and encompasses a wide range of difficulties related to all aspects of communication in young people. SLCN can include difficulties all aspects of communication from forming sounds and words (Speech Sound disorder), understanding what others (Developmental Language Disorder) and using language socially (Social Communication Disorder) (Bercow, 2008).

Developmental Language Disorder (DLD) an invisible disorder

Around 7.58%, or two children in every classroom have a Developmental Language Disorder. This affects the way they understand and express language.

The current estimated prevalence of DLD, in the UK, is 7% (Tomblin, Records & Zhang, 1996). DLD is a persistent, pervasive, invisible disorder with not only immediate consequences but also long-term ramifications in an individual's life. It is now well established that young people with DLD are at increased risk of experiencing literacy problems and social, emotional and behavioural difficulties (SEBD) (Durkin & Conti-Ramsden, 2010; Beitchman et al, 1996). There is now substantial literature demonstrating that a disproportionate number of young people who come into contact with youth justice services (YJS) have DLD (Bryan, 2004; Snow & Powell, 2008; Bryan et al, 2007; Games et al, 2012).

Unknown & Undiagnosed

Unfortunately, this DLD has gone undiagnosed so case workers are frequently unaware of their nature and implications. This is because adolescents with DLD are less easy to identify, often relying on facilitative strategies to mask their difficulties (Durkin & Conti-Ramsden, 2010). These strategies include a reliance on script knowledge (Snow & Powell, 2008) and maintaining topics of interest (Nippold, 2007). Thus, adolescents with DLD, despite precarious language skills, are able to manage functional, familiar everyday interactions without detection of their difficulties (Durkin & Conti-Ramsden, 2010). This ability to 'get by' in familiar environments is lost, however, when any pressure is added.

Implications of DLD on young people in the Youth Justice Service (YJS)

Youths who find themselves in contact with the youth justice system, whether as a victim or an offender, face many linguistic challenges. These include, a) keeping up with new terminology, such as 'remorse', 'breach', 'statutory' and 'conditional', b) providing a coherent narrative of events and c) involvement in verbally mediated interventions such as restorative justice, weapons awareness and substance misuse.

To access the YJS a young person needs to be able to listen, understand and process conversation as well as formulate ideas and experiences into words (Humber & Snow, 2001). Thus, DLD impacts on a person’s ability to fully participate in the YJS. It also means the programmes are less likely to be successful.

The effect of SLCN on a person accessing the YJS has been visually represented by Professor Karen Bryan in a compounding risk model (Bryan et al, 2015).
The implications of SLCN in young people known to the YJS are references in the Youth Justice Board Full Joint Inspection Criteria (2012). It states under point 4.2.1 that “Action is taken to understand and address barriers to compliance”. SLCN can be a barrier to conformity and addressing this may contribute towards supporting engagement.

The Importance of Speech and Language Therapy Assessments and Intervention

Research shows that speech and language therapists’ input can directly improve a young person’s speech, language and communication skills. A study completed in the Leeds Youth Offender Service found that 75% of the young people completing a speech and language therapy intervention programme had made a significant improvement in every communication area targeted.

Speech and language therapy provision can be provided via direct or indirect interventions. Direct speech and language therapist intervention involves providing direct support by working one to one or in a small group. Examples of direct speech and language therapy interventions include – narrative skills, vocabulary skills, time concepts, use of strategies, social communication skills. Indirect intervention can include, making written information accessible, working through others and staff training.

Professor Pamela Snow has proposed a potential framework by which young people entering the youth justice service can be screened for DLD and then have such difficulties addressed via increasing specialised services (Diagram below taken from Snow et al, 2015).

Tier 1 involves providing a full speech and language therapy assessment for all those at risk and all those with known neuro disability. The identification of previously unrecognised DLD can help those seeking to engage the young person in therapeutic interventions.

Tier 2 includes targeting groups of learners that need scaffolding in small-group learning interventions.
Tier 3 involves individualised SLT intervention for the most severe – i.e. direct instruction.

Further Information

Please see ‘The Special Educational Needs and Disability (SEND) Reforms and Speech, Language and Communication Needs (SLCN) in the Youth Justice Sector: Findings from a Survey of Youth Justice Services in England’. A recent piece of work that included in its aims to determine if service users in the YJS with SLCN are identified and how their needs are met.

For information on DLD please see [www.youtube.com/RADLD](http://www.youtube.com/RADLD) - A youtube channel designed to raise awareness of DLD.

If you have any questions about the content of this short report, please contact me (details on cover page).
Appendix 1h: Alterations to Youth Offending Forms

The researcher was requested to review some of the standard forms young people are asked to sign when entering the youth justice service. One example, the behaviour agreement, is illustrated below. Form 1 is the document used prior to the study, this was subsequently altered to Form 2, designed by the researcher.

Form 1

Blackburn with Darwen Youth Justice
Service Behaviour Agreement

Young Person’s Name: __________________________ Date of Birth: ________________

What’s expected of you:
During your involvement with the Youth Justice Service (YJS) we require you to behave reasonably towards the people who will be working with you.

You must;

➢ Arrive on time for all appointments with staff.
➢ Allow YJS staff to visit you at home.
➢ Notify us if you change address immediately.
➢ Comply with the requirements of any Order you are given by the Courts.
➢ Switch off mobile phones/iPods or similar during appointments.
➢ Let your case manager know beforehand if you are unable to attend an appointment. This must only be in exceptional situations eg. ill health.

You must not;

➢ Use racist, sexist or any form of abusive language or behaviour.
➢ Talk or act in an aggressive way towards staff or any member of the public at our offices or whilst you are undertaking a YJS activity.
➢ Behave in any way that may make it difficult for us to work with you.
➢ Attend appointments if drunk or under the influence of any substance such as cannabis, solvents or other drugs.
➢ Allow friends to attend appointments with you.

Failure to comply with any of the above requirements may result in YJS staff refusing to see you.
If you are subject to a Court Order or requirement it could result in you being returned to court.

**What you can expect from the Youth Justice Service:**

- We will treat you fairly and with respect. This includes allowing you to attend religious and other important events providing you let us know in plenty of time beforehand.
- We will see you regularly and give you plenty of notice of any changes to arranged appointments.
- We will explain things to you in a way that you can understand.
- We will allow you to have a say in the way that we work with you.
- If you are unhappy with the service that you receive, please discuss this with your YJS Officer.
Form 2

Blackburn with Darwen Youth Justice Service Behaviour Agreement

Young Person's Name:__________________ Date of Birth: ______________

Rules you must follow:
When at the Youth Justice Service (YJS) you must be well behaved at all times.

You must;

➢ Be on time for your appointment.
➢ Let YJS staff visit you at home.
➢ Tell the staff if you change address.
➢ Make sure you follow the rules in your order.
➢ Switch off mobile phones/iPods or similar during appointments.

It is important that you;

➢ Never miss a meeting with your case manager. If you are ill and cannot attend ring us on __________.
➢ Never use racist, sexist or any form of abusive language or behaviour.
➢ Never use threatening behaviour.
➢ Never talk in an aggressive way towards anybody.
➢ Never attend appointments if drunk or under the influence of any drugs.
➢ Never bring friends to an appointment.

You must follow these rules.

If you do not follow these rules you may have to go back to court.

What you can expect from the Youth Justice Service:

➢ We will treat you fairly and with respect. This includes allowing you to attend religious and other important events providing you let us know about them.
➢ We will see you regularly.
➢ We will tell you if there are any changes to your appointments.
➢ We will explain things to you in a way that you can understand.
➢ We will let you have a say in the way that we work with you.
➢ If you are unhappy with the service that you receive, please discuss this with your YJS Officer.
Appendix 1i – Regular Reporting at Youth Justice Service meetings.

Regular Team Meetings

After discussions with senior managers in each youth offending service it was decided that the researcher would regularly update the list of young people assessed and provide a report (Appendix J) for each young person. This report would then be placed in the young person’s file and caseworkers would be able to make onward referrals from the advice given. The researcher agreed to attend and when appropriate report at monthly meetings in each organisation and periodically provided feedback to staff about the study. These meetings also allowed the researcher to answer any staff queries or concerns. As the researcher was also based on site one day a week this also occurred informally as and when the need arose.

Supervision Meetings

Within the Youth Justice service supervision is perceived as a standard practice and all staff are required to attend supervision meetings. This was offered and accepted by the researcher and alternate monthly hour-long sessions were agreed. In the initial stages of the study this time was spent reviewing the project and recruitment. As the study progressed the focus of the meetings altered to emulate a more clinical standard supervision session where the researcher reflected on the client group, the young people seen and the new environment. Discussions also took place regarding young people who presented as complex and deserving of referral to other professionals, for example paediatricians, educational psychologists or clinical psychologists.
Appendix 1j – Two examples of the reports case workers received from the researcher.

Following referral of each young person to the study the case manager received a written report. Two examples are illustrated below:

Example 1

Name: XXXX XXXX Date of Assessment: 
Organisation: XXXXXXXXX Date of Report: 

XXXX completed two subtests of the Clinical Evaluation of Language Fundamentals, 4th Edition (CELF-4). This language assessment is standardised to an age appropriate population and is suitable for young people aged 5 – 16.11 years. It is important to note, the CELF-4 consists of 17 subtests, and five of these are mandatory to gain a core language score for the young person. This, therefore, has not been possible in this session. However, an expressive test and two receptive tests have been conducted and the results are below.

XXXX additionally completed the reading comprehension subtest of the Wechsler Individual Achievement Test, 2nd edition (WIAT-II). This includes stories and sentences assessing literal, inferential and lexical comprehension. The Test of Word Reading Efficiency–Second Edition (TOWRE–2) was also administered. This is a measure of an individual’s ability to pronounce printed words (Sight Word Efficiency) and phonemically regular non-words (Phonemic Decoding Efficiency) accurately and fluently.

XXXX also completed the Wechsler Abbreviated Scale of Intelligence (WASI). This test is standardised and provides a quick, reliable measure of intelligence. It consists of four subtests, two comprise of the verbal scale and their sum represent the Verbal IQ (VIQ) and two comprise of the performance scale and their sum represent the Performance IQ (PIQ). The PIQ is a reflection of a young person’s non-verbal intelligence, only this part of the test was administered. The block design and matrix reasoning subtests comprise the PIQ. This test requires the young person to copy abstract designs using coloured blocks. The scoring is objective and related to the time taken to complete the task. The Matrix reasoning subtest is a further objective test and the young person is presented, in turn, with 35 incomplete gridded patterns. The young person is provided to pick, from a choice of 5, the correct response for the last pattern in the grid. This test is untimed.

This report is based on a limited amount of time spent with XXXX in an assessment situation. The conclusions and recommendations should, therefore, be considered alongside other observations of XXXX’ speech, language and communication skills in a range of settings. Results will either be given as standard scores, scaled scores and/or percentiles. Percentile ranks indicate a student’s standing relative to others of the same age in the norm group. A young person who achieves a percentile rank of 25 performs as high as 25% of students in his age category conversely it indicates that 75% of students score above him.

<table>
<thead>
<tr>
<th>Score</th>
<th>Average range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Score</td>
<td>85 - 115</td>
</tr>
<tr>
<td>Scaled Score</td>
<td>7 to 13</td>
</tr>
<tr>
<td>Percentile</td>
<td>16th to 84th</td>
</tr>
</tbody>
</table>

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Results

Formal assessment- Expressive Language

‘Formulating Sentences’ (FS)- This subtest requires the young person to formulate a sentence, including a given word, based on a picture shown. It measures a person’s ability to articulate sentences of increasing length and complexity in a coherent logical order, illustrating sentence structure and vocabulary use.

XXXX required additional time to generate sentences and it was noted that he would often repeat the target word while processing his reply. He struggled to organise his thoughts and construct grammatically correct and meaningful spoken sentences that included the given word. Complex sentences requiring subordinate conjunctions that link clauses were a particular source of difficulty for XXXX.

He was unable to attempt sentences including the words ‘or’, ‘if’, ‘because’ and ‘unless’. Such words allow the speaker to express relationships within a sentence. For example, ‘or’ allows the speaker to join phrases of equal importance, whereas ‘because’ allows the speaker to express a causal relationship between two phrases.

When XXXX did attempt a complex sentence, i.e. express a relationship within one sentence, he was unable to score any points due to the quality of his utterance. For example, “the middle person had no money in his wallet otherwise means he can't get the food”. XXXX achieved a scaled score of 4, which is on the 2nd percentile.

Formal assessment – Receptive Language

‘Understanding Spoken Paragraphs’ (USP) – This subtest evaluates the examinee’s ability to a) sustain focus and attention while listening to spoken paragraphs of increasing length and complexity, b) understand oral narrative, c) answer questions about the content of the information and d) think critically to arrive at logical answers.

XXXX was only able to answer three questions correctly of a possible 15. He was unable to recall details, generate inferences or make sensible predictions, from the information he had heard. He divulged that he is unable to remember lengthy verbally delivered material. He obtained a scaled score of 1, which is on the 0.1st percentile and in the severe range.

Narrative Assessment

This is not a standardised test and therefore no scaled score is available.

XXXX was given a 6-frame cartoon stimulus designed to elicit a narrative. Narratives are a relatively quick method which facilitates investigation of a young person’s global structure (the ability to structure the story in a logical coherent manner), local structure (cohesion, syntactic complexity) and ability to evaluate and draw conclusions from the story rather than merely listing events.

XXXX was unable to provide an account of the pictures and unfamiliar listener would have been unable to make sense of what had happened. This is to be expected from his score on the FS subtest as he is finding it difficult to express relationships in his expressive language. His narrative, therefore, omitted many functions words and cohesive devices, for example “It fell off, he left it there, walked out of a building, went home.” Additionally, his interpretation of the story was quite unique and suggests that he may not always see what is obvious to others.

Performance IQ
This assessment includes two subtests - Block Design and Matrix Reasoning. These subtests consider a person's performance IQ, i.e. mental capacity in dealing with nonverbal skills.

This is a quick screen of XXXX' Non-Verbal IQ and is not a Full-scale IQ score. XXXX obtained the following scores:

<table>
<thead>
<tr>
<th>Performance IQ</th>
<th>Standard score</th>
<th>Percentile</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>98</td>
<td>45th</td>
</tr>
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</table>

**Literacy**

XXXX completed a short task designed to measure an individual's ability to pronounce printed words (Sight Word Efficiency) and phonemically regular non-words (Phonemic Decoding Efficiency) accurately and fluently. He achieved a standard score of 84. He found the phonemic decoding section very difficult and was unable to decode some of the words correctly, for example he read ‘phet’ as pet.

Additionally, XXXX attempted a reading comprehension sub-test for his age range (12-13 years). He found this very difficult and was unable to answer any of the first five questions correctly, therefore, the test was abandoned.

**Strengths and difficulties questionnaire (SDQ)**

The SDQ consists of 25 statements covering 5 domains of functioning: conduct problems (e.g. I get very angry), hyperactivity (e.g. I am easily distracted), emotional difficulties (e.g. I worry a lot) peer relation problems (e.g. I am usually on my own), and, prosocial behaviour (e.g. I try to be nice to others). The latter scale, the prosocial scale, measures positive functioning (as opposed to difficulties). Individuals can gain a scores in four categories for each domain; average, slightly raised, high or very high.

Overall, XXXX scored in the average range on this questionnaire.

**General observation**

XXXX attended well in the session, he responded well to the 1:1 environment and would ask for clarification when he did not understand. When XXXX visibly found the tasks difficult he reacted well to reassurance and responded well to praise. He stated that he found it hard to listen to big chunks of verbally delivered information and would often ‘switch off’ if people spoke to him for a long time.

There was a marked improvement on his performance on visual tasks and he obtained scores in the average range when visual skills were required to complete a task.

**Recommendations**

- XXXX displays a difficulty with sentences that contain more than one element, i.e. complex sentences. He would benefit from spoken instructions being chunked into smaller amounts, supported by visuals and extra time to process the information.
- A check of his comprehension is advised. This could be achieved by asking him to repeat back in his own words the instructions.
- Ensure XXXX has the opportunity to discuss and learn specific key vocabulary in a structured way. It may take XXXX longer to learn vocabulary and structured teaching will allow him to learn key words in order to fully understand and comply with any orders imposed. For example, he may not understand words such as ‘exclusion zone’, ‘statutory’, and ‘mandatory’.
- Support when seeing the ‘bigger picture’, inferencing difficulties could impact on his ability to understand how behaviour affects others.
• He would benefit from a reading assessment from the relevant professional i.e. an educational psychologist.
• XXXX would benefit from a referral to his local speech and language therapy department. This would allow for a comprehensive assessment of his speech and language. The results of this short assessment indicate that XXXX is demonstrating low language abilities relative to age peers which may impact academic achievement and participation in classroom activities. It is important to note however, that this is a snap shot of his abilities at that particular time.

If you have any questions about this report, please do not hesitate to contact me.

Maxine Winstanley BA, BSc, MRes, Cert MRCSLT
Speech and Language Therapist

Referral to speech and language therapy advised;

YES ☑ NO

Example 2

Name: XXXXXXXX Date of Assessment:
Organisation: Date of Report:

XXXXXX completed two subtests of the Clinical Evaluation of Language Fundamentals, 4th Edition (CELF-4). This language assessment is standardised to an age appropriate population and is suitable for young people aged 5 – 16.11 years. Although XXXXXXX is slightly older than the cut off age, this test was deemed appropriate. It is important to note, the CELF-4 consists of 17 subtests, and five of these are mandatory to gain a core language score for the young person. This, therefore, has not been possible in this session. However, an expressive test and a receptive test have been conducted and the results are below.

XXXXXX additionally completed the reading comprehension subtest of the Wechsler Individual Achievement Test, 2nd edition (WIAT-II). This includes stories and sentences assessing literal, inferential and lexical comprehension. The Test of Word Reading Efficiency—Second Edition (TOWRE—2) was also administered. This is a measure of an individual’s ability to pronounce printed words (Sight Word Efficiency) and phonemically regular non-words (Phonemic Decoding Efficiency) accurately and fluently.

XXXXXX also completed the Wechsler Abbreviated Scale of Intelligence (WASI). This test is standardised and provides a quick, reliable measure of intelligence. It consists of four subtests, two comprise of the verbal scale and their sum represent the Verbal IQ (VIQ) and two comprise of the performance scale and their sum represent the Performance IQ (PIQ). The PIQ is a reflection of a young person’s non-verbal intelligence, only this part of the test was administered. The block design and matrix reasoning subtests comprise the PIQ. This test requires the young person to copy abstract designs using coloured blocks. The scoring is objective and related to the time taken to complete the task. The Matrix reasoning subtest is a further objective test and the young person is presented, in turn, with 35 incomplete gridded patterns. The young person is provided to pick, from a choice of 5, the correct response for the last pattern in the grid. This test is untimed.

This report is based on a limited amount of time spent with XXXXXXX in an assessment situation. The conclusions and recommendations should, therefore, be considered
alongside other observations of XXXXXX’s speech, language and communication skills in a range of settings. Results will either be given as standard scores, scaled scores and/or percentiles. Percentile ranks indicate a student’s standing relative to others of the same age in the norm group. A young person who achieves a percentile rank of 25 performs as high as 25% of students in his age category conversely it indicates that 75% of students score above him.

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</table>

Results

**Formal assessment- Expressive Language**

‘Formulating Sentences’ - This subtest requires the young person to formulate a sentence, including a given word, based on a picture shown. It measures a person’s ability to articulate sentences of increasing length and complexity in a coherent logical order, illustrating sentence structure and vocabulary use.

XXXXXX concentrated well for this task but sometimes found it a little difficult to construct a grammatically correct sentence. He stated that he did not have any communication problems and had no problems expressing himself. He, however, did need extra time to generate complex sentences and would sometimes use incorrect conjunctions which meant some of his sentences sounded odd, for example “the teacher taught the students how to mix the chemicals however if she didn’t there would be consequences”.

XXXXXX displayed a few semantic difficulties during the administration of the assessment. Semantic ability concerns understanding the meanings of words or phrases and the expression of these. He would sometimes comment that he was unsure of the word to use. When describing a picture of a lady digging in a farm he stated, “The old man hoed the ground and the lady spaded the ground”.

He gained a scaled score of 7, which is on the 16th percentile and in the low average range.

**Formal assessment – Receptive Language**

‘Understanding Spoken Paragraphs’ (USP) – This subtest evaluates the examinee’s ability to a) sustain focus and attention while listening to spoken paragraphs of increasing length and complexity, b) understand oral narrative, c) answer questions about the content of the information and d) think critically to arrive at logical answers.

XXXXXX was able to understand the main idea of each paragraph and make logical and correct predictions and inferences about the verbally delivered material. His errors consisted of an inability to remember the less salient specific details.

XXXXXX obtained a scaled score of 11, which is on the 63rd percentile and is in the average range.

**Narrative Assessment**

This is not a standardised test and therefore no scaled score is available.
XXXXXX was given a 6-frame cartoon stimulus designed to elicit a narrative. Narratives are a relatively quick method which facilitates investigation of a young person’s global structure (the ability to structure the story in a logical coherent manner), local structure (cohesion, syntactic complexity) and ability to evaluate and draw conclusions from the story rather than merely listing events.

XXXXXX was able to give a good account of the story. He did not, however, mention any of the characters’ internal mental states and processes, such as their goals or beliefs. For example, he commented that “the man shouted up towards the balcony” but failed to mention that this was because the man was angry somebody had dropped a plant pot on his head.

**Performance IQ**

This assessment includes two subtests - Block Design and Matrix Reasoning. These subtests consider a person’s performance IQ, i.e. mental capacity in dealing with nonverbal skills.

This is a quick screen of XXXXXX ’s Non-Verbal IQ and is not a Full-scale IQ score. XXXXXX obtained the following scores

<table>
<thead>
<tr>
<th></th>
<th>Standard score</th>
<th>Percentile</th>
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<tbody>
<tr>
<td>Performance IQ</td>
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<td>63rd</td>
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</tbody>
</table>

**Literacy**

XXXXXX completed a short task designed to measure an individual’s ability to pronounce printed words (Sight Word Efficiency) and phonemically regular non-words (Phonemic Decoding Efficiency) accurately and fluently. He gained a score in the average range.

Additionally, XXXXXX completed a reading comprehension task for his age range (14 - 17 years). He gained a score in the average range.

**Strengths and difficulties questionnaire (SDQ)**

The SDQ consists of 25 statements covering 5 domains of functioning: conduct problems (e.g. I get very angry), hyperactivity (e.g. I am easily distracted), emotional difficulties (e.g. I worry a lot) peer relation problems (e.g. I am usually on my own), and, prosocial behaviour (e.g. I try to be nice to others). The latter scale, the prosocial scale, measures positive functioning (as opposed to difficulties). Individuals can gain a scores in four categories for each domain; average, slightly raised, high or very high.

XXXXXX ’s total score fell in the average range, as did all the scores in the individual domains.

**Alexithymia questionnaire**

Alexithymia is construed as an emotion processing deficit. It refers to a diminished ability to recognise, interpret and describe emotions, and an externally orientated cognitive style. This is a self-report scale that is comprised of 20 items, measuring three subscales, difficulties describing feelings, difficulty identifying feelings and externally-orientated thinking. The total alexithymia score is the sum of responses to all 20 items, and scoring is described as; equal to or less than 51 = non-alexithymia, 52 to 60 = possible alexithymia and scores equal to or greater than 61 = alexithymia.

XXXXXX scored 36 on this questionnaire.
General observation

XXXXXX attended well in the session; he was on time, engaged and polite. He worked hard and completed all tasks asked of him. He was able to converse with an unfamiliar adult; answering questions and providing information.

In the time afforded it has not been possible to assess the social and functional aspects of XXXXXX 's language (pragmatic language). Pragmatics is the branch of linguistics concerned with contextually appropriate use of language. It is considered a higher level linguistic skill as it requires integration of several elements of linguistic knowledge with information from the wider social and linguistic context. Pragmatic language encompasses linguistic, paralinguistic, and social interactional competence.

If you have any questions about this report, please do not hesitate to contact me.

Maxine Winstanley BA, BSc, MRes, Cert MRCSLT
Speech and Language Therapist

Referral to speech and language therapy advised;

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td></td>
<td>✓</td>
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</tbody>
</table>
# Speech and Language Therapist Referral Form

**Date of Referral:** [ ]  **Date of Assessment:** [ ]

**Name:** [ ]  **Date of Birth:** [ ]

**Current Order:** [ ]

**Number of Previous Offences:** [ ]

**Age at first recorded criminal offence:** [ ]

**Is the young person a looked after child?**  
   Yes: [ ]  No: [ ]

**Is the young person currently in education or training?**  
   Yes: [ ]  No: [ ]

If in education, please provide detail of the type of school he/she attends:

[ ]

**Does the young person have an EHC plan?**  
   Yes: [ ]  No: [ ]

**Are there any known special needs?**  
   Yes: [ ]  No: [ ]

If yes please give details e.g. ADHD, Hearing impairment, Autism

Has the young person reported any neurological trauma?  
   Yes: [ ]  No: [ ]
Is English the young person’s first language?  
Yes: ☐  No: ☐

Is the participation information sheet signed by:

young person ☐  parent/guardian ☐  Youth Justice Worker ☐

Thank you for completing this form
Appendix 3
Invitation Letter

Dear

My name is Maxine and I am a speech and language therapist. Your Youth Offending Team worker, ____________, has asked me to see you. Thank you for agreeing to see me.

I would like you to come to ______________________

My telephone number is

You can text me on

I look forward to meeting you.

Maxine Winstanley
Appendix 4 – Participation Information Sheet and consent form for the Triage Centre

Participant Information Sheet

Version 1 – 29/02/2016

You are being invited to take part in a research study. This study is looking at the language skills of young people who have been referred to Child Action North West. It is important for you to understand why the research is being done and what it will involve, before you agree to take part. Please read the following information. Please ask if there is anything that is not clear or if you would like more information. Thank you for reading this.

Who will conduct the research?
Maxine Winstanley, a speech and language therapist based at the University of Manchester.

Title of the Research
Young offenders and reparation: language abilities, rates of recidivism & severity of crime.

What is the aim of the research?
To better understand the language skills of young people who have been in custody. Also to see if language skills affect future behaviour.

Why have I been chosen?
You have been chosen because you have been referred to Child Action North West.

What will I be asked to do?
You will be asked to complete short tasks looking at your language skills. These short tasks will involve you:-

- Looking at a short cartoon and telling the story in your own words.
- Looking at a picture and saying a sentence to explain what is going on in the picture
- Listening to a short paragraph and answering four questions about it.
- Arranging coloured blocks so they match a shape

You will also be asked to look at three short questionnaires. You will not have to do any writing, instead you will circle the response you think is best. You will be asked to look at two short reading tests, you will be asked to read words. If this is too difficult we can stop at any time.

What happens to the data collected?
The data is anonymised, this means nobody knows you have taken part. There will be a lot of people who take part and all the answers will be put together. This means it will not be possible to identify that you took part or which answers are yours. All the information will be kept at the University of Manchester by the research team and used for this study. The data will be kept until it is no longer needed when it will be destroyed.
securely. With your permission, we would also like to share some of the data we collect with other researchers as it could be used for other research. If we do share data it will have all names removed and nobody will know that you took part in the study.

**Will any audio recording take place?**
Only the short story will be audio recorded. This is because the researcher may not be able to accurately write what you say while you are telling the short story in your own words. When the tasks are finished the researcher will note down what you have said and delete the recording straight away.

**How is confidentiality maintained?**
Your name will not be put with your answers, instead you will be given a number.

**What if I do not like it or I find it difficult?**
You can stop the assessments at any time and you do not have to complete them to the end if they are too difficult. It will be ok if you decide to stop.

**What is the duration of the research?**
It should take about one hour. This can be done in two 30 minute sessions.

**Where will the research be conducted?**
It is best if this is completed at the Youth Offending Team. However, the researcher can come to your house.

**Will the outcomes of the research be published?**
The outcomes of the research will directly inform the people at the Youth Offending team so they can plan and develop services. The research will also be published so it can help other people understand the needs of young people.

**Criminal Records Check**
The researcher has been subject to an enhanced Criminal Records Check, dated 17th October 2014.

**Who has reviewed the research project?**
This project has been reviewed by the University of Manchester Research Ethics Committee 1.

**What if something goes wrong?**
The lady in charge of this study can be contacted at gina.conti-ramsden@manchester.ac.uk. You are free to withdraw at any time and if you require any assistance then please contact the researcher at maxine.winstanley@postgrad@manchester.ac.uk.

If there are any issues regarding this research that you would prefer not to discuss with members of the research team, please contact the Research Governance and Integrity Team by either writing to 'The Research Governance and Integrity Manager, Research Office, Christie Building, The University of Manchester, Oxford Road, Manchester M13 9PL', by emailing: Research.Complaints@manchester.ac.uk, or by telephoning 0161 275 7583 or 275 8093.

**Contact for further information**
Maxine Winstanley, email address – maxine.winstanley@postgrad.manchester.ac.uk, telephone – 0161 275 3507 / 07849 589789.
### CONSENT FORM

If you are happy to participate please complete and sign the consent form below

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1) **I confirm that I have read the attached project information sheet and have had the opportunity to consider the information, ask questions and these have been answered satisfactorily.**

2) **I understand that I can withdraw at any time without giving any reasons and this will not impact on me.**

3) **I agree to the use of some of my sentences but my name will not be used and nobody will know I have said them.**

4) **I agree that any data collected may be passed as anonymous data to other researchers**

5) **I agree that my short story can be audio taped. I understand it will be transcribed by the researcher within 24 hours and then deleted from the recording device.**

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I agree to take part in the above project

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| Name of person taking consent | |
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Version 2 03/03/16
Appendix 5 – Participation Information Sheet and consent form for Youth Offending Teams

Participant Information Sheet

Version 5 – 03/05/2016

You are being invited to take part in a research study. This study is looking at the language skills of young people who have been referred to the Youth Offending Team. It is important for you to understand why the research is being done and what it will involve, before you agree to take part. Please read the following information. Please ask if there is anything that is not clear or if you would like more information. Thank you for reading this.

Who will conduct the research?
Maxine Winstanley, a speech and language therapist based at the University of Manchester.

Title of the Research
Young offenders and reparation: language abilities, rates of recidivism & severity of crime.

What is the aim of the research?
To better understand the language skills of young people who have been in custody. Also to see if language skills affect future behaviour.

Why have I been chosen?
You have been chosen because you have been referred to the Youth Offending Team.

What will I be asked to do?
You will be asked to complete short tasks looking at your language skills. These short tasks will involve you:
- Looking at a short cartoon and tell the story in your own words.
- Looking at a picture and saying a sentence to explain what is going on in the picture.
- Listening to a short paragraph and answering four questions about it.
- Arranging coloured blocks so they match a shape.

You will also be asked to look at three short questionnaires. You will not have to do any writing, instead you will circle the response you think is best. You will be asked to look at two short reading tests, you will be asked to read words. If this is too difficult we can stop at any time.

What happens to the data collected?
The data is anonymised; this means nobody knows you have taken part. There will be a lot of people who take part and all the answers will be put together. This means it will not be possible to identify that you took part or which answers are yours. All the information will be kept at the University of Manchester by the research team and used for this study. The data will be kept until it is no longer needed when it will be destroyed.
securely. With your permission, we would also like to share some of the data we collect with other researchers as it could be used for other research. If we do share data, it will have all names removed and nobody will know that you took part in the study.

**Will any audio recording take place?**
Only the short story will be audio recorded. This is because the researcher may not be able to accurately write what you say while you are telling the short story in your own words. When the tasks are finished the researcher will note down what you have said and delete the recording straight away.

**How is confidentiality maintained?**
Your name will not be put with your answers, instead you will be given a number. Your YOT worker will be notified of your results.

**What if I do not like it or I find it difficult?**
You can stop the assessments at any time and you do not have to complete them to the end if they are too difficult. It will be ok if you decide to stop.

**What is the duration of the research?**
It should take about one hour. This can be done in two 30 minute sessions.

**Where will the research be conducted?**
The research will take place while you are visiting the youth offending team.

**Will the outcomes of the research be published?**
The outcomes of the research will directly inform the people at the YOT so they can plan and develop services. The research will also be published so it can help other people understand the needs of young people.

**Criminal Records Check**
The researcher has been subject to an enhanced Criminal Records Check, dated 17th October 2014.

**Who has reviewed the research project?**
This project has been reviewed by the University of Manchester Research Ethics Committee 1.

**What if something goes wrong?**
The lady in charge of the research can be contacted at gina.conti-ramsden.manchester.ac.uk. You are free to withdraw at any time and if you require any assistance then please contact the researcher at maxine.winstanley@postgrad@manchester.ac.uk.

If there are any issues regarding this research that you would prefer not to discuss with members of the research team, please contact the Research Governance and Integrity Team by either writing to 'The Research Governance and Integrity Manager, Research Office, Christie Building, The University of Manchester, Oxford Road, Manchester M13 9PL', by emailing: Research.Complaints@manchester.ac.uk, or by telephoning 0161 275 7583 or 275 8093.

**Contact for further information**
Maxine Winstanley, email address – maxine.winstanley@postgrad.manchester.ac.uk telephone – 0161 275 3507 / 07849 589789
CONSENT FORM

If you are happy to participate, please complete and sign the consent form below

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6) I confirm that I have read the attached project information sheet and have had the opportunity to consider the information, ask questions and these have been answered satisfactorily.

7) I understand that I can withdraw at any time without giving any reasons and this will have no impact on me in anyway

8) I agree to the use of some of my sentences but my name will not be used and nobody will know I have said them.

9) I agree that any data collected may be passed as anonymous data to other researchers

10) I agree that my short story can be audio taped. I understand it will be transcribed by the researcher within 24 hours and then deleted from the recording device.

I agree to take part in the above project

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Name of person taking consent

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Version 4 – 03/03/16
You are invited to take part in research with a speech therapist from The University of Manchester.

The research is looking at how young people use language.

If you decide to help, you will look at a short cartoon and tell the story in your own words. You will also look at some pictures and then describe them. You will be asked to make a pattern with some blocks.

This will take about one hour. It can be carried out in two 30-minute sessions.
You can stop doing the assessments at any time.

Your name will not be in the report. People will not know you have taken part. It will be private.

Thank you

Shall we get started?